



PRODUCT CATALOGUE

AC-DC CONVERTERS
DC-DC CONVERTERS
ISOLATED TRANSCEIVERS

**RELIABLE POWER SUPPLY
MADE BY AIPU**

CATALOGUE

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COMPANY PROFILE



Guangzhou Aipu Electronic Technology Co., Ltd, a China local High-tech enterprise continued concentrated investment in R&D, manufacturing, sales and service on the products of AC/DC & DC/DC converters. Aipu has dedicated to providing whole power supply solutions and products for customers relying on the experienced R&D and excellent reliability testing lab. Aipu power supplies have been widely used in the fields of home energy storage, Commercial energy storage, Power Grid energy storage, High-voltage converting, Solar power generation system, SVG, PCS and Industrial control, etc. All the products are compliant with CE(RoHS, Reach) regulations, More and more have been passed CE/UL/TUV/ETL certificates. Aipu has raised and stuck to the business philosophy of marketing guiding, technology driven and quality first. The high power-density technology and design on the modular has been great support for customer requirements.

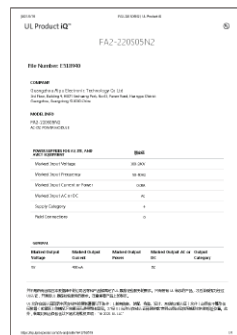
Aipu team performs professionally and fast responding on the new product design, with experienced highvoltage solutions and skilled manufacturing processes output series of very full range of input voltages for the solar energy storage special requirements. The products input voltages covered 60-600VDC, 80-745VDC, 80-1000VDC, 100-1000VDC, 200-1200VDC, 250-1500VDC, output voltages from 12V to 35Vdc, with the advantages of good reliability, high power density, strong interference rejection, high efficiency, low ripple & noise, etc. Meanwhile, Aipu could also provide customization design with abundant options for customers.



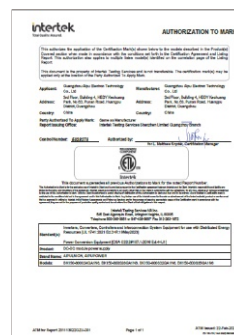
ISO9001:2015 Certification



IATF16949:2016 Certification



UL Certification



ETL



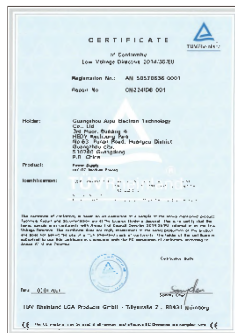
REACH



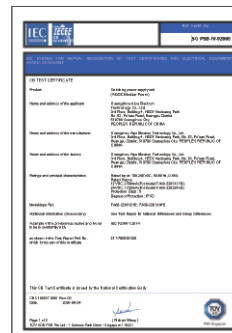
CE Certification



TUV Mark



TUV CE



CB Report



RoHS

In order to meet Aipu company continuous growing and international development strategy, the previous trademark "AIPULNION" has been replaced by the new trademark "AIPUPOWER" which will be used in all official documents, websites, advertisements, products marking, etc. The company name, legal entity, address and the contact information will be kept no change. The new trademark switching will not affect the ongoing contracts, agreements, responsibility and obligations between Aipu and the customers.

Aipu has advanced Automatic production line, Automatic test line, Automatic burn-in equipment, Reliability test laboratory, EMC laboratory and Failure analysis laboratory.

R&D Center



R&D debugging room



Failure Analysis Lab



EMS Test Equipment



EMC Lab



SMT Workshop



Production Workshop



Thermal Shock Chamber



Auto Test & Marking



Intelligent Burn-in System



Stock



AC-DC POWER SUPPLY

AC-DC Encapsulated

Part No.	Power(W)	Input Volt.(VAC/VDC)	Output Volt.(VDC)	Certificate	Page
FA2-220SXXN2	2	85-305/120-430	3,3,5,12,24		09
FA3-220SXXA2N3	3	85-265/120-380	3,3,3,8,5,9,12,13,15,24	CE	09
FA3-300SXXY2N3	3	90-528/100-745	5,12,15,24		09
FA3-220SXXG2D4	3	85-305/120-430	3,3,5,12,12.5,15,24		09
DA3-220SXXG2N4	3	85-305/100-430	5,12,15,24	CE	09
DA5-220SXXG2N4	5	85-305/120-430	5,12,15,24		09
FA5-220SXXC2D4	5	85-305/120-430	3,3,5,9,12,15,24	CE	09
FA5-220SXXG2D4	5	85-305/120-430	3,3,5,12,24	CE CB cULus	10
FA5-220E05XXC2D3	5	85-265/120-380	12,24		10
FA5-220SXXY2N4	5	85-305/120-430	3,3,5,12,15,24		10
FA6-220SXXD2	6	85-265/120-380	3,3,5,9,12,15,16.5,24	CE	10
FA10-380SXXF2N4	10	85-528/120-745	5,12,24		10
FA10-220SXXGA2N4	10	85-305/120-430	3,3,5,12,12.5,15,24	CE CB cULus	10
FA10-220SXXC2N3	10	85-265/120-380	5,12,15,24		10
FA10-220SXXY2N4	10	85-305/120-430	5,12,15,24	CE	10
FA10-220SXXY2D4	10	85-305/120-430	4,8,5,12,24	CE	11
FA10-220SXXE2D4	10	85-305/120-430	3,3,5,9,12,15,24,28	CE	11
FA10-220DXE2D4	10	85-265/120-380	5,9,12,15,24	CE	11
FA10-220E05XXE2D4	10	85-265/120-380	5,12,24		11
DA10-220SXXP2D4	10	90-310/127-438	3,3,5,9,12,15,24	CE	11
FA10-220SXXG2N4	10	85-305/120-430	3,3,5,12,12.5,15,24	CE CB cULus	11
FA15-220SXXG2N4	15	85-305/120-430	5,12,12.5,15,24	CE CB cULus	11
FA15-220SXXF2D4	15	85-265/120-380	3,3,5,9,12,15,20,24	CE	11
FA15-220DXF2D4	15	85-305/120-430	5,12,15	CE	11
FA15-220E05XXF2D4	15	85-265/120-380	12,24	CE	11
FA15-220SXXY2N3	15	85-305/120-430	5,12,12.5,12.8,15,24	CE	12
FA15-220H05XXXF2D4	15	85-265/120-380	5,12,24,-5,-12,-15		12
FA15-300SXXG2N4	15	176-418/248-591	5,12,24		12
FA20-220SXXP2D4	20	85-265/120-380	5,9,12,15,24,48	CE	12
FA20-220SXXF2D4	20	85-265/120-380	3,6,5,9,12,15,24,48	CE	12
FA20-220H05XXH2D4	20	85-265/120-370	±12,±15	CE	12
FA20-300SXXH2D4	20	90-528/100-745	5,12,15,24	CE	12
DA20-220SXXG2N4	20	85-305/120-430	3,3,5,5,2,9,12,12.5,15,24	CE CB cULus	12
DA24-220SXXG2N3Y	24	85-305/120-430	3,3,5,12,24	CE	12
FA20-220E05XXH2N4	20	85-265/120-370	12,24		13
FA25-220SXXH2D4	25	85-305/120-430	5,9,12,15,18,24,26.5,28,29.3,30,48	CE	13
FA25-220DXH2D4	25	85-305/120-430	12,15,		13
FA25-220E05XXH2D4	25	85-305/120-430	12,15,24		13
FA30-220SXXH2D4	30	85-305/120-430	5,9,12,15,18,24	CE	13
FA30-380SXXH2N4	30	176-528/248-745	5,12,15,24		13

AC-DC POWER SUPPLY

AC-DC Encapsulated

Part No.	Power(W)	Input Volt.(VAC/VDC)	Output Volt.(VDC)	Certificate	Page
FA30-220SXXG2N5	30	100-265/140-380	3.3,5,9,12,15,24	CE	13
FA40-220S24G2N5	40	85-305/120-430	5,12,15,24,48		13
FA40-220SXXH3N4	40	85-265/120-380	5,12,17,17.5,17.6,24,48		13
FA40-220SXXW2D4	40	85-265/120-380	5,12,15,24		13
FA60-220SXXH2N5	60	85-305/120-430	5,12,15,24		14
FA60-220SXXG2N4	60	85-305/120-430	12,15,36		14
FA90-220SXXG2N5	90	85-305/120-430	12,15,24		14
FA120-600SXXG1N4	120	85-900	24,28,38,48		14
DA150-1000SXXG1N4	150	85-1300	24,28,32,35		14
DA180-1000SXXG1N4	180	85-1300	35		14
WA100-L1	100	100-265/140-380	12,24		14
NA150-L1	150	165-265/200-380	24		14
NA200-M1	200	165-265/230-370	12,24		14

AC-DC Open-frame

Part No.	Power(W)	Input Volt.(VAC/VDC)	Output Volt.(VAC/VDC)	Certificate	Page
FA3-220SXXB9D4	3	85-305/120-430	3.3,5,9,12,12.6,15,24	CE 	15
FA5-220SXXB9D4	5	90-265/127-430	3.3,5,5.25,9,12,15,24		15
DA3-220SXXG9D4	3	85-305/70-430	3.3,5,9,12,15,24		15
DA5-220SXXG9D4	5	85-305/70-430	3.3,5,9,12,12.1,15,24		15
DA5-300SXXGA9N4	5	85-418/100-591	5,12,24		15
DA5-380SXXGA9N4	5	90-528/127-746	3.3,5,12,15,24		15
DA5-300SXXG9N4	5	90-528/127-746	5,9,12,15,24		16
DA5-380SXXG9N4	5	85-418	12,15		16
FA8-220SXXB9N3	8	85-305/120-430	5,12,24		16
DA10-220SXXG9D4	10	85-305/120-430	3.3,5,9,12,15,24		16
DA10-220SXXG9N4	10	85-305/120-430	3.3,5,9,12,12.5,15,24	CE	16
DA10-300SXXG9N4	10	90-528	5,12,24		16
DA10-380SXXG9N4	10	85-528/100-745	5,12,24		16
FA15-220SXXB9N3	15	85-305/120-430	3.3,5,12,12.7,15,24	CE	16
FA15-380SXXG9N4	15	176-528	5,12,15,24		17
DA45-220T05XXXG9N3	45	85-265/120-380	12,15,-5,-12,-15		17
DA48-220S24B	48	110-270/150-385	24		17
DA150-220SXXG9N3	150	80-264	12,24,48		17

DC-DC CONVERTER

DC-DC (1-3W)

Part No.	Power(W)	Input Volt.(VDC)	Output Volt. (VDC)	Certificate	Page
NN1-XXSXXA3NT	1	3.3,5,12,15,24	3.3,5,9,12,15,24	CE	18
NN1-XXDXXA3NT	1	5,12,15,24	±3.3,±5,±9,±12,±15,±24	CE	18
NN3-XXSXXCN	3	5,12,24	5,12,15,24		18
NN1-XXXXXF3N	1	5,12,24	3.3,5,12,15,±5,±12,±15	CE	19
NN1-XXXXXFN	1	5,12,24	3.3,5,12,15,±5,±12,±15	CE	19
NN1-XXSXXM	1	5,12,15,24	3.3,5,9,12,15,24		19
NN1-XXSXXMN	1	5,12,15,24	3.3,5,9,12,15,24		19
NN1-XXSXXM3N	1	5,12,15,24	3.3,5,9,12,15,24		19
NN2-XXSXXA3NT	2	3.3,5,12,15,24	3.3,5,9,12,15,24	CE	20
NN2-XXXXXFN	2	5,12,24	3.3,5,12,15,±5,±12,±15	CE	20
NN2-XXXXXF3N	2	5,12,24	3.3,5,12,15,±5,±12,±15	CE	20
NN1-XXSXXANT	1	3.3,5,12,15,24	3.3,5,9,12,15,24	CE	21
NN2-XXSXXANT	2	3.3,5,12,15,24	3.3,5,9,12,15,24	CE	20
NW1-XXSXXANT	1	3.3,5,12,24	3.3,5,12		19
NW1-XXSXXD7R3	1	5	5		23
NN2-XXXXXC3N	2	5,12,24	5,12,15,24		21
NN3-XXSXXC3N	3	5,12,24	5,12,15,24		21
NN2-XXSXXC4N	2	5,12,24	5,12,15,24		27
NN3-XXSXXC4N	3	5,12,24	5,12,15,24		27
FN1-XXXXXBN	1	3.3,5,9,12,15,24	3.3,5,9,12,15,24,±3.3,±5,±9,±12,±15,±24	CE	22
FN1-XXXXXB3N	1	3.3,5,9,12,15,24	3.3,5,9,12,15,24,±3.3,±5,±9,±12,±15,±24	CE CB	22
FN2-XXXXXC3N	2	5,12,15,24	3.3,5,9,12,15,24,±3.3,±5,±9,±12,±15,±24	CE  	23
FN2-XXXXXC3N	2	5,12,15,24	3.3,5,9,12,15,24,±3.3,±5,±9,±12,±15,±24	CE	23
NWV75-XXSXXANT	0.75	3.3,5,12,24	3.3,5,12	CE	23
NNV5-XXSXXBN/B3N	0.5	5	5		23
NNV25-XXSXXANT	0.25	3.3,5,12,15,24	3.3,5,9,12,15,24		23
FNV5-XXSXXA	0.5	5	5		24
NN1-XXDXXANT	1	5,12,15,24	±3.3,±5,±9,±12,±15,±24		24
FN1-XXSXXAN	1	3.3,5,9,12,15,24	3.3,5,9,12,15,24	  CE	25
FN1-XXXXXH6	1	5,12,15,24	5,9,12,15,24,±5,±9,±12,±15,±24	CE	24
FN2-XXXXXH6	2	5,12,15,24	5,9,12,15,24,±5,±9,±12,±15,±24	CE	25
NW1-XXDXXDR3	1	5,12,24	±5,±9,±12,±15		25
NW2-XXDXXDR3	2	5,12,24	±5,±9,±12,±15		25
FW1-XXSXXB	1	3.3,5,12,15,24	3.3,5,9,12,15,24	CE	26
FW1-XXSXXB3	1	3.3,5,12,15,24	3.3,5,9,12,15,24	CE	26
FW2-XXSXXC	2	5,12,15,24	5,12,15	CE	26
FW2-XXSXXC3	2	5,12,15,24	5,12,15	CE	26
KW1-16XXXE3	1	5,12,15	5,12,15,±5,±12,±15		27
KW3-16XXXXXE3R3	3	5,12,15	5,12,15,±5,±12,±15		27
KW1-XXXXXER3/E3R3	1	9-36	3.3,5,9,12,15,24,±5,±9,±12,±15,±24	CE	27
KW3-XXXXXER3/E3R3	3	4.5-9,9-31	3.3,5,9,12,15,24,±5,±9,±12,±15,±24	CE	27

DC-DC CONVERTER

DC-DC (6-60W)

Part No.	Power(W)	Input Volt. (VDC)	Output Volt. (VDC)	Certificate	Page
PFD6-XXSXXA3(C)2	6	5,24,48	3.3,5,9,12,15,18,24	CE	28
PFD6-XXDXXA3(C)2	6	5,24,48	±3.3,±5,±9,±12,±15,±18,±24	CE	28
PFD6-XXSXXE2(C)3	6	24,48	3.3,5,9,12,15,18,24	CE	28
PFD6-XXDXXE2(C)3	6	24,48	±3.3,±5,±9,±12,±15,±18,±24	CE	28
PFD6-XXSXXE2N6	6	24,48	5,6,9,12,15,18,24	CE	29
DD6-05SXXE3(C)2	6	24,48	5,12,15,24		29
FD6-110SXXA3N4	6	110	3.3,5,5.2,9,12,15,24		29
DD10-XXDXXE3C2	10	24,48	±5,±12,±15		29
DD10-XXSXXE3C2	10	24,48	3.3,5,12,15,24		29
FD12-110SXXA3N4	12	110	3.3,5,5.2,9,12,15,24		29
FD12-XXSXXA3C4	12	24,48	3.3,5,9,12,15,24		30
FD12-110XXA3(C)3	12	110	±3,±5,±9,±12,±15,±24		30
PFD12-XXSXXA3(C)2	12	24,48	3.3,5,9,12,15,24	CE	30
PFD12-XXDXXA3(C)2	12	24,48	±3.3,±5,±9,±12,±15,±24	CE	30
PFD15-XXSXXA3(C)2	15	24,48	3.3,5,9,12,15,24	CE	30
DD30-36E0524G9N5	30	48	5,24		30
FD20-110SXXB3C5	20	110	3.3,5,9,12,15,24		31
FD20-110SXXB3(C)3	20	110	5,12,15,24		31
PFD20-110SXXA3R3	20	110	3.3,5,9,12,15,24		31
PFD20-XXSXXA3(C)2	20	24,48	3.3,5,9,12,15,24	CE	31
PFD30-XXSXXA3R2	30	24,48	3.3,5,9,12,15,24	CE	31
FD30-XXDXXB3C3	30	24,48	5,9,12,15,24		31
FD30-XXSXXB3(C)	30	24,48	3.3,5,9,12,15,24	CE	32
FD30-110SXXB3(C)3	30	110	3.3,5,12,15,24,48	CE	32
FD40-110SXXB3(C)3	40	110	3.3,5,12,15,24,48	CE	32
FD50-110SXXB3(C)3	50	110	3.3,5,12,15,24,48	CE	32
FD50-XXSXXB3(C)	50	24,48	5,12,15,24	CE	32
PFD50-XXSXXB3(R)2	50	24,48	5,12,15,24	CE	32
FD60-XXSXXB3R2	60	24,48	5,12,15,24		32

DC-DC CONVERTER

DC-DC (5-350W)

Part No.	Power(W)	Input Volt.(VDC)	Output Volt.(VDC)	Certificate	Page
BK5-600SXXH1N4	5	200-1200	5,12,15,24		33
BK15-500SXXH2N6	15	100-1000	12,15,24		33
BK15-500SXXH1N4	15	100-1000	5,12,15,24		33
BK15-800SXXW2N6	15	200-1500	12,15,24		33
BK20-400SXXH2N6	20	60-750	12,24		33
BK20-500SXXH2N6	20	200-820	12,15,24		33
BK25-170SXXH2N4	25	45-300	12		34
BK25-500SXXH1D4	25	100-1000	12,24		34
BK25-500SXXH1N4	25	100-1000	12,15,24		34
BK25-600DXXH1N4	25	200-1200	±5,±12,±15,±24		34
BK25-600SXXH1N4	25	200-1200	5,12,15,24		34
BK25-600DXXH2D4	25	200-1200	±12,±15,±24		34
BK40-600SXXW2N4	40	200-1200	12,15,24		34
BK40-650SXXW2N4	40	200-1200	12,15,24	 	34
BK40-850SXXG2N6	40	200-1500	12,24,28,35,37		35
BK75-500SXXG(A)1N6	75	80-1000	12,15,24,28,32,35		35
BK150-800SXXGA1D6	150	250-1500	24,28,32,35		35
BK150-800SXXGB1D6	150	250-1500	12,24,28		35
BK150-800SXXGF1N6	150	250-1500	24,28,32		35
BK200-800SXXG1N6	200	250-1500	24,48		35
BK350-800SXXG1N6	350	300-1500	24,28,32		35

DC-DC (K78 Series - Unisolated)

Part No.	Output current(mA)	Input Volt.(VDC)	Output Volt.(VDC)	Certificate	Page
K78XX-500R3	500	4.75-34	3.3,5,9,12,15		36
K78XX-1000R3	1000	6-34	3.3,5,9,12,15		36
K78XX-2000	2000	4.75-18	3.3,5,12		36

DC-DC (QA Series - IGBT/SIC Drive Module)

Part No.	Input Volt. Range(VDC)	Output Volt.(VDC)	Certificate	Page
QAXX3C-XXXXR3	4.5-5.5,10.8-13.2,13.5-16.5,21.6-26.4	+15/-5,+18/-3.5,+20/-4,+20/-3.5		37
QAXX1-XXXXR3	10.8-13.2,21.6-26.4	+15/-3		37
QAXX3H-XXR3	21.6-26.4	24		37
QA2401C-2004R3L	21.6-26.4	+20/-4		37
QAXX1R3	10.8-13.2,13.5-16.5,21.6-26.4	+15/-8		37

COMMUNICATION CONVERTER

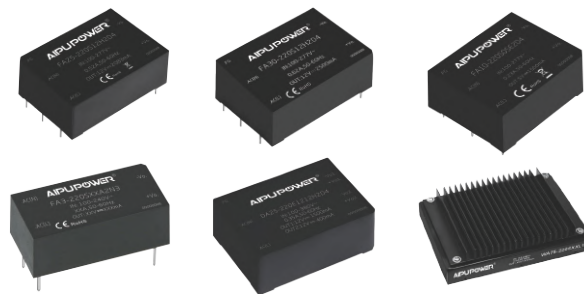
Isolated Transceivers

Part No.	Baud Rate	Nodes/Bus	Output Volt. (VDC)	Certificate	Page
RS485-XXL/HSA	100/500Kbps	256	3.3,5		38
RS485-XXL/HSAV	100/500Kbps	256	3.3,5		38
PRSCAN-XXHSA	1Mbps	110	3.3,5		38
RS485-XXL/HSSV	100/500Kbps	256	3.3,5		38
RSCAN-XXHSSV	1Mbps	110	3.3,5		38
RS485-XXHSAVE	500Kbps	256	3.3,5		38
RS485-XXL/HSAVC	100/500Kbps	128/32	3.3,5		38
RS485-XXHSSVE	500Kbps	256	3.3,5		38

◆ Typical features

- Global adapted input voltage range
- Low stand-by power consumption
- High isolation voltage
- Enclosed plastic case, flame class UL94-V0
- Operating temperature from -40°C to +75°C
- Output over-current, short circuit & over-voltage protections
- Compliant with IEC/EN62368/UL62368
- Safety Class II
- PCB DIP mounting
- Both AC & DC input available
- Additional circuit diagram is recommended for high EMC requirement

Application: Industry control, Electric power, EV charger & others new energy fields



FA2-220SXXN2



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA2-220S3V3N2	85-305/ 120-430	3.3	600	68
FA2-220S05N2		5	400	70
FA2-220S12N2		12	167	75
FA2-220S24N2		24	83	78
Package Dimensions: 33.80*22.20*15.30mm				

FA3-300SXXY2N3



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA3-300S05Y2N3	90-528/ 100-745	5	600	70
FA3-300S12Y2N3		12	250	72
FA3-300S15Y2N3		15	200	73
FA3-300S24Y2N3		24	125	75
Package Dimensions: 50.80*25.40*15.60mm				

FA3-220SXXA2N3



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA3-220S3V3A2N3	85-265/ 120-380	3.3	600	66
FA3-220S3V8A2N3		3.8	600	68
FA3-220S05A2N3		5	600	71
FA3-220S09A2N3		9	333	73
FA3-220S12A2N3		12	250	75
FA3-220S13A2N3		13	250	75
FA3-220S15A2N3		15	200	75
FA3-220S24A2N3		24	125	77
Package Dimensions: 37.50*18.70*13.60mm				

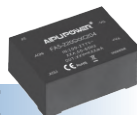
FA3-220SXXG2D4



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA3-220S3V3G2D4	85-305/ 100-430	3.3	900	68
FA3-220S05G2D4		5	600	70
FA3-220S12G2D4		12	250	75
FA3-220S12V5G2D4		12.5	240	75
FA3-220S15G2D4		15	200	75
FA3-220S24G2D4		24	125	76
Package Dimensions: 25.40*25.40*17.60mm				

FA5-220SXXC2D4



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA5-220S3V3C2D4	85-305/ 100-430	3.3	1000	67
FA5-220S05C2D4		5	1000	72
FA5-220S09C2D4		9	556	74
FA5-220S12C2D4		12	416	80
FA5-220S15C2D4		15	333	81
FA5-220S24C2D4		24	208	81
Package Dimensions: 48.50*36.00*20.50mm				

DA3/5-220SXXG2N4



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VAC/VDC)	(VDC)	(mA)	
DA3-220S05G2N4	85-305/ 120-430	5	600	71
DA3-220S12G2N4		12	250	74
DA3-220S15G2N4		15	200	75
DA3-220S24G2N4		24	125	81
DA5-220S05G2N4		5	1000	73
DA5-220S12G2N4		12	416	79
DA5-220S15G2N4		15	333	79
DA5-220S24G2N4		24	208	82
Package Dimensions: 37.00*24.50*18.00mm				

AC-DC Encapsulated

AC-DC Power Supply

FA5-220E05XXC2D3

◆ Product List

Part No.	Input Volt.	Output Volt./Current				Efficiency (%TYP)
	Range (VAC/VDC)	Voltage 1 (VDC)	Current 1 (mA)	Voltage 2 (VDC)	Current 2 (mA)	
FA5-220E0512C2D3	85-265/ 120-380	5	750	12	100	77
FA5-220E0524C2D3		5	600	24	100	78

Package Dimensions: 48.50*36.00*20.50mm



FA6-220SXXD2

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA6-220S3V3D2	85-265/ 120-380	3.3	1818	71
FA6-220S05D2		5	1200	75
FA6-220S09D2		9	667	78
FA6-220S12D2		12	500	80
FA6-220S15D2		15	400	82
FA6-220S16V5D2		16.5	360	82
FA6-220S24D2		24	250	84

Package Dimensions: 39.00*25.00*22.00mm



FA10-220SXXGA2N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA10-220S3V3GA2N4	85-305/ 120-430	3.3	2600	73
FA10-220S05GA2N4		5	2000	76
FA10-220S12GA2N4		12	833	82
FA10-220S12V5GA2N4		12.5	800	82
FA10-220S15GA2N4		15	667	82
FA10-220S24GA2N4		24	416	84

Package Dimensions: 47.60*26.80*23.50mm



FA10-220SXXC2N3

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA10-220S3V3C2N3	85-265/ 120-380	3.3	2000	76
FA10-220S05C2N3		5	2000	78
FA10-220S09C2N3		9	1111	80
FA10-220S12C2N3		12	833	82
FA10-220S15C2N3		15	667	83
FA10-220S24C2N3		24	450	84

Package Dimensions: 48.50*36.00*20.50mm



FA5-220SXXG2D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA5-220S05G2D4	85-305/ 120-430	5	1000	72
FA5-220S12G2D4		12	416	75
FA5-220S12V5G2D4		12.5	400	76
FA5-220S15G2D4		15	333	76
FA5-220S24G2D4		24	208	78

Package Dimensions: 25.40*25.40*17.60mm



FA5-220SXXY2N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA5-220S3V3Y2N4	85-305/ 120-430	3.3	1250	73
FA5-220S05Y2N4		5	1000	76
FA5-220S12Y2N4		12	416	82
FA5-220S15Y2N4		15	333	83
FA5-220S24Y2N4		24	208	84

Package Dimensions: 50.80*25.40*15.16mm



FA10-220SXXY2N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA10-220S05Y2N4	85-305/ 120-430	5	2000	80
FA10-220S12Y2N4		12	833	87
FA10-220S15Y2N4		15	667	88
FA10-220S24Y2N4		24	416	88

Package Dimensions: 50.80*25.40*15.60mm



FA10-380SXXF2N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA10-380S05F2N4	85-528/ 120-745	5	2000	76
FA10-380S12F2N4		12	833	80
FA10-380S24F2N4		24	416	82

Package Dimensions: 62.00*45.00*22.50mm



DA10-220SXXP2D4

◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
DA10-220S05P2D4	90-310/ 127-438	5	1500	74
DA10-220S09P2D4		9	1111	81
DA10-220S12P2D4		12	833	82
DA10-220S15P2D4		15	667	82
DA10-220S24P2D4		24	417	83
Package Dimensions:53.80*28.80*19.00mm				

FA10-220SXXG2N4

◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VAC/VDC)	(VDC)	(mA)	
FA10-220S3V3G2N4	85-305/ 120-430	3.3	2600	73
FA10-220S05G2N4		5	2000	76
FA10-220S12G2N4		12	833	82
FA10-220S12V5G2N4		12.5	800	82
FA10-220S15G2N4		15	667	82
FA10-220S24G2N4		24	416	83
Package Dimensions: 40.00*25.40*21.00mm				

FA10-220XXE2D4

◆ Product List



Part No.	Input Volt.	Output Volt./Current				Efficiency
	Range	Voltage 1	Current 1	Voltage 2	Current 2	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	(VDC)	(mA)	
FA10-220S3V3E2D4	85-305/ 100-430	3.3	2000	/	/	73
FA10-220S05E2D4		5	1500	/	/	73
FA10-220S09E2D4		9	1111	/	/	79
FA10-220S12E2D4		12	833	/	/	82
FA10-220S15E2D4		15	667	/	/	82
FA10-220S24E2D4		24	416	/	/	82
FA10-220S28E2D4		28	360	/	/	82
FA10-220D05E2D4	85-305/ 100-430	5	1000	5	1000	76
FA10-220D09E2D4		9	556	9	556	79
FA10-220D12E2D4		12	416	12	416	80
FA10-220D15E2D4		15	333	15	333	80
FA10-220D24E2D4		24	208	24	208	82
Package Dimensions: 55.00*45.00*21.50mm						

FA10-220E05XXE2D4

◆ Product List



Part No.	Input Volt.	Output Volt./Current				Efficiency
	Range	Voltage 1	Current 1	Voltage 2	Current 2	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	(VDC)	(mA)	
FA10-220E0505E2D4	85-265/ 120-380	5	1800	5	200	75
FA10-220E0512E2D4		5	1500	12	200	78
FA10-220E0524E2D4		5	1000	24	200	83
Package Dimensions: 55.00*45.00*20.50mm						

FA15-F2D4

◆ Product List



Part No.	Input Volt.	Output Volt./Current				Efficiency (%TYP)
	Range (VAC/VDC)	Voltage 1 (VDC)	Current 1 (mA)	Voltage 2 (VDC)	Current 2 (mA)	
FA15-220S3V3F2D4	85-265/ 120-380	3.3	3000	/	/	70
FA15-220S05F2D4		5	3000	/	/	74
FA15-220S09F2D4		9	1667	/	/	82
FA15-220S12F2D4		12	1250	/	/	84
FA15-220S15F2D4		15	1000	/	/	85
FA15-220S24F2D4	85-265/ 120-380	24	625	/	/	86
FA15-220D05F2D4		5	1500	5	1500	76
FA15-220D12F2D4		12	625	12	625	83
FA15-220D15F2D4	85-265/ 120-380	15	500	15	500	83
FA15-220E0512F2D4		5	2000	12	400	77
FA15-220E0524F2D4	85-265/ 120-380	5	2000	24	200	78
Package Dimensions: 62.00*45.00*22.50mm						

FA10-220SXXY2D4

◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA10-220S05Y2D4	85-305/ 120-430	5	2000	78
FA10-220S12Y2D4		12	833	83
FA10-220S24Y2D4		24	417	86
Package Dimensions:50.80*25.40*15.16mm				

FA15-220SXXG2N4

◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VAC/VDC)	(VDC)	(mA)	
FA15-220S05G2N4	85-305/ 120-430	5	3000	85
FA15-220S12G2N4		12	1250	85
FA15-220S12V5G2N4		12.5	1200	85
FA15-220S24G2N4		24	625	86
Package Dimensions:47.60*26.80*23.50mm				

AC-DC Encapsulated

AC-DC Power Supply

FA15-220H05XXXXF2D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current						Efficiency
	Range	Voltage1	Current1	Voltage2	Current2	Voltage3	Current3	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	(VDC)	(mA)	(VDC)	(mA)	
FA15-220H050505F2D4	85-265/ 120-380	5	2000	5	500	-5	500	80
FA15-220H051212F2D4		5	2000	12	200	-12	200	81
FA15-220H051515F2D4		5	1800	15	200	-15	200	82
Package Dimensions: 62.00*45.00*22.50mm								

FA15-300SXXG2N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA15-300S05G2N4	176-418/ 248-591	5	3000	78
FA15-300S12G2N4		12	1250	84
FA15-300S24G2N4		24	625	85
Package Dimensions: 52.40*27.20*24.00mm				

FA20-220SXXF2D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current				Efficiency
	Range	Voltage 1	Current 1	Voltage 2	Current 2	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	(VDC)	(mA)	
FA20-220S3V6F2D4	85-265/ 120-380	3.6	5500	/	/	74
FA20-220S05F2D4		5	3500	/	/	77
FA20-220S09F2D4		9	2222	/	/	81
FA20-220S12F2D4		12	1666	/	/	83
FA20-220S15F2D4		15	1333	/	/	83
FA20-220S24F2D4		24	833	/	/	85
FA20-220S28F2D4		28	714	/	/	86
Package Dimensions: 62.00*45.00*22.50mm						

FA20-H2D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current				Efficiency
	Range	Voltage 1	Current 1	Voltage 2	Current 2	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	(VDC)	(mA)	
FA20-300S05H2D4	90-528/ 100-745	5	4000	/	/	78
FA20-300S12H2D4		12	1660	/	/	83
FA20-300S15H2D4		15	1330	/	/	83
FA20-300S24H2D4		24	833	/	/	84
FA20-220H051212H2D4	85-265/ 120-370	5	2000	±12	400	79
FA20-220H051515H2D4		5	2000	±15	300	79
Package Dimensions: 70.00*48.00*24.00mm						

FA15-220SXXY2N3

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VAC/VDC)	(VDC)	(mA)	
FA15-220S05Y2N3	85-305/ 120-430	5	3000	82
FA15-220S12Y2N3		12	1250	86
FA15-220S12V5Y2N3		12.5	1200	86
FA15-220S12V8Y2N3		12.8	1172	86
FA15-220S15Y2N3		15	1000	87
FA15-220S24Y2N3		24	625	86
Package Dimensions: 50.80*25.40*15.60mm				

DA20-220SXXG2N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VAC/VDC)	(VDC)	(mA)	
DA20-220S05G2N4	85-305/ 120-430	5	4000	84
DA20-220S12G2N4		12	1666	86
DA20-220S12V5G2N4		12.5	1600	86
DA20-220S15G2N4		15	1333	86
DA20-220S24G2N4		24	833	88
Package Dimensions: 54.00*29.30*23.70mm				

FA20-220SXXP2D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA20-220S05P2D4	85-265/ 120-380	5	4000	82
FA20-220S09P2D4		9	2222	83
FA20-220S12P2D4		12	1666	84
FA20-220S15P2D4		15	1333	85
FA20-220S24P2D4		24	833	88
Package Dimensions: 53.80*28.80*23.50mm				

DA24-220SXXG2N3Y

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
DA24-220S3V3G2N3Y	85-305/ 120-430	3.3	3000	75
DA24-220S05G2N3Y		5	3000	77
DA24-220S12G2N3Y		12	2000	83
DA24-220S24G2N3Y		24	1000	85
Package Dimensions: 50.80*39.00*22.80mm				

FA20-220E05XXH2N4

◆ Product List



Part No.	Input Volt.	Output Volt./Current				Efficiency (%TYP)
	Range (VAC/VDC)	Voltage 1 (VDC)	Current 1 (mA)	Voltage 2 (VDC)	Current 2 (mA)	
FA20-220E0512H2N4	85-265/ 120-370	5	2500	12	600	78
FA20-220E0524H2N4		5	2500	24	300	78

Package Dimensions: 70.00*48.00*24.00mm

FA30-380SXXH2N4

◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA30-380S05H2N4	176-528/ 248-745	5	6000	78
FA30-380S12H2N4		12	2500	82
FA30-380S15H2N4		15	2000	82
FA30-380S24H2N4		24	1250	85

Package Dimensions: 70.00*48.00*24.00mm

FA30-220SXXH2D4

◆ Product List



Part No.	Input Volt.	Output Volt./Current				Efficiency (%TYP)
	Range (VAC/VDC)	Voltage 1 (VDC)	Current 1 (mA)	Voltage 2 (VDC)	Current 2 (mA)	
FA30-220S05H2D4	85-305/ 120-430	5	5000	/	/	78
FA30-220S09H2D4		9	3333	/	/	80
FA30-220S12H2D4		12	2500	/	/	82
FA30-220S15H2D4		15	2000	/	/	83
FA30-220S18H2D4		18	1667	/	/	85
FA30-220S24H2D4		24	1250	/	/	85

Package Dimensions: 70.00*48.00*23.50mm

FA30/40-220SXXG2N5

◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA30-220S05G2N5	85-305/ 120-430	5	6000	86
FA30-220S12G2N5		12	2500	90
FA30-220S24G2N5		24	1250	88
FA40-220S12G2N5		12	3330	89
FA40-220S24G2N5		24	1670	89

Package Dimensions: 69.50*39.00*25.50mm

FA25-H2D4

◆ Product List



Part No.	Input Volt.	Output Volt./Current				Efficiency (%TYP)
	Range (VAC/VDC)	Voltage 1 (VDC)	Current 1 (mA)	Voltage 2 (VDC)	Current 2 (mA)	
FA25-220S05H2D4	85-305/ 120-430	5	4200	/	/	78
FA25-220S09H2D4		9	2780	/	/	85
FA25-220S12H2D4		12	2083	/	/	85
FA25-220S15H2D4		15	1667	/	/	85
FA25-220S18H2D4		18	1389	/	/	85
FA25-220S24H2D4		24	1042	/	/	85
FA25-220S28H2D4		28	893	/	/	86
FA25-220S29H2D4		29.3	853	/	/	86
FA25-220S48H2D4		48	520	/	/	86
FA25-220D12H2D4	85-265/ 120-380	+12	+1041	-12	1041	82
FA25-220D15H2D4		+15	+833	-15	833	83
FA25-220E0512H2D4	85-265/ 120-370	5	3000	12	833	80
FA25-220E0515H2D4		5	3000	15	660	80
FA25-220E0524H2D4		5	3000	24	416	80

Package Dimensions: 70.00*48.00*23.50mm

FA40-220SXXW2D4

◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA40-220S05W2N4	85-265/ 120-380	5	8000	79
FA40-220S12W2N4		12	3333	83
FA40-220S24W2N4		24	1667	85

Package Dimensions: 89.00*63.50*25.00mm

FA40-220SXXH3N4

◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA40-220S05H3N4	85-265/ 120-380	5	8000	82
FA40-220S12H3N4		12	3333	83
FA40-220S15H3N4		15	2667	83
FA40-220S17H3N4		17	2353	85
FA40-220S17V5H3N4		17.5	2290	85
FA40-220S17V6H3N4		17.6	2290	85
FA40-220S24H3N4		24	1667	86

Package Dimensions: 70.00*48.00*30.00mm

AC-DC Encapsulated

AC-DC Power Supply

FA60-220SXXG2N4



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VAC/VDC)	(VDC)	(mA)	
FA60-220S05G2N4	90-264/ 122-370	5	10000	82
FA60-220S12G2N4		12	5000	86
FA60-220S24G2N4		24	2500	86
FA60-220S36G2N4		36	1670	86
FA60-220S37G2N4		37	1622	86
Package Dimensions: 109.00*58.50*30.00mm				

FA60-220SXXH2N5



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA60-220S05H2N5	85-305/ 120-430	5	10000	87
FA60-220S12H2N5		12	5000	89
FA60-220S15H2N5		15	4000	89
FA60-220S24H2N5		24	2500	89
Package Dimensions: 70.00*48.00*27.00mm				

FA90-220SXXG2N5



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA90-220S12G2N5	80-305/ 110-430	12	6700	90
FA90-220S15G2N5		15	5670	90
FA90-220S24G2N5		24	3750	90
Package Dimensions: 87.00*52.00*29.50mm				

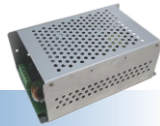
WA100-220SXXL1



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
WA100-220S12L1	100-265/ 140-380	12	8333	85
WA100-220S24L1		24	4166	86
Package Dimensions: 127.00*88.90*17.20mm				

DA150/180-1000SXXG1N4



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VAC)	(VDC)	(mA)	
DA150-1000S24G1N4	85-1300	24	6250	88
DA150-1000S28G1N4		28	5360	88
DA150-1000S32G1N4		32	4688	89
DA150-1000S35G1N4		35	4286	89
DA180-1000S35G1N4	85-1300	35	5143	89
Package Dimensions: 187.00*113.00*69.00mm				

FA120-600SXXG1N4



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC)	(VDC)	(mA)	
FA120-600S24G1N4	85-900	24	5000	88
FA120-600S28G1N4		28	4300	88
FA120-600S35G1N4		35	3429	89
FA120-600S48G1N4		48	2500	90
Package Dimensions: 187.00*113.00*59.00mm				

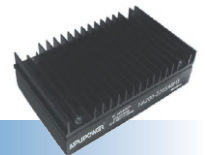
NA150-220SXXL1



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
NA150-220S12L1	165-265/ 200-380	12	12500	84
NA150-220S24L1		24	6250	85
Package Dimensions: 127.00*88.90*17.20mm				

NA200-220SXXM1

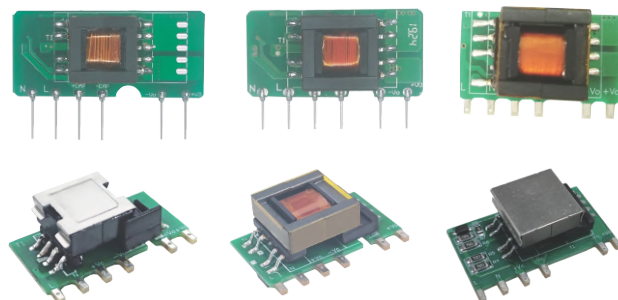


◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(% TYP)
	(VAC/VDC)	(VDC)	(mA)	
NA200-220S12M1	165-265/ 200-380	12	16600	88
NA200-220S15M1		15	13300	88
NA200-220S24M1		24	8333	87
Package Dimensions: 139.00*88.00*23.50mm				

◆ Typical features

- Wide input voltage range
 - Low stand-by power consumption
 - Flexible matching & layout for application
 - Isolation voltage 3000-4000VAC
 - Mini size open-frame, high power density, industry level design
 - Operating temperature from -40°C to +85°C
 - Output over-current, over-voltage & short circuit protections
 - EMC EN55032/GB9254 Class A
 - Compliant with IEC/EN62368/UL62368
 - PCB SIP mounting, both AC & DC available
 - Additional circuit diagram is recommended for high EMC requirement
- Application: Industry control, Electric power, Instrument, Smart house hold devices, DCS, EV Charger, etc



FA3-220SXXB9D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA3-220S3V3B9D4	85-265/ 120-380	3.3	600	69
FA3-220S05B9D4		5	600	72
FA3-220S09B9D4		9	333	73
FA3-220S12B9D4		12	250	73
FA3-220S15B9D4		15	200	76
FA3-220S24B9D4		24	125	77
Package Dimensions: 35.00*18.00*11.00mm				

DA3-220SXXG9D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
DA3-220S3V3G9D4	85-305/ 70-430	3.3	600	69
DA3-220S05G9D4		5	600	73
DA3-220S09G9D4		9	333	74
DA3-220S12G9D4		12	250	76
DA3-220S15G9D4		15	200	76
DA3-220S24G9D4		24	125	78
Package Dimensions: 26.40*15.40*11.00mm				

FA5-220SXXB9D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA5-220S3V3B9D4	90-265/ 127-380	3.3	1000	67
FA5-220S05B9D4		5	1000	71
FA5-220S5V25B9D4		5.25	952	72
FA5-220S09B9D4		9	556	77
FA5-220S12B9D4		12	416	79
FA5-220S15B9D4		15	333	79
FA5-220S24B9D4		24	208	82
Package Dimensions: 42.00*20.00*13.00mm				

DA5-220SXXG9D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
DA5-220S3V3G9D4	85-305/ 70-430	3.3	1000	68
DA5-220S05G9D4		5	1000	74
DA5-220S09G9D4		9	556	76
DA5-220S12G9D4		12	416	78
DA5-220S12V1G9D4		12.1	416	78
DA5-220S15G9D4		15	333	78
DA5-220S24G9D4		24	208	80
Package Dimensions: 26.40*17.50*12.00mm				

DA5-300SXXGA9N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VAC/VDC)	(VDC)	(mA)	
DA5-300S05GA9N4	85-418/ 100-591	5	1000	74
DA5-300S12GA9N4		12	416	78
DA5-300S24GA9N4		24	208	80
Package Dimensions: 27.20*17.60*12.00mm				

DA5-380SXXGA9N4

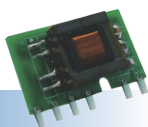
◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VAC/VDC)	(VDC)	(mA)	
DA5-380S3V3GA9N4	85-528/ 100-745	3.3	1000	68
DA5-380S05GA9N4		5	1000	71
DA5-380S12GA9N4		12	416	78
DA5-380S15GA9N4		15	333	78
DA5-380S24GA9N4		24	208	80
Package Dimensions: 33.50*20.00*13.50mm				

AC-DC Open-frame

AC-DC Power Supply

DA5-380SXXG9N4

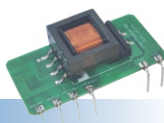


◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
DA5-380S12G9N4	85-418/ 100-591	12	420	79
DA5-380S15G9N4		15	333	79

Package Dimensions: 30.20*18.00*11.00mm

FA8-220SXXB9N3



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA8-220S05B9N3	85-305/ 120-430	5	1600	76
FA8-220S12B9N3		12	667	80
FA8-220S24B9N3		24	333	82

Package Dimensions: 44.50*22.00*14.00mm

DA10-220SXXG9D4



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
DA10-220S3V3G9D4	85-305/ 120-430	3.3	2000	73
DA10-220S05G9D4		5	2000	77
DA10-220S09G9D4		9	1111	78
DA10-220S12G9D4		12	833	81
DA10-220S15G9D4		15	667	82
DA10-220S24G9D4		24	416	83

Package Dimensions: 32.00*20.00*14.50mm

DA10-220SXXG9N4

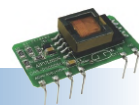


◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
DA10-220S3V3G9N4	85-305/ 120-430	3.3	2000	72
DA10-220S05G9N4		5	2000	78
DA10-220S09G9N4		9	1111	80
DA10-220S12G9N4		12	833	82
DA10-220S12V5G9N4		12.5	800	82
DA10-220S15G9N4		15	667	82
DA10-220S24G9N4		24	416	84

Package Dimensions: 28.84*20.00*14.00mm

DA5-300SXXG9N4



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
DA5-300S05G9N4	85-528/ 120-746	5	1000	76
DA5-300S09G9N4		9	555	77
DA5-300S12G9N4		12	420	78
DA5-300S15G9N4		15	333	78
DA5-300S24G9N4		24	210	80

Package Dimensions: 44.50*25.00*13.00mm

DA10-380SXXG9N4

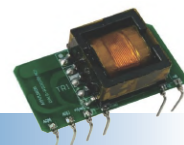


◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
DA10-380S05G9N4	85-528/ 100-475	5	2000	77
DA10-380S12G9N4		12	833	82
DA10-380S24G9N4		24	416	83

Package Dimensions: 38.00*23.00*15.00mm

DA10-300SXXG9N4

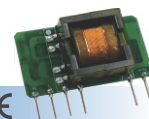


◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
DA10-300S05G9N4	90-528/ 127-746	5	2000	77
DA10-300S12G9N4		12	833	81
DA10-300S24G9N4		24	417	84

Package Dimensions: 45.00*22.00*16.00mm

FA15-220SXXB9N3

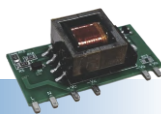


◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
FA15-220S3V3B9N3	85-305/ 120-430	3.3	3000	76
FA15-220S05B9N3		5	3000	77
FA15-220S12B9N3		12	1250	83
FA15-220S12V7B9N3		12.7	1181	82
FA15-220S15B9N3		15	1000	83
FA15-220S24B9N3		24	625	85

Package Dimensions: 45.00*23.00*15.00mm

FA15-380SXXG9N4



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	
FA15-380S05G9N4	176-528/ 248-745	5	2500	81
FA15-380S12G9N4		12	1250	82
FA15-380S15G9N4		15	1000	83
FA15-380S24G9N4		24	625	84
Package Dimensions: 40.04*20.00*15.00mm				

DA45-220T05XXXXG9N3



◆ Product List

Part No.	Input Volt.	Output Volt./Current						Efficiency
	Range	Voltage1	Current1	Voltage2	Current2	Voltage3	Current3	(%TYP)
	(VAC/VDC)	(VDC)	(mA)	(VDC)	(mA)	(VDC)	(mA)	
DA45-220T05 1205G9N3	85-265/ 120-380	5	3000	12	2000	-5	300	80
DA45-220T05 1212G9N3		5	3000	12	2000	-12	300	80
DA45-220T05 1515G9N3		5	3000	15	1600	-15	300	82
Package Dimensions 102 00*51 00*28 00mm								

DA48-220S24B



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VAC/VDC)	Voltage (VDC)	Current (mA)	
DA48-220S24B	110-270/150-385	24	2000	87
Package Dimensions: 81.90*43.00*25.00mm				

DA150-220SXXG9N3



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VAC)	(VDC)	(mA)	
DA150-220S12G9N3	80-264	12	11700	93
DA150-220S24G9N3		24	5900	94
DA150-220S48G9N3		48	3000	94
Package Dimensions: 105.00*60.00*31.00mm				

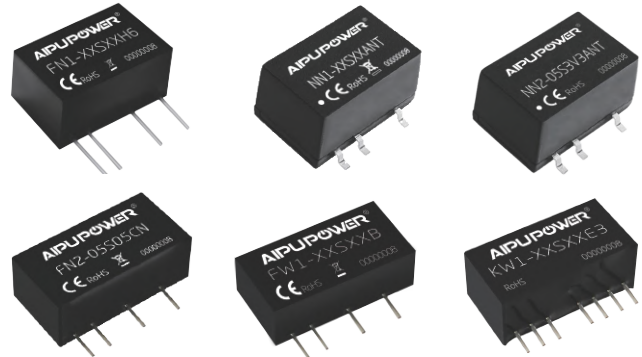
DC-DC (1W-3W)

DC-DC Converter



◆ Typical features

- Standard input voltage range
 - Low stand-by power consumption
 - SIP/SMD Packages
 - High isolation voltage
 - Mini size, high power density, industry level design
 - Operating temperature from -40°C to +85/105°C
 - Output over-current & short circuit protections
 - EMC EN55032/GB9254 Class B with external circuit
 - Standard pin-out alignment
 - PCB SIP mounting
 - Isolated regulated/unregulated, single/dual outputs
- Additional circuit diagram is recommended for high EMC requirement
Application: Pure digital circuit, Low frequency analog circuit, Relay drive circuit, IGBT/SIC drive circuit & data exchange circuit, etc.



NN1-XXSXXA3NT



◆ Product List

Part No.	Input Volt.		Output Volt./Current			Efficiency (%TYP)
	Nom.	Range	Voltage (VDC)	Current (mA)		
		(VDC)		MIN	MAX	
NN1-3V3S3V3A3NT	3.3	2.97 - 3.63	3.3	30	300	76
NN1-3V3S05A3NT			5	20	200	82
NN1-3V3S09A3NT			9	11	111	85
NN1-3V3S12A3NT			12	8	83	87
NN1-3V3S15A3NT			15	7	67	87
NN1-3V3S24A3NT			24	4	42	85
NN1-05S3V3A3NT	5	4.5 - 5.5	3.3	30	303	80
NN1-05S05A3NT			5	20	200	85
NN1-05S06A3NT			6	17	167	85
NN1-05S09A3NT			9	11	111	86
NN1-05S12A3NT			12	8	83	87
NN1-05S15A3NT			15	7	67	87
NN1-05S24A3NT			24	4	42	86
NN1-12S3V3A3NT	12	10.8 - 13.2	3.3	30	303	82
NN1-12S05A3NT			5	20	200	86
NN1-12S12A3NT			12	8	83	86
NN1-12S15A3NT			15	6	67	86
NN1-12S24A3NT			24	4	42	86
NN1-15S05A3NT	15	13.5 - 16.5	5	20	200	86
NN1-15S15A3NT			15	6	67	86
NN1-24S3V3A3NT	24	21.6 - 26.4	3.3	30	303	82
NN1-24S05A3NT			5	20	200	86
NN1-24S12A3NT			12	8	83	86
NN1-24S15A3NT			15	6	67	86
NN1-24S24A3NT			24	4	42	84
Package Dimensions: 12.70*11.20*7.25mm						

NN1-XXDXXA3NT



◆ Product List

Part No.	Input Volt.		Output Volt./Current			Efficiency
	Nom.	Range	Voltage	Current (mA)		
		(VDC)	(VDC)	MIN	MAX	
NN1-05D05A3NT	5	4.5-5.5	±5	±10	±100	84
NN1-05D09A3NT			±9	±6	±55	84
NN1-05D12A3NT			±12	±4	±42	84
NN1-05D15A3NT			±15	±3	±33	83
NN1-12D05A3NT	12	10.8-13.2	±5	±10	±100	84
NN1-12D12A3NT			±12	±6	±42	85
NN1-12D15A3NT			±15	±3	±33	86
NN1-24D05A3NT	24	21.6-26.4	±5	±10	±100	84
NN1-24D12A3NT			±12	±4	±42	85
NN1-24D15A3NT			±15	±3	±33	85
Package Dimensions: 15.24*11.40*7.25mm						

NN3-XXSXXCN



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency
	Nom.	Range	Voltage	Current (mA)	(%TYP)
		(VDC)	(VDC)	MAX	
NN3-05S05CN	5	4.5-5.5	5	600	84
NN3-05S09CN			9	333	83
NN3-05S12CN			12	250	85
NN3-05S24CN			24	125	84
NN3-12S05CN	12	10.8-13.2	5	600	82
NN3-12S12CN			12	250	86
Package Dimensions: 19.50*7.00*10.00mm					

NN1-XXSXXM/MN/M3N



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA)	
NN1-05S05M	5	4.5-5.5	5	200	77
NN1-05S09M			9	110	78
NN1-05S12M			12	83	78
NN1-05S15M			15	67	78
NN1-12S05M	12	10.8-13.2	5	200	79
NN1-12S09M			9	110	80
NN1-12S12M			12	83	80
NN1-12S15M			15	67	80
NN1-24S05M	24	21.6-26.4	5	200	77
NN1-24S09M			9	110	78
NN1-24S12M			12	83	77
NN1-24S15M			15	67	78
NN1-05S3V3MN	5	4.5-5.5	3.3	300	78
NN1-05S05MN			5	200	84
NN1-05S09MN			9	110	85
NN1-05S12MN			12	83	85
NN1-05S15MN			15	67	85
NN1-05S24MN			24	42	86
NN1-12S3V3MN	12	10.8-13.2	3.3	300	82
NN1-12S05MN			5	200	85
NN1-12S09MN			9	110	85
NN1-12S12MN			12	83	86
NN1-12S15MN			15	67	85
NN1-12S24MN			24	42	84
NN1-15S05MN	15	13.5-16.5	5	200	84
NN1-15S12MN			9	110	85
NN1-15S15MN			15	67	86
NN1-24S3V3MN	24	21.6-26.4	3.3	300	82
NN1-24S05MN			5	200	86
NN1-24S09MN			9	110	86
NN1-24S12MN			12	83	86
NN1-24S15MN			15	67	81
NN1-24S24MN			24	42	84
NN1-05S3V3M3N	5	4.5-5.5	3.3	300	78
NN1-05S05M3N			5	200	84
NN1-05S09M3N			9	110	86
NN1-05S12M3N			12	83	86
NN1-05S15M3N			15	67	86

Package Dimensions: 12.70*10.00*8.20mm

NW1-XXSXXANT



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NW1-05S3V3ANT	5	4.75-5.25	3.3	250	70
NW1-05S05ANT			5	200	73
NW1-05S12ANT			12	84	74
NW1-12S3V3ANT	12	11.4-12.6	3.3	250	70
NW1-12S05ANT			5	200	73
NW1-12S12ANT			12	84	74
NW1-24S3V3ANT	24	22.8-25.2	3.3	250	70
NW1-24S05ANT			5	200	73
NW1-24S12ANT			12	84	74

Package Dimensions: 15.24X11.40X7.25 mm

NN1-XXXXXFN

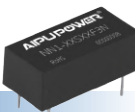


◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NN1-05S3V3FN	5	4.5-5.5	3.3	303	82
NN1-05S05FN			5	200	85
NN1-05S12FN			12	83	85
NN1-05S15FN			15	67	85
NN1-12S05FN	12	10.8-13.2	5	200	85
NN1-12S12FN			12	83	86
NN1-12S15FN			15	67	86
NN1-24S05FN	24	21.6-26.4	5	200	84
NN1-24S12FN			12	83	86
NN1-24S15FN			15	67	85
NN1-05D05FN	5	4.5-5.5	±5	±100	82
NN1-05D12FN			±12	±42	83
NN1-05D15FN			±15	±34	83
NN1-12D05FN	12	10.8-13.2	±5	±100	82
NN1-12D12FN			±12	±42	83
NN1-12D15FN			±15	±34	83
NN1-24D05FN	24	21.6-26.4	±5	±100	82
NN1-24D12FN			±12	±42	83
NN1-24D15FN			±15	±34	83

Package Dimensions: 20.00*10.00*6.80mm

NN1-XXXXXF3N



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NN1-05S3V3F3N	5	4.5-5.5	3.3	303	82
NN1-05S05F3N			5	200	85
NN1-05S12F3N			12	83	85
NN1-05S15F3N			15	67	85
NN1-12S05F3N	12	10.8-13.2	5	200	85
NN1-12S12F3N			12	83	86
NN1-12S15F3N			15	67	86
NN1-24S05F3N	24	21.6-26.4	5	200	84
NN1-24S12F3N			12	83	86
NN1-24S15F3N			15	67	85
NN1-05D05F3N	5	4.5-5.5	±5	±100	82
NN1-05D12F3N			±12	±42	83
NN1-05D15F3N			±15	±34	83
NN1-12D05F3N	12	10.8-13.2	±5	±100	82
NN1-12D12F3N			±12	±42	83
NN1-12D15F3N			±15	±34	83
NN1-24D05F3N	24	21.6-26.4	±5	±100	82
NN1-24D12F3N			±12	±42	83
NN1-24D15F3N			±15	±34	83

Package Dimensions: 20.00*10.00*6.80mm

DC-DC (1W-3W)

DC-DC Converter

NN2-XXXXXFN



◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NN2-05S3V3FN	5	4.5-5.5	3.3	400	78
NN2-05S05FN			5	400	80
NN2-05S12FN			12	167	80
NN2-05S15FN			15	133	83
NN2-05S24FN			24	83	82
NN2-12S05FN	12	10.8-13.2	5	400	84
NN2-12S12FN			12	167	86
NN2-12S15FN			15	133	83
NN2-24S05FN	24	21.6-26.4	5	400	82
NN2-24S12FN			12	400	86
NN2-24S15FN			15	167	83
NN2-05D05FN	5	4.5-5.5	±5	±200	80
NN2-05D12FN			±12	±83	80
NN2-05D15FN			±15	±67	80
NN2-12D05FN	12	10.8-13.2	±5	±200	84
NN2-12D12FN			±12	±83	86
NN2-12D15FN			±15	±67	83
NN2-24D05FN	24	21.6-26.4	±5	±200	82
NN2-24D12FN			±12	±83	86
NN2-24D15FN			±15	±67	83

Package Dimensions: 20.00*10.00*6.80mm

NN2-XXSXXANT



◆ Product List



Part No.	Input Volt.		Output Volt./Current			Efficiency
	Nom.	Range	Voltage	Current (mA)		(%TYP)
		(VDC)	(VDC)	MIN	MAX	
NN2-05S3V3ANT	5	4.5-5.5	3.3	40	400	80
NN2-05S05ANT			5	40	400	83
NN2-05S07ANT			7	28	285	83
NN2-05S09ANT			9	22	222	85
NN2-05S12ANT			12	17	167	86
NN2-05S15ANT			15	13	133	82
NN2-12S05ANT	12	10.8-13.2	5	40	400	84
NN2-12S12ANT			12	17	167	86
NN2-12S24ANT			24	8	83	84
NN2-15S05ANT	15	13.5-16.5	5	40	400	82
NN2-15S12ANT			12	17	167	84
NN2-15S15ANT			15	13	133	84
NN2-24S05ANT	24	21.6-26.4	5	40	400	84
NN2-24S5V5ANT			5.5	36	363	84
NN2-24S12ANT			12	17	167	86
NN2-24S24ANT			24	8	83	84

Package Dimensions: 12.70*11.00*7.13mm

NN2-XXSXXA3NT



◆ Product List



Part No.	Input Volt.		Output Volt./Current			Efficiency (%TYP)
	Nom.	Range	Voltage	Current (mA)		
		(VDC)	(VDC)	MIN	MAX	
NN2-3V3S05A3NT	3.3	2.97-3.63	5	40	400	82
NN2-05S3V3A3NT	5	4.5-5.5	3.3	40	400	80
NN2-05S05A3NT			5	40	400	83
NN2-05S09A3NT			9	22	222	85
NN2-05S12A3NT			12	17	167	86
NN2-05S15A3NT			15	13	133	82
NN2-12S05A3NT	12	10.8-13.2	5	40	400	84
NN2-12S12A3NT			12	17	167	86
NN2-12S15A3NT			25	13	133	84
NN2-12S24A3NT			24	8	83	84
NN2-15S05A3NT	15	13.5-16.5	5	40	400	82
NN2-15S12A3NT			12	17	167	84
NN2-15S15A3NT			15	13	133	84
NN2-24S05A3NT	24	21.6-26.4	5	40	400	84
NN2-24S09A3NT			9	22	222	85
NN2-24S12A3NT			12	17	167	86
NN2-24S24A3NT			24	8	83	84

Package Dimensions: 12.70*11.20*7.25mm

NN2-XXXXXF3N



◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
FN2-05S05F3N	5	4.5-5.5	5	400	80
FN2-05S12F3N			12	167	80
FN2-05S15F3N			15	133	80
FN2-12S05F3N	12	10.8-13.2	5	400	84
FN2-12S12F3N			12	167	86
FN2-12S15F3N			15	133	83
FN2-24S05F3N	24	21.6-26.4	5	400	82
FN2-24S12F3N			12	167	86
FN2-24S15F3N			15	133	83
FN2-05D05F3N	5	4.5-5.5	±5	±200	80
FN2-05D12F3N			±12	±83	80
FN2-05D15F3N			±15	±67	80
FN2-12D05F3N	12	10.8-13.2	±5	±200	84
FN2-12D12F3N			±12	±83	86
FN2-12D15F3N			±15	±67	83
FN2-24D05F3N	24	21.6-26.4	±5	±200	82
FN2-24D12F3N			±12	±83	86
FN2-24D15F3N			±15	±67	83

Package Dimensions: 20.00*10.00*6.80mm

NN2-XXXXXC3N



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NN2-05S3V3C3N	5	4.5-5.5	3.3	400/40	80
NN2-05S05C3N			5	400/40	83
NN2-05S09C3N			9	222/22	84
NN2-05S12C3N			12	167/17	85
NN2-05S15C3N			15	133/13	85
NN2-05S24C3N			24	83/8	85
NN2-05D05C3N	5	4.5-5.5	±5	±200/±20	80
NN2-05D09C3N			±9	±111/±11	83
NN2-05D12C3N			±12	±83/±8	84
NN2-05D15C3N			±15	±67/±7	85
NN2-05D24C3N			±24	±42/±4	85
NN2-12S3V3C3N	12	10.8-13.2	3.3	400/40	80
NN2-12S05C3N			5	400/40	83
NN2-12S09C3N			9	222/22	83
NN2-12S12C3N			12	167/17	86
NN2-12S15C3N			15	133/13	86
NN2-12S24C3N			24	83/8	85
NN2-12D05C3N	12	10.8-13.2	±5	±200/±20	83
NN2-12D09C3N			±9	±111/±11	83
NN2-12D12C3N			±12	±83/±8	86
NN2-12D12V5C3N			±12.5	±80/±8	86
NN2-12D15C3N			±15	±67/±7	86
NN2-12D24C3N			±24	±42/±4	83
NN2-15S05C3N	15	13.5-16.5	5	400/40	83
NN2-15S12C3N			12	167/17	83
NN2-15S15C3N			15	133/13	86
NN2-15S24C3N			24	83/8	86
NN2-15D05C3N	15	13.5-16.5	±5	±200/±20	83
NN2-15D12C3N			±12	±83/±8	83
NN2-15D15C3N			±15	±67/±7	86
NN2-15D24C3N			±24	±42/±4	86
NN2-24S3V3C3N	24	21.6-26.4	3.3	400/40	80
NN2-24S05C3N			5	400/40	83
NN2-24S09C3N			9	222/22	84
NN2-24S12C3N			12	167/17	86
NN2-24S15C3N	24	21.6-26.4	15	133/13	86
NN2-24S24C3N			24	83/8	85
NN2-24D05C3N			±5	±200/±20	83
NN2-24D09C3N			±9	±111/±11	84
NN2-24D12C3N	24	21.6-26.4	±12	±83/±8	86
NN2-24D15C3N			±15	±67/±7	86
NN2-24D24C3N			±24	±42/±4	85

Package Dimensions: 19.50*7.00*10.10mm

NN1-XXSXXANT



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MIN MAX	
NN1-3V3S3V3ANT	3.3	2.97-3.63	3.3	30 303	76
NN1-3V3S05ANT			5	20 200	82
NN1-3V3S09ANT			9	11 111	85
NN1-3V3S12ANT			12	8 83	87
NN1-3V3S15ANT			15	7 67	87
NN1-3V3S24ANT			24	4 42	85
NN1-05S3V3ANT	5	4.5-5.5	3.3	30 303	80
NN1-05S05ANT			5	20 200	85
NN1-05S09ANT			9	11 111	86
NN1-05S12ANT			12	8 83	87
NN1-05S15ANT			15	7 67	87
NN1-05S24ANT			24	4 42	88
NN1-12S3V3ANT	12	10.8-13.2	3.3	30 303	82
NN1-12S05ANT			5	20 200	86
NN1-12S09ANT			9	11 111	86
NN1-12S12ANT			12	8 83	86
NN1-12S15ANT			15	6 67	86
NN1-12S24ANT			24	4 42	86
NN1-15S05ANT	15	13.5-16.5	5	20 200	85
NN1-15S12ANT			12	9 83	86
NN1-15S15ANT			15	6 67	86
NN1-15S24ANT			24	5 42	85
NN1-24S3V3ANT	24	21.6-26.4	3.3	30 303	82
NN1-24S05ANT			5	20 200	86
NN1-24S09ANT			9	11 111	86
NN1-24S12ANT			12	8 83	86
NN1-24S15ANT			15	6 67	86
NN1-24S24ANT			24	4 42	86

Package Dimensions: 12.70*11.00*7.13mm

NN3-XXSXXC3N



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NN3-05S05C3N	5	4.5-5.5	5	600	83
NN3-05S12C3N			12	250	83
NN3-05S15C3N			15	200	83
NN3-12S05C3N	12	10.8-13.2	5	600	83
NN3-12S12C3N			12	250	84
NN3-12S15C3N			15	200	83
NN3-12S24C3N			24	125	83
NN3-24S05C3N	24	21.6-26.4	5	600	83
NN3-24S12C3N			12	250	84
NN3-24S15C3N			15	200	85
NN3-24S24C3N			24	125	84

Package Dimensions: 19.50*7.00*10.00mm

FN1-XXXXXBN

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
FN1-3V3S3V3BN	3.3	2.97-3.63	3.3	303	78
FN1-3V3S05BN			5	200	83
FN1-3V3S12BN			12	84	85
FN1-3V3S15BN			15	67	83
FN1-3V3S24BN			24	42	83
FN1-05S3V3BN	5	4.5-5.5	3.3	303	80
FN1-05S05BN			5	200	85
FN1-05S09BN			9	111	85
FN1-05S12BN			12	84	85
FN1-05S15BN			15	67	85
FN1-05S24BN			24	42	84
FN1-05D3V3BN	5	4.5-5.5	±3.3	±152	78
FN1-05D05BN			±5	±100	83
FN1-05D09BN			±9	±56	85
FN1-05D12BN			±12	±42	85
FN1-05D15BN			±15	±34	85
FN1-05D24BN			±24	±21	83
FN1-09S09BN	9	8.1-9.9	9	111	84
FN1-09S12BN			12	84	85
FN1-09S15BN			15	67	85
FN1-12S3V3BN	12	10.8-13.2	3.3	303	82
FN1-12S05BN			5	200	86
FN1-12S09BN			9	111	86
FN1-12S12BN			12	84	86
FN1-12S15BN			15	67	86
FN1-12S24BN			24	42	85
FN1-12D3V3BN	12	10.8-13.2	±3.3	±152	83
FN1-12D05BN			±5	±100	82
FN1-12D09BN			±9	±56	86
FN1-12D12BN			±12	±42	86
FN1-12D15BN			±15	±34	86
FN1-12D24BN			±24	±21	86
FN1-15S05BN	15	13.5-16.5	5	200	83
FN1-15S12BN			12	84	82
FN1-15S15BN			15	67	86
FN1-15D05BN	15	13.5-16.5	±5	±100	86
FN1-15D09BN			±9	±56	86
FN1-15D12BN			±12	±42	86
FN1-15D15BN			±15	±34	83
FN1-24S3V3BN	24	21.6-26.4	3.3	303	83
FN1-24S05BN			5	200	82
FN1-24S09BN			9	111	86
FN1-24S12BN			12	84	86
FN1-24S15BN			15	67	86
FN1-24S24BN			24	42	86
FN1-24D05BN	24	21.6-26.4	±5	±100	83
FN1-24D09BN			±9	±56	82
FN1-24D12BN			±12	±42	86
FN1-24D15BN			±15	±34	86
FN1-24D24BN			±24	±21	86

Package Dimensions: 19.50*6.00*10.10mm

FN1-XXXXXB3N

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
FN1-3V3S3V3B3N	3.3	2.97-3.63	3.3	303	78
FN1-3V3S05B3N			5	200	83
FN1-3V3S12B3N			12	84	85
FN1-3V3S15B3N			15	67	83
FN1-3V3S24B3N			24	42	83
FN1-05S3V3B3N	5	4.5-5.5	3.3	303	80
FN1-05S05B3N			5	200	85
FN1-05S09B3N			9	111	85
FN1-05S12B3N			12	84	85
FN1-05S15B3N			15	67	85
FN1-05S24B3N			24	42	84
FN1-05D3V3B3N	12	4.5-5.5	±3.3	±152	78
FN1-05D05B3N			±5	±100	83
FN1-05D09B3N			±9	±56	85
FN1-05D12B3N			±12	±42	85
FN1-05D15B3N			±15	±34	85
FN1-05D24B3N			±24	±21	83
FN1-09S09B3N	9	8.1-9.9	9	111	84
FN1-09S12B3N			12	84	85
FN1-09S15B3N			15	67	85
FN1-12S3V3B3N	12	10.8-13.2	3.3	303	82
FN1-12S05B3N			5	200	86
FN1-12S09B3N			9	111	86
FN1-12S12B3N			12	84	86
FN1-12S15B3N			15	67	86
FN1-12S24B3N			24	42	85
FN1-12D3V3B3N	12	10.8-13.2	±3.3	±152	83
FN1-12D05B3N			±5	±100	82
FN1-12D09B3N			±9	±56	86
FN1-12D12B3N			±12	±42	86
FN1-12D15B3N			±15	±34	86
FN1-12D24B3N			±24	±21	86
FN1-15S05B3N	15	13.5-16.5	5	200	83
FN1-15S12B3N			12	84	82
FN1-15S15B3N			15	67	86
FN1-15D05B3N	15	13.5-16.5	±5	±100	86
FN1-15D09B3N			±9	±56	86
FN1-15D12B3N			±12	±42	86
FN1-15D15B3N			±15	±34	83
FN1-24S3V3B3N	24	21.6-26.4	3.3	303	83
FN1-24S05B3N			5	200	82
FN1-24S09B3N			9	111	86
FN1-24S12B3N			12	84	86
FN1-24S15B3N			15	67	86
FN1-24S24B3N			24	42	86
FN1-24D05B3N	24	21.6-26.4	±5	±100	83
FN1-24D09B3N			±9	±56	82
FN1-24D12B3N			±12	±42	86
FN1-24D15B3N			±15	±34	86
FN1-24D24B3N			±24	±21	86

Package Dimensions: 19.50*6.00*10.10mm

FN2-XXXXXCN

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
FN2-05S3V3CN	5	4.5-5.5	3.3	400	80
FN2-05S05CN			5	400	83
FN2-05S09CN			9	222	84
FN2-05S12CN			12	167	85
FN2-05S15CN			15	133	85
FN2-05S24CN			24	83	85
FN2-12S05CN	12	10.8-13.2	5	400	83
FN2-12S09CN			9	222	83
FN2-12S12CN			12	167	86
FN2-12S15CN			15	133	86
FN2-12S24CN	24	21.6-26.4	24	83	85
FN2-24S3V3CN			3.3	400	80
FN2-24S05CN			5	400	83
FN2-24S09CN			9	222	84
FN2-24S12CN			12	167	86
FN2-24S15CN			15	133	86
FN2-24S24CN			24	83	85
FN2-05D05CN	5	4.5-5.5	±5	±200	80
FN2-05D09CN			±9	±111	83
FN2-05D12CN			±12	±83	84
FN2-05D15CN			±15	±67	85
FN2-12D05CN	12	10.8-13.2	±5	±200	83
FN2-12D09CN			±9	±111	83
FN2-12D12CN			±12	±83	86
FN2-12D15CN			±15	±67	86
FN2-24D05CN	24	21.6-26.4	±5	±200	83
FN2-24D09CN			±9	±111	84
FN2-24D12CN			±12	±83	86
FN2-24D15CN			±15	±67	86

Package Dimensions: 19.50*7.00*10.10mm

FN2-XXXXXC3N

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
FN2-05S3V3C3N	5	4.5-5.5	3.3	400	80
FN2-05S05C3N			5	400	83
FN2-05S09C3N			9	222	84
FN2-05S12C3N			12	167	85
FN2-05S15C3N			15	133	85
FN2-05S24C3N			24	83	85
FN2-12S05C3N	12	10.8-13.2	5	400	83
FN2-12S09C3N			9	222	83
FN2-12S12C3N			12	167	86
FN2-12S15C3N			15	133	86
FN2-12S24C3N	24	21.6-26.4	24	83	85
FN2-24S3V3C3N			3.3	400	80
FN2-24S05C3N			5	400	83
FN2-24S09C3N			9	222	84
FN2-24S12C3N			12	167	86
FN2-24S15C3N			15	133	86
FN2-24S24C3N			24	83	85
FN2-05D05C3N	5	4.5-5.5	±5	±200	80
FN2-05D09C3N			±9	±111	83
FN2-05D12C3N			±12	±83	84
FN2-05D15C3N			±15	±67	85
FN2-12D05C3N	12	10.8-13.2	±5	±200	83
FN2-12D09C3N			±9	±111	83
FN2-12D12C3N			±12	±83	86
FN2-12D15C3N			±15	±67	86
FN2-24D05C3N	24	21.6-26.4	±5	±200	83
FN2-24D09C3N			±9	±111	84
FN2-24D12C3N			±12	±83	86
FN2-24D15C3N			±15	±67	86

Package Dimensions: 19.50*7.00*10.10mm

NWV75-XXSXXANT

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NWV75-3V3S3V3ANT	3.3	3.135-3.465	3.3	200	70
NWV75-05S3V3ANT	5	4.75-5.25	3.3	200	70
NWV75-05S05ANT			5	150	73
NWV75-05S12ANT			12	62	75
NWV75-12S3V3ANT	12	11.4-12.6	3.3	200	70
NWV75-12S05ANT			5	150	73
NWV75-12S12ANT			12	62	75
NWV75-24S3V3ANT	24	22.8-25.2	3.3	200	70
NWV75-24S05ANT			5	150	73
NWV75-24S12ANT			12	62	75

Package Dimensions: 12.70*11.00*7.13 mm

NW1-XXSXXD7R3

◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NW1-05S05D7R3	5	4.75-5.25	5	200	73

Package Dimensions: 27.50*9.50*12.00mm

NNV25-XXSXXANT

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MIN MAX	
NNV25-05S05ANT	5	4.5-5.5	5	5 50	82

Package Dimensions: 12.70*11.20*7.25mm

FNV5-XXSXXA



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
FNV5-3V3S3V3A	3.3	2.97-3.63	3.3	150	70
FNV5-3V3S05A			5	100	70
FNV5-3V3S12A			12	42	70
FNV5-05S3V3A	5	4.5-5.5	3.3	150	74
FNV5-05S05A			5	100	75
FNV5-05S09A			9	55	75
FNV5-05S12A			12	42	76
FNV5-05S15A			15	33	77
FNV5-05S24A			24	21	72
FNV5-12S3V3A	12	10.8-13.2	3.3	150	74
FNV5-12S05A			5	100	74
FNV5-12S09A			9	55	74
FNV5-12S12A			12	42	75
FNV5-12S15A			15	33	75
FNV5-12S24A			24	21	71
FNV5-24S3V3A	24	21.6-26.4	3.3	150	70
FNV5-24S05A			5	100	74
FNV5-24S09A			9	55	75
FNV5-24S12A			12	42	75
FNV5-24S15A			15	33	76
FNV5-24S24A			24	21	76

Package Dimensions: 11.50*6.00*10.00mm

NN1-XXDXXANT

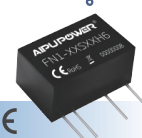


◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NN1-05D05ANT	5	4.5-5.5	±5	±100	84
NN1-05D09ANT			±9	±55	84
NN1-05D12ANT			±12	±42	84
NN1-05D15ANT			±15	±33	83
NN1-05D24ANT			±24	±21	83
NN1-12D05ANT	12	10.8-13.2	±5	±100	84
NN1-12D09ANT			±9	±56	84
NN1-12D12ANT			±12	±42	85
NN1-12D15ANT			±15	±33	86
NN1-24D05ANT	24	21.6-26.4	±5	±100	84
NN1-24D09ANT			±9	±56	84
NN1-24D12ANT			±12	±42	85
NN1-24D15ANT			±15	±33	86

Package Dimensions: 15.24*11.40*7.25mm

FN1-XXXXXH6



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
FN1-05S3V3H6	5	4.5-5.5	3.3	303	71
FN1-05S05H6			5	200	82
FN1-05S09H6			9	111	83
FN1-05S12H6			12	83	74
FN1-05S15H6			15	67	74
FN1-05S24H6			24	42	80
FN1-12S05H6	12	10.8-13.2	5	200	75
FN1-12S09H6			9	111	82
FN1-12S12H6			12	83	83
FN1-12S15H6	24	21.6-26.4	15	67	83
FN1-15S15H6			15	67	83
FN1-24S3V3H6			3.3	303	79
FN1-24S05H6			5	200	80
FN1-24S09H6			9	111	82
FN1-24S12H6			12	83	76
FN1-24S15H6			15	67	76
FN1-24S24H6			24	42	78
FN1-05D05H6	5	4.5-5.5	±5	±100	76
FN1-05D09H6			±9	±56	78
FN1-05D12H6			±12	±42	82
FN1-05D15H6			±15	±33	74
FN1-12D05H6	12	10.8-13.2	±5	±100	83
FN1-12D09H6			±9	±56	78
FN1-12D12H6			±12	±42	71
FN1-12D15H6			±15	±33	73
FN1-24D05H6	24	21.6-26.4	±5	±100	73
FN1-24D09H6			±9	±56	77
FN1-24D12H6			±12	±42	74
FN1-24D15H6			±15	±33	84

Package Dimensions: 19.50*9.80*12.50mm

NNV5-XXSXXBN/B3N



◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NNV5-05S05B3N	5	4.5-5.5	5	100	83
NNV5-05S05BN			5	100	83

Package Dimensions: 19.50*6.00*10.00mm

FN1-XXSXXAN

◆ Product List

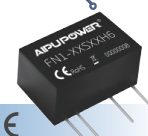


Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
FN1-3V3S3V3AN	3.3	2.97-3.63	3.3	303	76
FN1-3V3S05AN			5	200	83
FN1-3V3S12AN			12	83	85
FN1-3V3S15AN			15	67	83
FN1-3V3S24AN			24	42	83
FN1-05S3V3AN	5	4.5-5.5	3.3	303	80
FN1-05S05AN			5	200	85
FN1-05S09AN			9	111	85
FN1-05S12AN			12	83	85
FN1-05S15AN			15	67	85
FN1-05S24AN			24	42	84
FN1-09S09AN	9	8.1-9.9	9	111	84
FN1-12S3V3AN	12	10.8-13.2	3.3	303	77
FN1-12S05AN			5	200	86
FN1-12S09AN			9	111	86
FN1-12S12AN			12	83	86
FN1-12S15AN			15	67	86
FN1-12S24AN			24	42	85
FN1-15S05AN	15	13.5-16.5	5	200	85
FN1-15S12AN			12	83	86
FN1-15S15AN			15	67	85
FN1-15S24AN			24	42	85
FN1-24S3V3AN	24	21.6-26.4	3.3	303	77
FN1-24S05AN			5	200	84
FN1-24S09AN			9	111	85
FN1-24S12AN			12	83	86
FN1-24S15AN			15	67	85
FN1-24S24AN			24	42	85

Package Dimensions: 11.50*6.00*10.00mm

FN2-XXXXXH6

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
FN2-05S05H6	5	4.5-5.5	5	400	81
FN2-05S09H6			9	222	83
FN2-05S12H6			12	167	77
FN2-05S15H6			15	133	77
FN2-05S24H6			24	83	79
FN2-12S05H6	12	10.8-13.2	5	400	82
FN2-12S09H6			9	222	86
FN2-12S12H6			12	167	88
FN2-12S15H6			15	133	86
FN2-15S05H6	15	13.5-16.5	5	400	81
FN2-24S05H6	24	21.6-26.4	5	400	81
FN2-24S12H6			12	167	86
FN2-24S15H6			15	133	82
FN2-24S24H6	24	21.6-26.4	24	83	85
FN2-05D05H6		4.5-5.5	±5	±200	76
FN2-05D12H6			±12	±83	81
FN2-05D15H6			±15	±67	78
FN2-12D05H6	12	10.8-13.2	±5	±200	83
FN2-12D09H6			±9	±110	78
FN2-12D12H6			±12	±83	78
FN2-12D15H6	24	21.6-26.4	±15	±67	86
FN2-24D05H6			±5	±200	77
FN2-24D12H6			±12	±83	80
FN2-24D15H6			±15	±67	86

Package Dimensions: 19.50*9.80*12.50mm

NW1-XXDXXDR3

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NW1-05D05DR3	5	4.75-5.25	±5	±100	77
NW1-05D09DR3			±9	±56	80
NW1-05D12DR3			±12	±42	82
NW1-05D15DR3			±15	±33	80
NW1-12D05DR3	12	11.4-12.6	±5	±100	80
NW1-12D09DR3			±9	±56	83
NW1-12D12DR3			±12	±42	81
NW1-12D15DR3			±15	±33	83
NW1-24D05DR3	24	22.8-25.2	±5	±100	80
NW1-24D12DR3			±12	±42	82
NW1-24D15DR3			±15	±33	83

Package Dimensions: 27.40*8.80*11.40mm

NW2-XXDXXDR3

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NW2-05D05DR3	5	4.75-5.25	±5	±200	80
NW2-05D09DR3			±9	±111	80
NW2-05D12DR3			±12	±83	80
NW2-05D15DR3			±15	±67	80
NW2-12D05DR3	12	11.4-12.6	±5	±200	80
NW2-12D09DR3			±9	±111	80
NW2-12D12DR3			±12	±83	83
NW2-12D15DR3			±15	±67	82
NW2-24D05DR3	24	22.8-25.2	±5	±200	79
NW2-24D12DR3			±12	±83	80
NW2-24D15DR3			±15	±67	83

Package Dimensions: 27.40*8.80*11.40mm

DC-DC (1W-3W)

DC-DC Converter

FW2-XXSXXC

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency
	Nom.	Range	Voltage	Current (mA)	(%TYP)
		(VDC)	(VDC)	MAX	
FW2-05S05C	5	4.75-5.25	5	400	69
FW2-05S12C			12	167	77
FW2-05S15C			15	133	77
FW2-12S05C	12	11.4-12.6	5	400	70
FW2-12S12C			12	167	77
FW2-12S15C			15	133	77
FW2-15S05C	15	14.25-15.75	5	400	70
FW2-15S12C			12	167	77
FW2-15S15C			15	133	77
FW2-24S05C	24	22.8-25.2	5	400	70
FW2-24S12C			12	167	77
FW2-24S15C			15	133	77
Package Dimensions: 19.50*7.00*10.10mm					

FW2-XXSXXC3

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range	Voltage	Current (mA)	
		(VDC)	(VDC)	MAX	
FW2-05S05C3	5	4.75-5.25	5	400	69
FW2-05S12C3			12	167	77
FW2-05S15C3			15	133	77
FW2-12S05C3	12	11.4-12.6	5	400	70
FW2-12S12C3			12	167	77
FW2-12S15C3			15	133	77
FW2-15S05C3	15	14.25-15.75	5	400	70
FW2-15S12C3			12	167	77
FW2-15S15C3			15	133	77
FW2-24S05C3	24	22.8-25.2	5	400	70
FW2-24S12C3			12	167	77
FW2-24S15C3			15	133	77
Package Dimensions: 19.50*7.00*10.10mm					

FW1-XXSXXB3

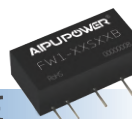
◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency
	Nom.	Range	Voltage	Current (mA)	(%TYP)
		(VDC)	(VDC)	MAX	
FW1-05S05B3	5	4.5-5.5	5	200	72
FW1-05S12B3			12	83	78
FW1-05S15B3			15	67	77
FW1-05S24B3			24	42	73
FW1-12S05B3	12	10.8-13.2	5	200	77
FW1-12S12B3			12	83	77
FW1-12S15B3			15	67	74
FW1-24S05B3	24	22.8-25.2	5	200	74
FW1-24S12B3			12	83	76
FW1-24S15B3			15	67	77
FW1-24S24B3			24	42	67
Package Dimensions: 19.50*6.00*10.10mm					

FW1-XXSXXB

◆ Product List



Part No.	Input Volt.		Output Volt./Current		Efficiency
	Nom.	Range	Voltage	Current (mA)	(%TYP)
		(VDC)	(VDC)	MAX	
FW1-05S05B	5	4.5-5.5	5	200	72
FW1-05S12B			12	83	78
FW1-05S15B			15	67	77
FW1-05S24B			24	42	73
FW1-12S05B	12	10.8-13.2	5	200	77
FW1-12S12B			12	83	77
FW1-12S15B			15	67	74
FW1-12S24B			24	42	67
FW1-24S05B	24	22.8-25.2	5	200	74
FW1-24S12B			12	83	76
FW1-24S15B			15	67	77
FW1-24S24B			24	42	67
Package Dimensions: 19.50*6.00*10.10mm					

KW1-16XXXE3

◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
KW1-16S05E3	12	4.5-36	5	200	71
KW1-16S12E3			12	84	74
KW1-16S15E3			15	67	74
KW1-16D05E3			±5	±100	71
KW1-16D12E3			±12	±42	74
KW1-16D15E3			±15	±33	74

Package Dimensions: 22.00*9.50*12.00mm



KW3-16XXXE3R3

◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
KW3-16S05E3R3	12	4.5-36	5	600	77
KW3-16S12E3R3			12	250	79
KW3-16S15E3R3			15	200	79
KW3-16D05E3R3			±5	±300	76
KW3-16D12E3R3			±12	±125	79
KW3-16D15E3R3			±15	±100	79

Package Dimensions: 22.00*9.50*12.00mm



KW1-XXXXXER3/E3R3

◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
KW1-24S3V3ER3/E3R3	24	9-36	3.3	303	75
KW1-24S05ER3/E3R3			5	200	79
KW1-24S09ER3/E3R3			9	111	80
KW1-24S12ER3/E3R3			12	83	82
KW1-24S15ER3/E3R3			15	67	80
KW1-24S24ER3/E3R3			24	42	82
KW1-24D05ER3/E3R3	24	9-36	±5	±200	77
KW1-24D09ER3/E3R3			±9	±56	80
KW1-24D12ER3/E3R3			±12	±42	82
KW1-24D15ER3/E3R3			±15	±33	80

Package Dimensions: 22.00*9.50*12.00mm



KW3-XXXXXER3/E3R3

◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
KW3-24S3V3ER3/E3R3	24	9-36	3.3	728	75
KW3-24S05ER3/E3R3			5	600	80
KW3-24S09ER3/E3R3			9	333	80
KW3-24S12ER3/E3R3			12	250	83
KW3-24S15ER3/E3R3			15	200	84
KW3-24S24ER3/E3R3			24	125	83
KW3-24D05ER3/E3R3	24	9-36	±5	±300	80
KW3-24D09ER3/E3R3			±9	±167	80
KW3-24D12ER3/E3R3			±12	±125	83
KW3-24D15ER3/E3R3			±15	±100	84
KW3-05S05ER3/E3R3	5	4.5-9	5	600	74
KW3-05S09ER3/E3R3			9	333	77
KW3-05S12ER3/E3R3			12	250	77
KW3-05S15ER3/E3R3			15	200	77
KW3-05S24ER3/E3R3			24	125	78
KW3-05D05ER3/E3R3			±5	±300	74
KW3-05D09ER3/E3R3			±9	±167	77
KW3-05D12ER3/E3R3			±12	±125	77
KW3-05D15ER3/E3R3			±15	±100	78

Package Dimensions: 22.00*9.50*12.00mm



NN2/3-XXSXXC4N

◆ Product List

Part No.	Input Volt.		Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage (VDC)	Current (mA) MAX	
NN2-05S24C4N	5	4.5-5.5	24	83	86
NN2-12S12C4N	12	10.8-13.2	12	167	87
NN3-05S05C4N	5	4.5-5.5	5	600	83
NN3-05S12C4N			12	250	83
NN3-05S15C4N			15	200	83
NN3-12S05C4N	12	10.8-13.2	5	600	83
NN3-12S12C4N			12	250	84
NN3-12S15C4N			15	200	83
NN3-12S24C4N			24	125	83
NN3-24S05C4N	24	21.6-26.4	5	600	83
NN3-24S12C4N			12	250	84
NN3-24S15C4N			15	200	85
NN3-24S24C4N			24	125	84

Package Dimensions: 19.50*7.00*10.00mm



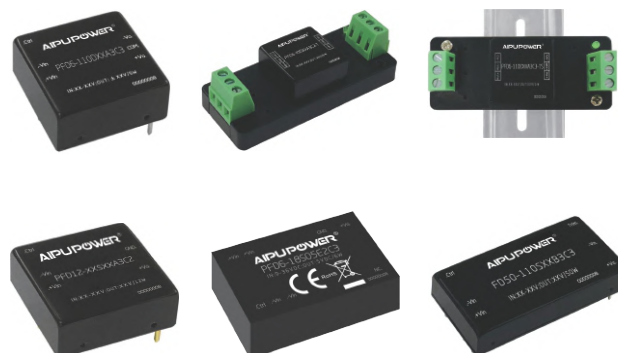
DC-DC (6-60W)

DC-DC Converter

◆ Typical features

- Wide input voltage range
- Low stand-by power consumption
- Efficiency up to 90%
- Isolation voltage 4000VAC
- Compact size, high power density, industry level design
- Operating temperature from -40°C to +75/105°C
- Output over-current, over-voltage & short circuit protections
- EMC EN55032/GB9254 Class A
- Isolated & regulated single output/dual outputs
- PCB DIP mounting
- Standard Pin-out alignment

- Additional circuit diagram is recommended for high EMC requirement
- Application: Industry control, Electric power, Instrument, Communication, Railway, etc



PFD6-XXXXXA3(C)2

◆ Product List



Part No.	Input Volt.		Input Current	Output Volt./Current		Efficiency
	Nom.	Range (VDC)		No load (mA)	Voltage (VDC)	
PFD6-18S3V3A3(C)2	24	9-36	5	3.3	1500/0	77
PFD6-18S05A3(C)2				5	1200/0	83
PFD6-18S09A3(C)2				9	667/0	84
PFD6-18S12A3(C)2				12	500/0	85
PFD6-18S15A3(C)2				15	400/0	86
PFD6-18S24A3(C)2				24	250/0	86
PFD6-18S25A3(C)2				25	200/0	85
PFD6-18S40A3(C)2				40	150/0	86
PFD6-36S3V3A3(C)2	48	18-75	4	3.3	1500/0	80
PFD6-36S05A3(C)2				5	1200/0	84
PFD6-36S09A3(C)2				9	667/0	85
PFD6-36S12A3(C)2				12	500/0	87
PFD6-36S15A3(C)2				15	400/0	88
PFD6-36S24A3(C)2				24	250/0	87
PFD6-18D05A3(C)2	24	9-36	5	±5	±600/0	82
PFD6-18D09A3(C)2				±9	±333/0	84
PFD6-18D12A3(C)2				±12	±250/0	85
PFD6-18D15A3(C)2				±15	±200/0	86
PFD6-18D18A3(C)2				±18	±167/0	86
PFD6-18D24A3(C)2				±24	±125/0	86
PFD6-36D05A3(C)2	48	18-75	4	±5	±600/0	83
PFD6-36D09A3(C)2				±9	±333/0	84
PFD6-36D12A3(C)2				±12	±250/0	87
PFD6-36D15A3(C)2				±15	±200/0	88
PFD6-36D24A3(C)2				±24	±125/0	86
Package Dimensions: 25.4*25.4*11.0mm						

PFD6-XXXXXE2(C)3

◆ Product List



Part No.	Input Volt.		Input Current	Output Volt./Current		Efficiency
	Nom.	Range (VDC)	No load (mA)	Voltage	Current (mA)	(%TYP)
				(VDC)	MAX	
PFD6-18S3V3E2(C)3	24	9-36	5	3.3	1500/0	77
PFD6-18S05E2(C)3				5	1200/0	83
PFD6-18S09E2(C)3				9	667/0	84
PFD6-18S12E2(C)3				12	500/0	85
PFD6-18S15E2(C)3				15	400/0	86
PFD6-18S24E2(C)3				24	250/0	86
PFD6-18S25E2(C)3				25	240/0	85
PFD6-36S3V3E2(C)3	48	18-75	4	3.3	1500/0	80
PFD6-36S05E2(C)3				5	1200/0	84
PFD6-36S09E2(C)3				9	667/0	85
PFD6-36S12E2(C)3				12	500/0	87
PFD6-36S15E2(C)3				15	400/0	88
PFD6-36S24E2(C)3				24	250/0	87
PFD6-18D05E2(C)3	24	9-36	5	±5	600/0	82
PFD6-18D09E2(C)3				±9	333/0	84
PFD6-18D12E2(C)3				±12	250/0	85
PFD6-18D15E2(C)3				±15	200/0	86
PFD6-18D18E2(C)3				±18	167/0	86
PFD6-18D24E2(C)3				±24	125/0	86
PFD6-36D05E2(C)3	48	18-75	4	±5	600/0	83
PFD6-36D09E2(C)3				±9	333/0	84
PFD6-36D12E2(C)3				±12	250/0	87
PFD6-36D15E2(C)3				±15	200/0	88
PFD6-36D24E2(C)3				±24	125/0	86
Package Dimensions: 31.60*20.30 *10.20mm						

PFD6-XXSXXE2N6

◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) MAX	
PFD6-18S05E2N6	24	9-36	5	5	1200/0	81
PFD6-18S06E2N6				6	1000/0	82
PFD6-18S09E2N6				9	667/0	84
PFD6-18S12E2N6				12	500/0	85
PFD6-18S15E2N6				15	400/0	86
PFD6-18S18E2N6				18	333/0	86
PFD6-18S24E2N6				24	250/0	85
PFD6-36S05E2N6	48	18-75	4	5	1200/0	82
PFD6-36S09E2N6				9	667/0	84
PFD6-36S12E2N6				12	500/0	85
PFD6-36S15E2N6				15	400/0	86
PFD6-36S24E2N6				24	250/0	85

Package Dimensions: 31.60*20.30*10.20mm

FD6-110SXXA3N4

◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) (mA)	
FD6-110S3V3A3N4	100	40-160	2	3.3	1818	77
FD6-110S05A3N4				5	1200	81
FD6-110S09A3N4				9	667	82
FD6-110S12A3N4				12	500	85
FD6-110S15A3N4				15	400	85
FD6-110S24A3N4				24	250	86

Package Dimensions: 25.40*25.40*11.70mm

FD12-110SXXA3N4

◆ Product List

Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) (mA)	
FD12-110S3V3A3N4	100	40-160	2	3.3	2400	80
FD12-110S05A3N4				5	2400	82
FD12-110S09A3N4				9	1333	85
FD12-110S12A3N4				12	1000	87
FD12-110S15A3N4				15	800	89
FD12-110S24A3N4				24	500	89

Package Dimensions: 25.40*25.40*12.50mm

DD6-05SXXE3(C)2

◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) (mA)	
DD6-05S05E3(C)2	5	4.5-9	10	5	1200	80
DD6-05S12E3(C)2				12	500	84
DD6-05S15E3(C)2				15	400	84
DD6-05S24E3(C)2				24	250	84

Package Dimensions: 31.80*20.30*12.00mm

DD10-XXSXXE3C2

◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) (mA)	
DD10-18S3V3E3C2	24	9-36	33	3.3	2400	86
DD10-18S05E3C2				5	2000	87
DD10-18S12E3C2			10	12	833	87
DD10-18S15E3C2				15	667	87
DD10-18S24E3C2				24	416	88
DD10-36S3V3E3C2	48	18-75	33	3.3	2400	86
DD10-36S05E3C2				5	2000	87
DD10-36S12E3C2			10	12	833	87
DD10-36S15E3C2				15	667	87
DD10-36S24E3C2				24	416	88

Package Dimensions: 31.80*20.30*12.00mm

DD10-XXDXXE3C2

◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) (mA)	
DD10-12D05E3C2	12	9-18	12	±5	±1000	83
DD10-12D12E3C2				±12	±416	87
DD10-12D15E3C2				±15	±333	87
DD10-24D05E3C2	24	18-36	12	±5	±1000	83
DD10-24D12E3C2				±12	±416	87
DD10-24D15E3C2				±15	±333	87

Package Dimensions: 31.80*20.30*12.00mm

DC-DC (6-60W)

DC-DC Converter

FD12-XXSXXA3C4



◆ Product List

Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD12-18S3V3A3C4	12	9-36	1	3.3	2400	78
FD12-18S05A3C4				5	2000	81
FD12-18S09A3C4				9	1333	84
FD12-18S12A3C4				12	1000	86
FD12-18S15A3C4				15	800	85
FD12-18S24A3C4				24	500	87
FD12-36S3V3A3C4	48	18-75	1	3.3	2400	78
FD12-36S05A3C4				5	2000	81
FD12-36S09A3C4				9	1333	84
FD12-36S12A3C4				12	1000	86
FD12-36S15A3C4				15	800	86
FD12-36S24A3C4				24	500	87

Package Dimensions: 25.40*25.40*11.00mm

FD12-110XXXA3(C)3

◆ Product List

Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD12-110S3V3A3(C)3	110	40-160	1	3.3	2400	77
FD12-110S05A3(C)3				5	2400	82
FD12-110S09A3(C)3				9	1333	85
FD12-110S12A3(C)3				12	1000	87
FD12-110S15A3(C)3				15	800	87
FD12-110S24A3(C)3				24	500	89
FD12-110D3V3A3(C)3				±3.3	±1200	80
FD12-110D05A3(C)3				±5	±1200	82
FD12-110D09A3(C)3				±9	±667	83
FD12-110D12A3(C)3				±12	±500	84
FD12-110D15A3(C)3				±15	±400	85
FD12-110D24A3(C)3				±24	±250	86

Package Dimensions: 25.40* 25.40*12.50 mm

PFD12-XXXXXA3(C)2



◆ Product List

Part No.	Input Volt.		Input Current	Output Volt./Current		Efficiency
	Nom.	Range (VDC)	No load (mA)	Voltage (VDC)	Current (mA)	(%TYP)
PFD12-18S3V3A3(C)2	24	9-36	2	3.3	2400	81
PFD12-18S05A3(C)2				5	2000	83
PFD12-18S06A3(C)2				6	2000	85
PFD12-18S09A3(C)2				9	1333	86
PFD12-18S12A3(C)2				12	1000	87
PFD12-18S15A3(C)2				15	800	88
PFD12-18S17A3(C)2				17	706	88
PFD12-18S20A3(C)2				20	600	86
PFD12-18S24A3(C)2				24	500	88
PFD12-36S3V3A3(C)2	48	18-75		3.3	2400	78
PFD12-36S05A3(C)2				5	2000	83
PFD12-36S5V5A3(C)2				5.5	2181	84
PFD12-36S09A3(C)2				9	1333	86
PFD12-36S12A3(C)2				12	1000	87
PFD12-18D05A3(C)2	24	9-36	10	±5	±1200	84
PFD12-18D09A3(C)2				±9	±667	85
PFD12-18D12A3(C)2				±12	±500	87
PFD12-18D15A3(C)2				±15	±400	88
PFD12-18D24A3(C)2				±24	±250	87
PFD12-36D05A3(C)2	48	18-75		±5	±1200	84
PFD12-36D09A3(C)2				±9	±667	85
PFD12-36D12A3(C)2				±12	±500	87
PFD12-36D15A3(C)2				±15	±400	88
PFD12-36D24A3(C)2				±24	±250	87

Package Dimensions: 25.40*25.40*11.00mm

PFD15-XXSXXA3(C)2



◆ Product List

Part No.	Input Volt.		Input Current	Output Volt./Current		Efficiency
	Nom.	Range (VDC)	No load (mA)	Voltage (VDC)	Current (mA)	(%TYP)
PFD15-18S3V3A3(C)2	24	9-36	33	3.3	4000	88
PFD15-18S04A3(C)2			33	4	3750	89
PFD15-18S05A3(C)2			33	5	3000	90
PFD15-18S09A3(C)2			33	9	1667	90
PFD15-18S12A3(C)2			5	12	1250	90
PFD15-18S12V2A3(C)2			5	12.2	1229	90
PFD15-18S15A3(C)2			5	15	1000	90
PFD15-18S24A3(C)2			5	24	625	91
PFD15-36S3V3A3(C)2	48	18-75	17	3.3	4000	88
PFD15-36S05A3(C)2			17	5	3000	90
PFD15-36S09A3(C)2			17	9	1667	90
PFD15-36S12A3(C)2			5	12	1250	91
PFD15-36S15A3(C)2			5	15	1000	91
PFD15-36S24A3(C)2			5	24	625	91

Package Dimensions: 25.40*25.40*12.50 mm

DD30-36E0524G9N5



◆ Product List

Part No.	Input Volt.		Output Volt./Current				Efficiency (%TYP)
	Nom.	Range (VDC)	Voltage 1 (VDC)	Current 1 (mA)	Voltage 2 (VDC)	Current 2 (mA)	
DD30-36E0524G9N5	48	18-75	5	4000	24	417	84

Package Dimensions: 70.00*48.00*26.00mm

PFD20-XXSXXA3(C)2



◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
PFD20-18S3V3A3(C)2	24	9-36	33	3.3	5000	88
PFD20-18S05A3(C)2			33	5	4000	90
PFD20-18S09A3(C)2			33	9	2222	90
PFD20-18S12A3(C)2			5	12	1667	90
PFD20-18S15A3(C)2			5	15	1333	90
PFD20-18S24A3(C)2			5	24	833	91
PFD20-18S18A3(C)2			5	18	1111	89
PFD20-18S28A3(C)2			5	28	714	91
PFD20-36S3V3A3(C)2	48	18-75	17	3.3	5000	88
PFD20-36S05A3(C)2			17	5	4000	90
PFD20-36S09A3(C)2			17	9	2222	90
PFD20-36S12A3(C)2			5	12	1667	91
PFD20-36S15A3(C)2			5	15	1333	91
PFD20-36S24A3(C)2			5	24	833	91

Package Dimensions: 25.40*25.40*12.50 mm

PFD20-110SXXA3R3

◆ Product List

Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
PFD20-110S3V3A3R3	110	40-160	13	3.3	5000	86
PFD20-110S05A3R3				5	4000	87
PFD20-110S09A3R3			2	9	2222	87
PFD20-110S12A3R3				12	1667	88
PFD20-110S15A3R3				15	1333	88
PFD20-110S24A3R3				24	833	89

Package Dimensions: 25.40*25.40*12.50 mm

FD30-XXDXXB3C3



◆ Product List

Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD30-18D3V3B3C3	24	9-36	40	±3.3	±3000	86
FD30-18D05B3C3			40	±5	±3000	89
FD30-18D09B3C3			40	±9	±1667	89
FD30-18D12B3C3			3	±12	±1250	89
FD30-18D15B3C3			3	±15	±1000	89
FD30-18D24B3C3			3	±24	±625	88
FD30-36D3V3B3C3	48	18-75	40	±3.3	±3000	86
FD30-36D05B3C3			40	±5	±3000	89
FD30-36D09B3C3			40	±9	±1667	90
FD30-36D12B3C3			3	±12	±1250	89
FD30-36D15B3C3			3	±15	±1000	89
FD30-36D24B3C3			3	±24	±625	89

Package Dimensions: 50.80*25.40*13.30 mm

FD20-110SXXB3C5



◆ Product List

Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD20-110S3V3B3C5	110	40-160	30	3.3	5000	85
FD20-110S05B3C5				5	4000	87
FD20-110S09B3C5				9	2222	88
FD20-110S12B3C5			1	12	1667	88
FD20-110S15B3C5				15	1333	87
FD20-110S24B3C5				24	833	89
FD20-110S40B3C5				40	500	88

Package Dimensions: 50.80*25.40*13.00mm

FD20-110SXXB3(C)3



◆ Product List

Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD20-110S3V3B3(C)3	110	40-160	30	3.3	5000	86
FD20-110S05B3(C)3				5	4000	88
FD20-110S09B3(C)3				9	2222	89
FD20-110S12B3(C)3			2	12	1667	88
FD20-110S15B3(C)3				15	1333	90
FD20-110S24B3(C)3				24	833	89
FD20-110S40B3(C)3				40	500	88

Package Dimensions: 50.80*25.40*13.00 mm

PFD30-XXSXXA3R2



◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
PFD30-18S3V3A3R2	24	9-36	-	3.3	6000	87
PFD30-18S05A3R2				5	6000	88
PFD30-18S06A3R2				6	5000	89
PFD30-18S09A3R2				9	3333	90
PFD30-18S12A3R2				12	2500	90
PFD30-18S15A3R2				15	2000	90
PFD30-18S24A3R2				24	1250	90
PFD30-36S3V3A3R2	48	18-75	-	3.3	6000	87
PFD30-36S05A3R2				5	6000	88
PFD30-36S09A3R2				9	3333	90
PFD30-36S12A3R2				12	2500	91
PFD30-36S15A3R2				15	2000	91
PFD30-36S24A3R2				24	1250	90

Package Dimensions: 25.40*25.40*12.50 mm

FD30-XXSXXB3(C)



◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD30-18S3V3B3(C)	24	9-36	30	3.3	6000	87
FD30-18S05B3(C)				5	6000	90
FD30-18S09B3(C)			2	9	3333	89
FD30-18S12B3(C)				12	2500	90
FD30-18S15B3(C)				15	2000	90
FD30-18S24B3(C)				24	1250	90
FD30-36S3V3B3(C)	48	18-75	30	3.3	6000	87
FD30-36S05B3(C)				5	6000	90
FD30-36S09B3(C)			2	9	3333	89
FD30-36S12B3(C)				12	2500	90
FD30-36S15B3(C)				15	2000	90
FD30-36S24B3(C)				24	1250	90

Package Dimensions: 50.80*25.40*9.50mm

PFD50-XXSXXB3(R)2



◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD50-18S05B3(R)2	24	9-36	2	5	10000	89
FD50-18S12B3(R)2			4	12	4167	90
FD50-18S15B3(R)2			4	15	3333	90
FD50-18S24B3(R)2			3	24	2083	90
FD50-36S05B3(R)2	48	18-75	2	5	10000	91
FD50-36S12B3(R)2			4	12	4167	92
FD50-36S15B3(R)2			4	15	3333	92
FD50-36S24B3(R)2			3	24	2083	92

Package Dimensions: 50.80*25.40*11.80 mm

FD60-XXSXXB3R2



◆ Product List

Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD60-18S05B3R2	24	9-36	30	5	12000	92
FD60-18S12B3R2			30	12	5000	93
FD60-18S15B3R2			30	15	4000	93
FD60-18S24B3R2			30	24	2500	93
FD60-36S05B3R2	48	18-75	15	5	12000	92
FD60-36S12B3R2			15	12	5000	93
FD60-36S15B3R2			15	15	4000	93
FD60-36S24B3R2			15	24	2500	93

Package Dimensions: 50.80*25.40*11.80 mm

FD30/40/50-XXSXXB3(C)3



◆ Product List



Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD30-110S3V3B3(C)3	110	40-160	25	3.3	8000	87
FD30-110S05B3(C)3				5	6800	90
FD30-110S12B3(C)3			2	12	3333	89
FD30-110S15B3(C)3				15	2500	90
FD30-110S24B3(C)3				24	2000	90
FD30-110S48B3(C)3				48	1250	90
FD40-110S3V3B3(C)3	110	40-160	25	3.3	6000	87
FD40-110S05B3(C)3				5	6000	90
FD40-110S12B3(C)3			2	12	3333	89
FD40-110S15B3(C)3				15	2500	90
FD40-110S24B3(C)3				24	2000	90
FD40-110S48B3(C)3				48	1250	90
FD50-110S3V3B3(C)3	110	40-160	25	3.3	10000	87
FD50-110S05B3(C)3				5	10000	90
FD50-110S12B3(C)3			2	12	4160	89
FD50-110S15B3(C)3				15	3330	90
FD50-110S24B3(C)3				24	2080	90
FD50-110S48B3(C)3				48	10000	87

Package Dimensions: 50.80*25.40*13.00 mm

FD50-XXSXXB3(C)



◆ Product List

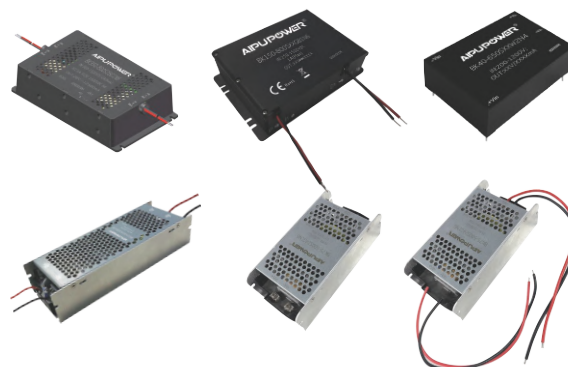


Part No.	Input Volt.		Input Current No load (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA)	
FD50-24S3V3B3(C)	24	18-36	50	3.3	10000	87
FD50-24S05B3(C)				5	10000	90
FD50-24S12B3(C)			2	12	4160	89
FD50-24S15B3(C)				15	3330	90
FD50-24S24B3(C)	48	36-75	50	24	2080	90
FD50-48S3V3B3(C)				3.3	10000	87
FD50-48S05B3(C)			2	5	10000	89
FD50-48S12B3(C)				12	4160	89
FD50-48S15B3(C)				15	3330	90
FD50-48S24B3(C)				24	2080	90

Package Dimensions: 50.80*25.40*9.50mm

◆ Typical features

- Ultra high & wide input voltage range
 - Industry level operating temperature range
 - High efficiency, low Ripple & Noise
 - Isolation voltage 4000VAC/DC
 - Altitude during operation 4000m/5000m Max
 - Compliant with EN62109/UL1741
 - Input under-voltage & anti-reverse protections
 - Output over-current, over-voltage & short circuit protections
 - Additional circuit diagram is recommended for high EMC requirement
- Application: Solar inverter, Solar electrical generation, Energy storage system, Industry control, SVG, High voltage frequency conversion, etc



BK5-600SXXH1N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VDC)	(VDC)	(mA)	
BK5-600S05H1N4	200-1200	5	1000	68
BK5-600S12H1N4		12	417	75
BK5-600S15H1N4		15	333	76
BK5-600S24H1N4		24	208	78
Package Dimensions: 70.00*48.00*23.50 mm				

BK15-500SXXH2N6

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VDC)	(VDC)	(mA)	
BK15-500S12H2N6	100-1000	12	1250	82
BK15-500S15H2N6		15	1000	82
BK15-500S24H2N6		24	625	85
Package Dimensions: 70.00*48.00*23.50 mm				

BK15-500SXXH1N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VDC)	(VDC)	(mA)	
BK15-500S05H1N4	100-1000	5	3000	82
BK15-500S12H1N4		12	1250	83
BK15-500S15H1N4		15	1000	84
BK15-500S24H1N4		24	625	85
Package Dimensions: 70.00*48.00*23.50 mm				

BK15-800SXXW2N6

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VDC)	(VDC)	(mA)	
BK15-800S12W2N6	200-1500	12	1250	82
BK15-800S15W2N6		15	1000	83
BK15-800S24W2N6		24	625	85
Package Dimensions : 89.00*63.50*25.00 mm				

BK20-400SXXH2N6

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VDC)	(VDC)	(mA)	
BK20-400S12H2N6	60-750	12	1667	84
BK20-400S24H2N6	80-745	24	833	86
Package Dimensions: 70.00*48.00*23.50 mm				

BK20-500SXXH2N6

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VDC)	(VDC)	(mA)	
BK20-500S12H2N6	200-820	12	1667	80
BK20-500S15H2N6		15	1333	81
BK20-500S24H2N6		24	833	82
Package Dimensions: 70.00*48.00*23.50 mm				



BK25-170SXXH2N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VDC)	Voltage (VDC)	Current (mA)	
BK25-170S12H2N4	45-300	12	2080	86

Package Dimensions: 70.00*48.00*23.50 mm



BK25-600DXXH1N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VDC)	Voltage (VDC)	Current (mA)	
BK25-600D05H1N4	200-1200	±5	±2500	80
BK25-600D12H1N4		±12	±1042	83
BK25-600D15H1N4		±15	±833	84
BK25-600D24H1N4		±24	±521	85

Package Dimensions: 70.00*48.00*23.50 mm



BK25-500SXXH1N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VDC)	Voltage (VDC)	Current (mA)	
BK25-500S12H1N4	100-1000	12	2084	82
BK25-500S15H1N4		15	1667	83
BK25-500S24H1N4		24	1042	85

Package Dimensions: 70.00*48.00*23.50 mm



BK25-600SXXH1N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VDC)	Voltage (VDC)	Current (mA)	
BK25-600S05H1N4	200-1200	5	5000	80
BK25-600S12H1N4		12	2084	82
BK25-600S15H1N4		15	1667	83
BK25-600S24H1N4		24	1024	84

Package Dimensions: 70.00*48.00*23.50 mm



BK25-500SXXH1D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VDC)	Voltage (VDC)	Current (mA)	
BK25-500S12H1D4	100-1000	12	2084	85
BK25-500S24H1D4		24	1042	86

Package Dimensions: 70.00*48.00*23.50 mm



BK25-600DXXH2D4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VDC)	Voltage (VDC)	Current (mA)	
BK25-600D12H2D4	200-1200	±12	±1042	82
BK25-600D15H2D4		±15	±833	83
BK25-600D24H2D4		±24	±521	84

Package Dimensions: 70.00*48.00*23.50 mm



BK40-600SXXW2N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VDC)	Voltage (VDC)	Current (mA)	
BK40-600S12W2N4	200-1200	12	3333	83
BK40-600S15W2N4		15	2667	84
BK40-600S24W2N4		24	1667	85

Package Dimensions: 89.00*63.50*25.00 mm



BK40-650SXXW2N4

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range (VDC)	Voltage (VDC)	Current (mA)	
BK40-650S12W2N4	200-1200	12	3333	83
BK40-650S15W2N4		15	2667	84
BK40-650S24W2N4		24	1667	85

Package Dimensions: 89.00*63.50*25.00 mm



BK40-850SXXG2N6



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VDC)	(VDC)	(mA)	
BK40-850S12G2N6	200-1500	12	3333	77
BK40-850S24G2N6		24	1667	81
BK40-850S28G2N6		28	1428	82
BK40-850S35G2N6		35	1150	84
BK40-850S37G2N6		37	1081	85
Package Dimensions: 127.00*67.00*36.00 mm				

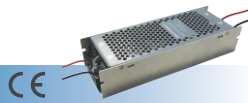
BK75-500SXXG(A)1N6



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficie ^{P)}
	Range	Voltage	Current	(%TY
	(VDC)	(VDC)	(mA)	
BK75-500S12G1N6	80-1000	12	6250	87
BK75-500S15G1N6		15	5000	87
BK75-500S24G1N6		24	3125	89
BK75-500S28G1N6		28	2679	89
BK75-500S32G1N6		32	2344	89
BK75-500S35G1N6		35	2143	89
Package Dimensions: 140.00*70.00*42.00 mm				

BK150-800SXXGA1D6



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency (%TYP)
	Range	Voltage	Current	
	(VDC)	(VDC)	(mA)	
BK150-800S24GA1D6	250-1500	24	6250	88
BK150-800S28GA1D6		28	5360	89
BK150-800S32GA1D6		32	4688	90
BK150-800S35GA1D6		35	4286	90
Package Dimensions: 201.00*70.00*42.00 mm				

BK150-800SXXGB1D6



◆ Product List

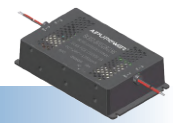
Part No.	Input Volt.	Output Volt./Current		Efficie ^{P)}
	Range	Voltage	Current	(%TY
	(VDC)	(VDC)	(mA)	
BK150-800S12GB1D6	250-1500	12	10000	84
BK150-800S24GB1D6		24	6250	88
BK150-800S28GB1D6		28	5360	89
Package Dimensions: 170.00*11.10*41.00 mm				

BK150-800SXXGF1N6

◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	(%TYP)
	(VDC)	(VDC)	(mA)	
BK150-800S24GF1N6	250-1500	24	6250	90
BK150-800S28GF1N6		28	5360	91
BK150-800S32GF1N6		32	4690	91
Package Dimensions: 140.00*70.00*25.00 mm				

BK350-800SXXG1N6



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficie ^{P)}
	Range	Voltage	Current	(%TY
	(VDC)	(VDC)	(mA)	
BK350-800S24G1N6	300-1500	24	14600	92
BK350-800S28G1N6		28	12500	92
BK350-800S32G1N6		32	10938	92
Package Dimensions: 215.00*125.00*50.00 mm				

BK200-800SXXG1N6



◆ Product List

Part No.	Input Volt.	Output Volt./Current		Efficiency
	Range	Voltage	Current	
	(VDC)	(VDC)	(mA)	(%TYP)
BK200-800S24G1N6	250-1500	24	8330	91
BK200-800S28G1N6		28	7143	91
Package Dimensions : 210.00*70.00*42.00 mm				

◆ Typical features

- Wide input voltage range, unisolated & regulated output
- Efficiency up to 96%
- Mini SIP package
- Short circuit and over temperature protections
- No need external component
- Low Ripple & Noise
- Operating temperature from -40°C to +85°C
- Plastic case, flame class UL94-V0

● Unless otherwise specified, all parameter values had been tested at nominal input voltage, pure resistive rated load, and at room temperature 25°C.

● Additional circuit diagram is recommended for high EMC requirement
Application: Pure digital circuit, Low frequency analog circuit, Relay drive circuit, IGBT/SIC drive circuit & data exchange circuit, etc.



K78XX-500R3

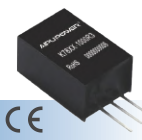


◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency	
	Range	Voltage	Current	Vin(min)	Vin(max)
	(VDC)	(VDC)	(mA)		
K783V3-500R3	24(4.75~34)	3.3	500	80	91
K7805-500R3	24(6.5~34)	5	500	87	92
	12(7~31)	-5	-300	81	80
K7809-500R3	24(12~34)	9	500	90	93
K7812-500R3	24(15~34)	12	500	92	96
	12(8~24)	-12	-150	85	84
K7815-500R3	24(19~34)	15	500	93	96
	12(8~21)	-15	-150	87	85
Package Dimensions: 11.60*7.50*10.20 mm					

K78XX-1000R3



◆ Product List



Part No.	Input Volt.	Output Volt./Current		Efficiency	
	Range	Voltage	Current	Vin(min)	Vin(max)
	(VDC)	(VDC)	(mA)		
K783V3-1000R3(L)	24(6~34)	3.3	1000	80	90
K7805-1000R3(L)	24(8~34)	5	1000	85	93
	12(8~27)	-5	-500	81	85
K7806-1000R3(L)	24(10~34)	6.5	1000	85	93
K7809-1000R3(L)	24(13~34)	9	1000	89	94
K7812-1000R3(L)	24(15~34)	12	1000	92	95
	12(8~20)	-12	-300	87	88
K7815-1000R3(L)	24(20~34)	15	1000	93	96
	12(8~18)	-15	-300	87	88
Package Dimensions: 11.50*9.00*17.50 mm					

K78XX-2000



◆ Product List



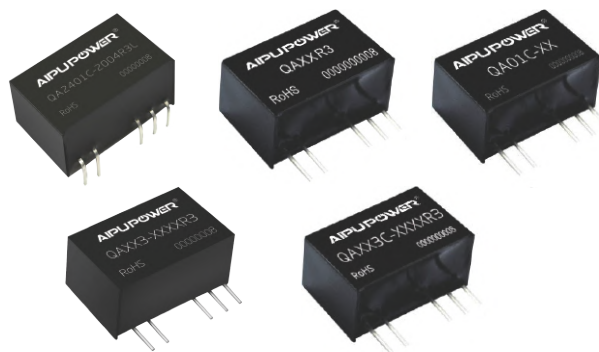
Part No.	Input Volt.	Output Volt./Current		Efficiency	
	Range	Voltage	Current	Vin(min)	Vin(max)
	(VDC)	(VDC)	(mA)		
K783V3-2000	12(4.75-18)	3.3	2000	85	87
K7805-2000	12(7-18)	5		87	91
K7812-2000	15(13.5-18)	12		92	96
Package Dimensions: 11.50*9.00*17.50mm					

◆ Typical features

- Wide input voltage range, isolated & unregulated
- Efficiency up to 83%
- Continuous short circuit protection
- Meet reinforced insulation
- Mini SIP package
- Isolation voltage 5000VAC/6000VDC
- Operating temperature from -40°C to +105°C
- Plastic case, flame class UL94-V0

● Unless otherwise specified, all parameter values had been tested at nominal input voltage, pure resistive rated load, and at room temperature 25°C.

● Additional circuit diagram is recommended for high EMC requirement
Application: PCS, SVG, Inverter, UPS H bridge inverter circuit, etc.
Specially designed for IGBT/SIC drive



QA053C-XXXXR3



◆ Product List

Part No.	Input Volt.		Input Current (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) MAX	
QA053C-1505R3	5	4.5-5.5	26	±15/-5	±80	83
QA053C-1803R3			22	±18/-3.5	±80	83
QA053C-2003R3			35	±20/-3.5	±80	83
QA053C-2004R3			35	±20/-4	±80	83
QA123C-1502R3	12	10.8-13.2	10	±15/-2.5	±100	87
QA123C-1504R3			10	±15/-4	±120	87
QA123C-1803R3			10	±18/-3	±100	87
QA123C-2005R3			14	±20/-5	±90	87
QA153C-1504R3	15	13.5-16.5	10	±15/-4	±120	87
QA153C-1803R3			10	±18/-3	±100	87
QA153C-2005R3			10	±20/-5	±90	87
QA243C-1504R3	24	21.6-26.4	8	±15/-4	±120	82
QA243C-1803R3			8	±18/-3	±100	83
QA243C-2005R3			8	±20/-5	±90	82

Package Dimensions: 19.50* 9.80* 12.50mm

QA053H-XXR3



◆ Product List

Part No.	Input Volt.		Input Current (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) MAX	
QA053H-XXR3	24	21.6-26.4	8	24	83	85

Package Dimensions: 27.50* 9.50* 12.00mm

QA2401C-2004R3L



◆ Product List

Part No.	Input Volt.		Input Current (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) MAX	
QA2401C-2004R3L	24	21.6-26.4	10	+20/-4.0	±100	83

Package Dimensions: 19.50* 9.80* 12.50mm

QA053R3



◆ Product List

Part No.	Input Volt.		Input Current (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) MAX	
QA121R3	12	10.8-13.2	16	+15/-8	±120	80
QA151R3	15	13.5-16.5	13	+15/-8	±120	83
QA241R3	24	21.6-26.4	13	+15/-8	±120	83

Package Dimensions: 19.50* 9.80* 12.50mm

QA053H-XXXXR3



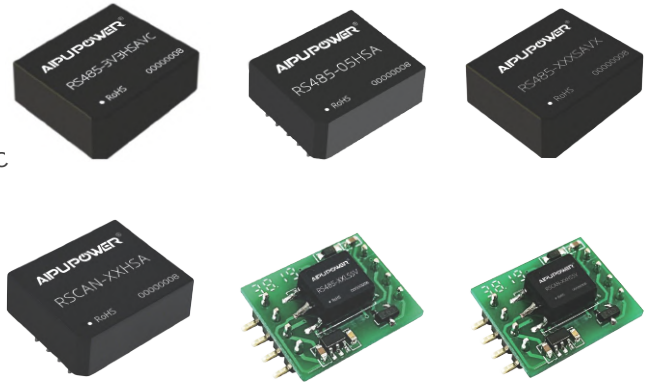
◆ Product List

Part No.	Input Volt.		Input Current (mA)	Output Volt./Current		Efficiency (%TYP)
	Nom.	Range (VDC)		Voltage (VDC)	Current (mA) MAX	
QA121-1503R3	12	10.8-13.2	20	+15/-3.0	±93	81
QA241-1503R3	24	21.6-26.4	10	+15/-3.0	±93	80

Package Dimensions: 19.50* 9.80* 12.50mm

◆ Typical features

- RS485-XXHSAV Baud rate up to 500000bps
- RS485-XXLSAV Baud rate up to 115200bps
- RSCAN-XXHSA/HSSV Baud rate up to 1Mbps
- RS485-XXHSA Bus support 256 nodes
- RSCAN-XXHSA Bus support 110 nodes
- RS485-XXXSA 2-ports isolated, RSCAN-XXHSA isolation volt. 2500VDC
- RSCAN-XXHSSV, RS485-XXXSSV isolation volt. 4000VDC
- Plastic case, Mini SMD/DIP packages
- Flame class UL94-V0, Mini SIP package
- Operating temperature from -40°C to +85°C
- Integrated with the isolated power converter
- Bus protection
- Additional circuit diagram is recommended for high EMC requirement



(P)RS485/CAN-XXL/HSA(V)

◆ Product List

Part No.	Input Volt.	Input Current	
	Range	Static current	Sending current
	(VDC)	(mA)	
RS485-3V3HSA	3.15-3.45	50	100
RS485-05HSA	4.75-5.25	40	80
RS485-3V3LSA	3.15-3.45	50	100
RS485-05LSA	4.75-5.25	40	80
RS485-3V3HSAV	3.15-3.45	50	100
RS485-05HSAV	4.75-5.25	40	80
RS485-3V3LSAV	3.15-3.45	50	100
RS485-05LSAV	4.75-5.25	40	80
PRSCAN-3V3HSA	3.15-3.45	40	100
PRSCAN-05HSA	4.75-5.25	30	80

Package Dimensions: 20.02*17.02*7.00 mm

RS485/CAN-XXXSSV

◆ Product List

Part No.	Input Volt.	Input Current	
	Range	Static current	Sending current
	(VDC)	(mA)	
RS485-3V3HSSV	3.15-3.45	40	130
RS485-05HSSV	4.75-5.25	50	130
RS485-3V3LSSV	3.15-3.45	40	130
RS485-05LSSV	4.75-5.25	50	130
RSCAN-3V3HSSV	3.15-3.45	30	60
RSCAN-05HSSV	4.75-5.25	40	70

Package Dimensions: 21.80*14.80*7.20 mm

RS485-XXXSAVC/XXHSAVE

◆ Product List

Part No.	Input Volt.	Input Current	
	Range	Static current	Sending current
	(VDC)	(mA)	
RS485-3V3HSAVC	3.15-3.45	50	100
RS485-05HSAVC	4.75-5.25	40	80
RS485-3V3LSAVC	3.15-3.45	50	100
RS485-05LSAVC	4.75-5.25	40	80
RS485-3V3HSAVE	3.15-3.45	50	100
RS485-05HSAVE	4.75-5.25	40	80

Package Dimensions: 20.00*17.00*7.00 mm

RS485-XXHSSVE

◆ Product List

Part No.	Input Volt.	Input Current	
	Range	Static current	Sending current
	(VDC)	(mA)	
RS485-3V3HSSVE	3.15-3.45	50	100
RS485-05HSSVE	4.75-5.25	40	80

Package Dimensions: 20.00*17.00*7.00 mm

PRSCAN-XXHSA

◆ Product List

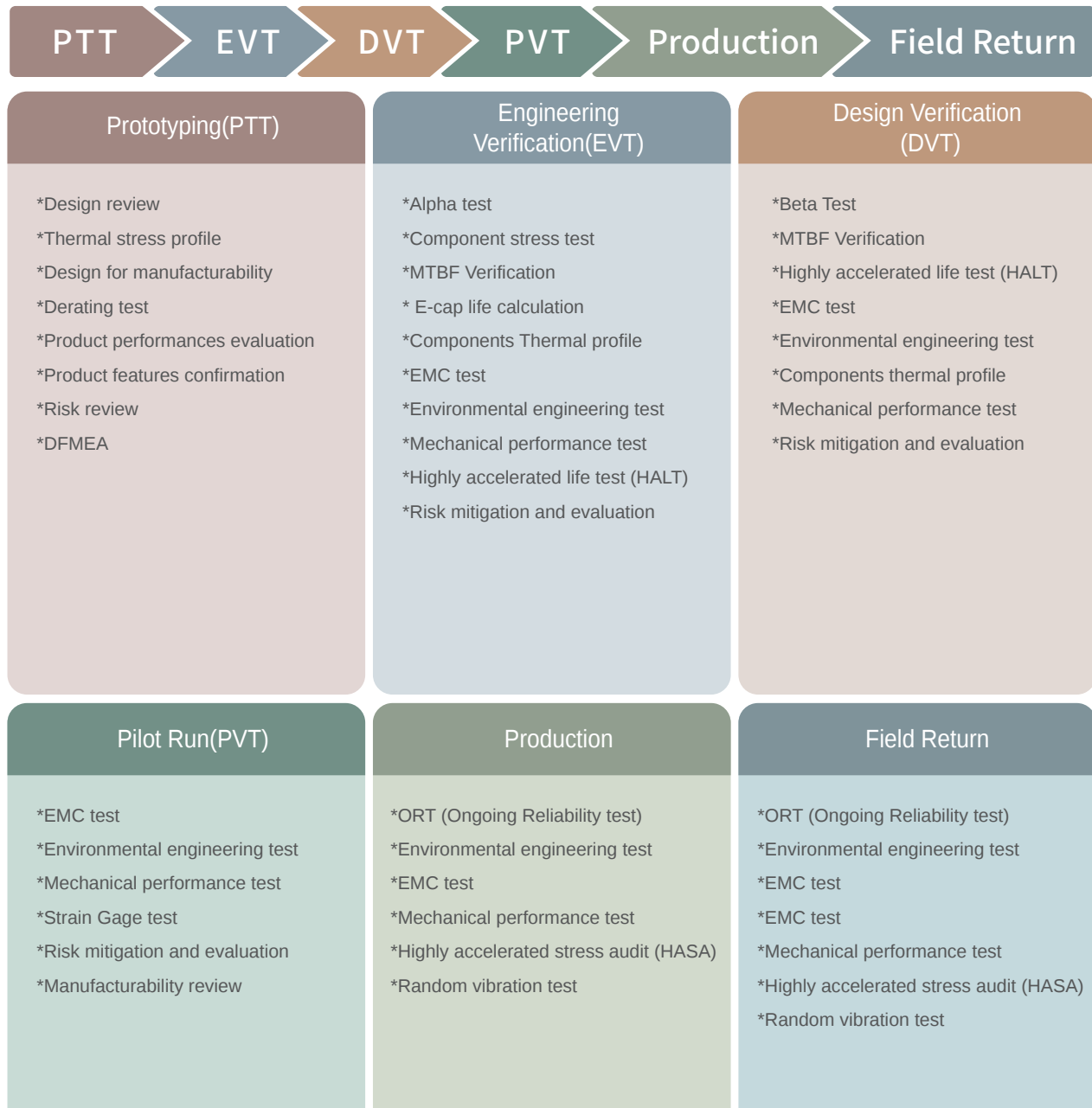
Part No.	Input Volt.	Input Current	
	Range	Static current	Sending current
	(VDC)	(mA)	
PRSCAN-3V3HSA	3.15-3.45	40	100
PRSCAN-05HSA	4.75-5.25	30	80

Package Dimensions: 20.02*17.02*7.00 mm

► Power Supply Reliability Test

Product Reliability is a systematic engineering subject that includes reliability design, reliability prediction, reliability analysis, reliability validation and reliability test which concerned with environmental, mechanical stress, climate, function, EMC and safety test, etc.

■ Design validation programs for in all stages of the product development



■ Standard

GB T2421~GB T2424;
IPC9592B;

MIL-HDBK-217/251/781;
Bellcore SR 332;

IEC60068;
IPC-A-610F;



Purpose

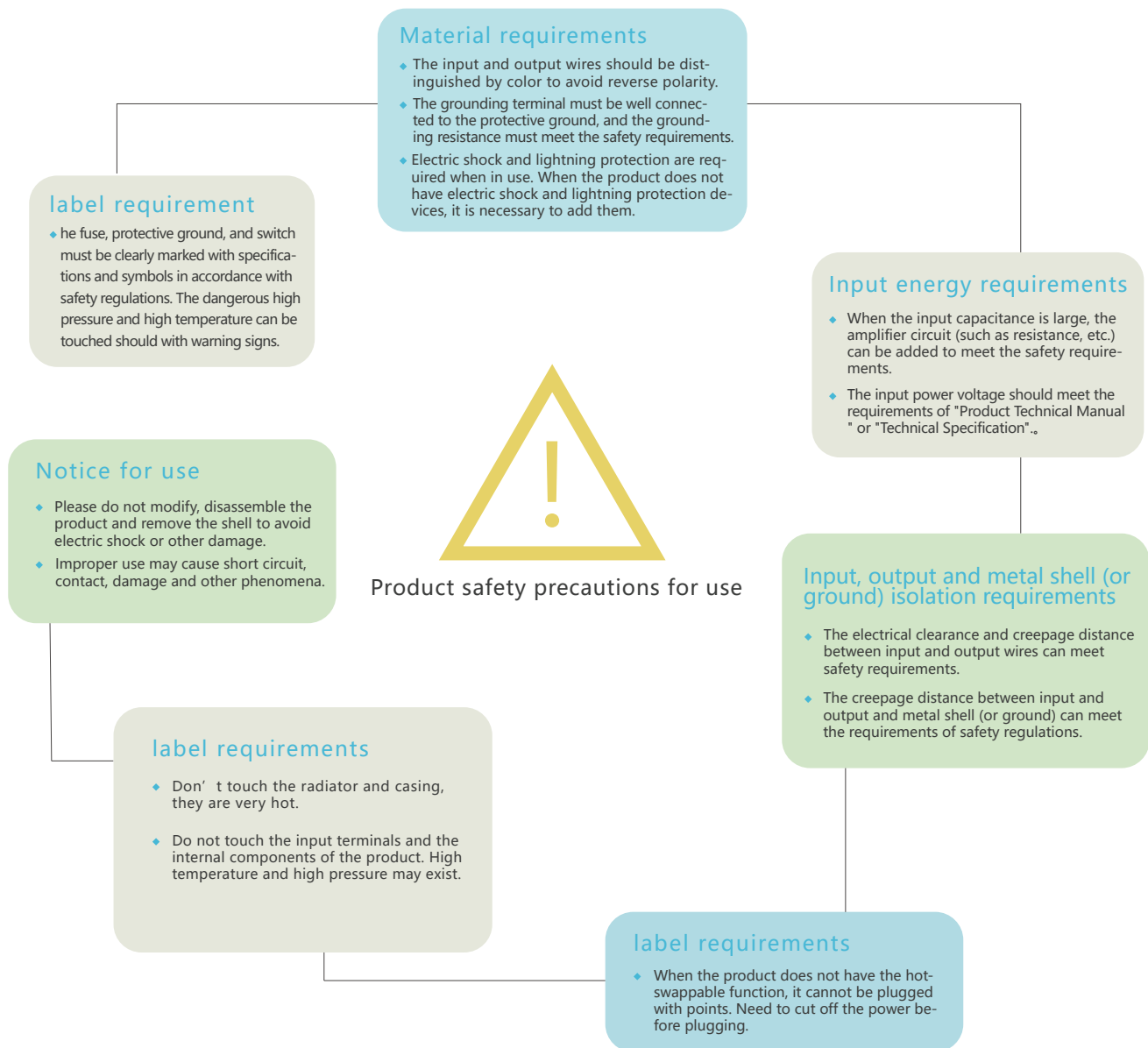
Prevent customer safety issues that may occur during the use of the product.

Application

AC/DC&DC/DC&Ring current series module power supply produced by Guangzhou Aipu Electron Technology Co., Ltd.

Content

Before designing and selecting/batch production, customers should make sure to carefully read all the contents of the relevant models in the "Product Technical Manual", design and use the product according to the requirements in the "Product Technical Manual".



Please contact us if you encounter problems during use.

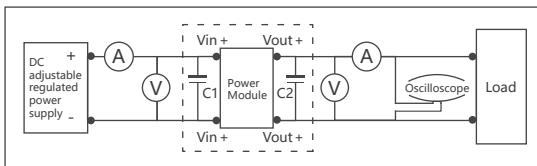
Tell: 86-20-84206763 E-mail:sales@aipu-elec.com

Power module test

After the power supply is selected, it is still very important to apply the electrical performance in the actual unit circuit. The product must be strictly tested before it can be used. Now take DC-DC as an example to introduce the general test method of module power supply. The test of AC-DC module is exactly the same in principle, so the description will not be repeated here.

1. The test uses the standard Kelvin four-terminal test method

As shown in figure:
test conditions: Greenhouse TA=25°C Humidity <75%.
Nominal input and rated load.



Components of model:

- a. DC adjustable regulated power supply: input voltage range is large enough
 - b. Ammeter A: accuracy is 0.001A
 - c. Voltmeter V: accuracy is 0.001V
 - d. Load resistance: Rated load: U^2/P
Light load: $10\%*(U^2/P)$
 - e. Connection: The smaller the line loss, the better. 1mm multi-strand copper wire is best to avoid excessive voltage drop.
- A: Test

To ensure high measurement accuracy, it is necessary to reduce errors caused by connecting wires. Too long and thin connecting wires and poor contact will cause a larger loop voltage drop and greatly reduce the load regulation rate of the power module. Especially when the load current is large, the distance between the output pin and each load should be shortened and increased. Connect the cross-sectional area of the wire to reduce the voltage drop caused by the impedance. Generally, the input of the DC-DC module cannot be reversed. Connect the input and output voltmeter to the module pins, and select a load that meets the power level, adjust the input voltage and load to the nominal value, and then measure.

B: Grounding

Improper grounding will lead to additional noise. For the measurement of ripple and noise, avoid other electrical appliances connected to the module through the power ground wire. It is recommended to use a single-channel probe to measure the output directly to avoid measurement errors caused by input and output common ground and external interference. (Refer to the figure "Ripple & Noise")

C: load

In order to obtain valid test data for safe measurement, it is necessary to ensure that the load is between 10-100% for constant voltage products, and the capacitive load cannot be greater than the value specified in the technical data to ensure more accurate voltage and ripple output; for wide-voltage products The 10% load test can be used to determine the quality, and then the accuracy test of the rated load. Refer to product technical data for specific external drawing.

2. Power module performance

After connecting the power module, the performance can be tested and judged to confirm whether the performance parameters meet the standard.

1) Output voltage accuracy:

Set the input voltage to the nominal value and the output to the rated load. The measured output voltage is denoted as VOUT; the nominal output value is denoted as VNOM.

Calculation formula:

$$\frac{V_{OUT}-V_{NOM}}{V_{NOM}} \times 100\%$$

For example, the regulated product FW1-12S12B has a nominal 12V output and a rated load of 144Ohm. The measured actual output voltage is 12.039V.

Then:

$$\frac{12.039VDC-12000VDC}{12.000VDC} \times 100\% = 0.3255\%$$

2) Linear voltage regulation rate:

At full load, adjust the input voltage within the allowable variation range, and measure the ratio of the difference between the maximum value and the minimum value of the output voltage.

$$\text{Linear regulation rate} = \frac{V_{OUTN}-V_{MDEV}}{V_{OUTN}} \times 100\%$$

At nominal voltage input and rated load, measured the output voltage is recorded as VOUTN;
At the upper limit of the input voltage and the rated load, measured the output voltage is recorded as VOUTH;
At the lower limit of input voltage and rated load, the measured output voltage is recorded as VOUTL;
VMDEV takes VOUTH, VOUTL takes the maximum deviation from VOUTN.

Constant voltage input isolated unregulated output series:

$$\text{Linear regulation rate} = \left| \frac{\Delta V_{OUT}}{\Delta V_{IN}} \right|$$

$$\Delta V_{OUT} = \frac{V_{OUT}(1+10\%)-V_{OUT}(1-10\%)}{V_{OUTNOM}} \times 100\%$$

$$\Delta V_{IN} = \frac{V_{IN}(1+10\%)-V_{IN}(1-10\%)}{V_{INNOM}} \times 100\%$$

formula:

Vin(1+10%)	Set the nominal value of input voltage +10% as the upper limit of its input voltage;
Vin(1-10%)	Set the nominal value of the input voltage -10% as the lower limit of the input voltage;
Vout(1+10%)	Under full load condition, the measured output voltage value when the input voltage is the upper limit;
Vout(1-10%)	Under full load condition, the measured output voltage value when the input voltage is the lower limit;
Vinnom	the rated value of the input voltage;
Voutnom	Under full load conditions, the measured output voltage value when the input voltage is at the rated value.

For example: take the constant voltage series NN1-05S05AN as an example, the output is connected to a 25 ohm constant resistance load, Input range: $\pm 10\%$ (4.5V~5.5V) Vin(1+10%)=5.5V Vin(1-10%)=4.5V; Vinnom=5V; Vout(1+10%) is measured as: 5.32V; Vout(1-10%) is measured as: 4.2V; Voutnom is measured as: 4.77V;

$$\Delta V_{OUT} = \frac{5.32V-4.2V}{4.77V} \times 100\% = 23.5\%$$

$$\Delta V_{IN} = \frac{5.5V-4.5V}{5V} \times 100\% = 20\%$$

$$\text{So the linear voltage regulation rate} = \left| \frac{\Delta V_{OUT}}{\Delta V_{IN}} \right| = 1.174$$

3) Load regulation rate:

When the input voltage is the rated value, connect 10% and 100% constant resistance loads respectively, and measure the difference between the output voltage at 10% load and 100% load and the rated value, and take the maximum difference from the rated value Calculation.

$$\text{load regulation rate} = \frac{V_{b1}(V_{b2})-V_{b0}}{V_{b0}} \times 100\%$$

Power Supply Test Instructions



In the formula:

Vb0—output voltage setting value;

Vb1—output voltage of the minimum value of output current;

Vb2—output voltage at rated output current.

Constant voltage input unregulated output series:

$$\text{Calculation formula: } \frac{V_{\text{OUTNL}} - V_{\text{OUTFL}}}{V_{\text{OUTFL}}} \times 100\%$$

VoutNL load is 10% of the measured output voltage value;

The measured output voltage value when the load of Vo ut FL is 100%, such as: take the constant voltage product B 05 05 XD- 1W as an example, the rated load is: $U^2/P = 25$ ohms, the load range is: 10 ~ 100 %, measured: Vo ut NL=5.29 V, Vout FL=4.77V

$$\text{Load regulation rate} = \frac{5.29V - 4.77V}{4.77V} \times 100\% = 10.9\%$$

4) Efficiency:

The ratio of output power to input power at nominal input and rated load.

$$\text{Calculation formula: } \frac{L_{\text{OUT}} \times V_{\text{OUT}}}{L_{\text{IN}} \times V_{\text{IN}}} \times 100\%$$

For example, the regulated product IB121 2LS-1W has a rated 12V input, and the measured output voltage is 12.039 V under full load; when the current is 8 3.3 mA, the input current is 1 15.0 mA.

Then:

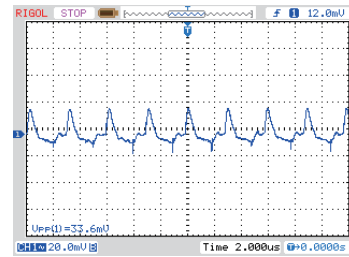
$$\frac{0.0833A \times 12.039V}{0.1150A \times 12.00V} \times 100\% = 73\%$$

5) Ripple and noise:

1、twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 47uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern. As shown below:

Note: Input terminal connect to power supply, output terminal connect to electronic load through jig plate, Use 30cm±2 cm sampling line, Power line selected from corresponding diameter wire with insulation according to the flow of output current.

Since the output terminal of the power supply contains a lot of high frequency harmonics, in order to measure accurately, remove the ground clamp of the oscilloscope, because it will absorb various high frequency noises like an antenna and interfere with the measurement results.



The clear and bright part of the waveform is ripple, and the vertical but not very clear part is noise:

The actual noise and ripple will vary depending on the circuit and external components. Due to the extremely high frequency of noise, most output circuits are not affected by noise.

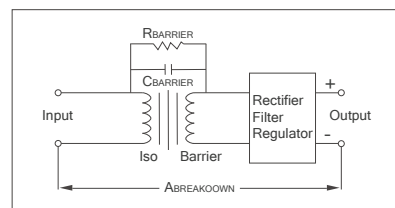
6) Starting time:

Because some special occasions require very high start-up time (for example: power distribution control system), generally no inductor is placed inside the module. Start-up time is the response delay time when the output reaches the target voltage value relative to the input after the input is turned on. Generally measured under the rated full load, external filters (including input and output capacitors) will greatly delay the start-up time, and the actual design should be weighed against the noise requirements. The constant pressure product adopts an open-loop design and starts slowly. For specific product and application questions, please apply for technical support services.

7) Isolation and insulation characteristics:

Isolation capability is a very important feature of power supply module. Input/output isolation can provide independent power supplies of different polarities to the load. It is often used to isolate the load from the power supply and the system in instrumentation, data processing and noise sensitive circuits. To prevent mutual interference, it is also used for personal safety isolation in industrial, power, and medical systems and explosion-proof in mines.

As shown in figure:



$$I_{\text{LEAKAGE}} = \frac{V_{\text{BREAKDOWN}}}{R_{\text{BARRIER}}} = 2\pi (60\text{Hz})(C_{\text{BARRIER}})(240V)$$

CBARRIER: isolation capacitor; the coupling capacitor between the input primary coil and the output secondary coil;
RBARRIER: Isolation resistance; the resistance between input and output is generally tested by adding 500 VDC;

I_{LEAKAGE}: Leakage current; current caused between input and output due to the existence of the isolation capacitor;

V_{BREAKDOWN}: Test voltage; here is 240VAC/6 0HZ; it can also be other values or noise voltage;

When is other values:

$$Z_f = \frac{1}{j2\pi f C_{\text{IS}}} \quad I_L = \frac{V_{\text{test}}}{Z_f}$$



CIS: CIS: isolation capacitance f: given value (test signal) Vtest: test signal voltage;

It can be seen from the above that a power module with low leakage, high noise immunity and high isolation must require isolation materials with very low coupling capacitance; the actual insulation test needs to follow the corresponding regulations and special instruments. The relevant isolation test parameters are: Insulation strength: add isolation voltage (peak of DC or AC) between input and output to test for 1 minute. Insulation resistance: add 500VDC between input and output, The measured insulation resistance between input and output is greater than 1 GOhm.

8) Remote control characteristics (only for models with remote control terminals):

1. Test purpose: To test the remote control terminal provided by the module to control the performance of the module on and off, it should be able to realize the remote control on and off normally.
2. Wiring diagram: wiring according to Figure 1

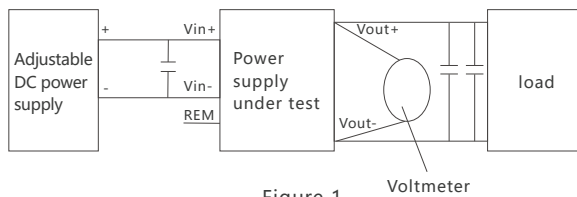


Figure 1

Note: 1) If the output has a Sense terminal, short-circuit Sense+ (S+) and Vout+, and short-circuit Sense- (S-) and Vout-.

2) Some modules are equipped with an enable terminal (REM terminal) at the input terminal, which is divided into high level and low level enable modes. If you want to use it, please connect to the level according to the product requirements.

3) Some modules require peripheral devices such as capacitors to be connected to the input and output terminals. For the value of this device, please refer to the product's corporate standard or user manual.

4) For non-isolated modules, all grounds should be unified.

3. Test method:

Under the conditions of rated input voltage and rated load, if the module is positive logic, the enable terminal REM is connected to high level or the module normally outputs when it is left floating. On the contrary, REM is connected to low level module without output; if the module is negative logic, then When the enable terminal REM is connected to low level, the module should output normally, On the contrary, the module has no output when REM is connected to high level or floating. (For the reference level, please refer to the product documentation)

Note: The logic characteristics of the REM floating should be tested and recorded separately during the test

9) Output voltage fine-tuning performance (only for those with adjustable output function)

1. Test description: Test the ability to adjust the output voltage through the given fine-tuning terminal of the module.
2. Wiring diagram: wiring according to Figure 2

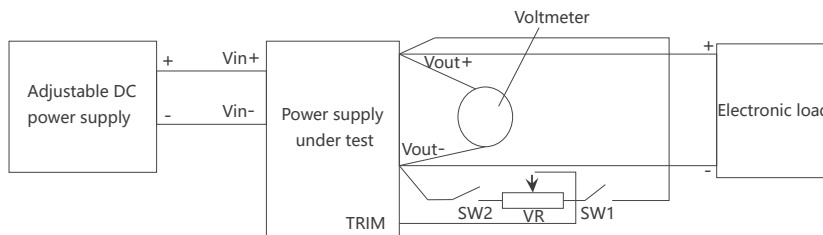


Figure 2

Note: The value of the potentiometer VR, different models have different values according to the instructions for use, and the rest of the external wiring is shown in the notes in Figure 1.

3. Test method:

- (1) Start the engine under rated input voltage and rated load.
- (2) Close SW 2, adjust VR until the voltmeter reading can exceed the upper limit of the regulated output adjustable range.
- (3) Close SW 1, adjust VR until the voltmeter reading can be less than the lower limit of the specified output adjustable range.

10) Temperature coefficient

1. Test purpose: test the percentage of output voltage change relative to the setting value and temperature when the ambient temperature changes.
2. Wiring diagram: The wiring diagram is shown in Figure 1, and the tested power module is placed in the high and low temperature box.
3. Test method:
 - (1) Test the output voltage V0 under the conditions of rated input voltage, rated load and ambient temperature T0 (25°C);
 - (2) Adjust the working temperature of the power supply to the upper limit T1, after stable operation (usually half an hour), test the output voltage V1 under this condition;
 - (3) Reduce the working temperature of the power supply to the lower limit T2, and after stable operation (usually half an hour), test the output voltage V2 under this condition;
 - (4) Calculate the temperature coefficient according to the following formula:



CIS: CIS: isolation capacitance f: given value (test signal) Vtest: test signal voltage;

It can be seen from the above that a power module with low leakage, high noise immunity and high isolation must require isolation materials with very low coupling capacitance; the actual insulation test needs to follow the corresponding regulations and special instruments. The relevant isolation test parameters are: Insulation strength: add isolation voltage (peak of DC or AC) between input and output to test for 1 minute. Insulation resistance: add 500VDC between input and output, The measured insulation resistance between input and output is greater than 1 GOhm.

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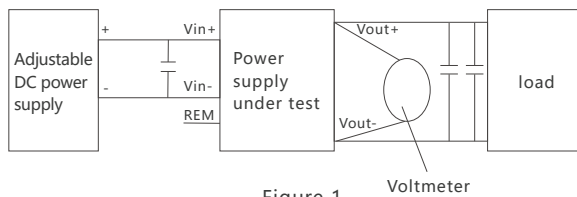


Figure 1

Note: 1) If the output has a Sense terminal, short-circuit Sense+ (S+) and Vout+, and short-circuit Sense- (S-) and Vout-.

2) Some modules are equipped with an enable terminal (REM terminal) at the input terminal, which is divided into high level and low level enable modes. If you want to use it, please connect to the level according to the product requirements.

3) Some modules require peripheral devices such as capacitors to be connected to the input and output terminals. For the value of this device, please refer to the product's corporate standard or user manual.

4) For non-isolated modules, all grounds should be unified.

3. Test method:

Under the conditions of rated input voltage and rated load, if the module is positive logic, the enable terminal REM is connected to high level or the module normally outputs when it is left floating. On the contrary, REM is connected to low level module without output; if the module is negative logic, then When the enable terminal REM is connected to low level, the module should output normally, On the contrary, the module has no output when REM is connected to high level or floating. (For the reference level, please refer to the product documentation)

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1. Test description: Test the ability to adjust the output voltage through the given fine-tuning terminal of the module.
2. Wiring diagram: wiring according to Figure 2

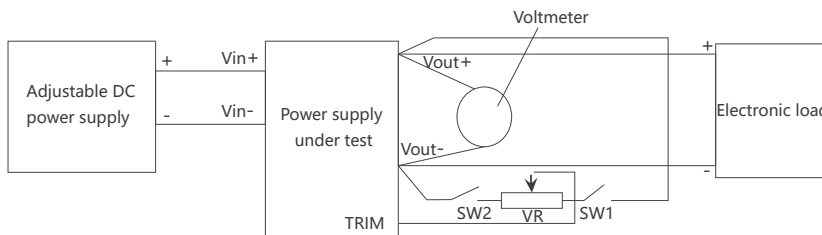


Figure 2

Note: The value of the potentiometer VR, different models have different values according to the instructions for use, and the rest of the external wiring is shown in the notes in Figure 1.

3. Test method:

- (1) Start the engine under rated input voltage and rated load.
- (2) Close SW 2, adjust VR until the voltmeter reading can exceed the upper limit of the regulated output adjustable range.
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10) Temperature coefficient

1. Test purpose: test the percentage of output voltage change relative to the setting value and temperature when the ambien temperature changes.
2. Wiring diagram: The wiring diagram is shown in Figure 1, and the tested power module is placed in the high and low temperature box.
3. Test method:
 - (1) Test the output voltage V0 under the conditions of rated input voltage, rated load and ambient temperature T0 (25°C);
 - (2) Adjust the working temperature of the power supply to the upper limit T1, after stable operation (usually half an hour), test the output voltage V1 under this condition;
 - (3) Reduce the working temperature of the power supply to the lower limit T2, and after stable operation (usually half an hour), test the output voltage V2 under this condition;
 - (4) Calculate the temperature coefficient according to the following formula:



16) Low temperature charged aging test

1. Test purpose: Test the ability of the power module to work normally under low temperature conditions.
2. Wiring diagram: Wire as shown in Figure 1, and put the module under test in the low temperature box.
3. Test method:
 - (1) Initial inspection: Under normal atmospheric conditions, perform visual inspection and output voltage test on the sample.
 - (2) Test: Connect the sample according to the input and output wires and place it in the experiment box. When the temperature reaches the required value, turn on the power.
 - (3) Under the rated load condition, the input voltage is nominal value, maximum value, and minimum value each conducted 2 hours of testing. During the experiment, the machine is turned on and off repeatedly, and the module should start normally.
 - (4) Under the minimum load condition, the nominal input voltage is tested for 2 hours. During the experiment, the module is turned on and off repeatedly and the module should start normally. Test the output voltage and ripple before each experimental condition changes.
 - (5) Final inspection: Take out the sample, under normal conditions, after 2 hours of recovery, perform visual inspection and output voltage and ripple test on the sample.



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