6S8W10_1.5RP series

6W - Single Output - Wide Input - Isolated & Regulated DC-DC Converter

DC-DC Converter 6 Watt

- 10:1 Wide Input voltage range
- High Efficiency up to 88%
- Regulated output types
- Low ripple and noise
- Internal SMD construction
- 1.5kVDC isolation
- Operating temperature: -40°C to +85°C
- Industry standard pinout
- Continuous short circiut protection with current foldback

The 6S8W10_1.5RP series is an excellent performance and high power density design. Wide 10:1 input voltage ranges: 6V-60V

It features efficiency up to 88%, 1500VDC isolation, operating temperature of -40°C to +85°C, input under-voltage protection, output over-current, short circuit protection, which make them widely applied in medical care, industrial control, electric power, instruments and communication fields.

SHORT CIRCUIT PROTECTED

100% RoHS compliant

Common specifications

Short circuit protection: (9~60VDC)	Continuous, Recovers automatically after fault condition is removed
Operation temperature range:	-40°C~+85°C
Storage humidity range:	95% RH, Non Condensing
Operation case temperature:	+110°C MAX.
Switching Frequency:	200kHz TYP, Full load, nominal input
MTBF (MIL-HDBK 217F @25°C):	1500 K hours
Cooling:	Free air convection
Case material:	DAP
Weight:	4.5g TYP.
Dimensions:	21.8 x 9.2 x 11.1 mm

Input specifications

Item	Test condition	Min	Typ	Max	Units
Voltage Tolerance				10:1	VDC
Surge Voltage (100ms max)				76	VDC
Input current	LOAD:0%			5	mA
Start-up Time				6	mA
Starting voltage	Nominal input voltage & Nominal load		20		ms
CTRL	• Module on • Module off	0 ~ 0.8Vdc or open circuit 2.5 ~ 12Vdc			
Input filter	Capacitor				

Output specifications

Item	Test condition	Min	Typ	Max	Units
Voltage Tolerance	100% full load			±3	%
Line regulation	Regulated			±0.5	%
Load regulation	Regulated			±0.8	%
Ripple & Noise	BW=DC To 20MHz			300	mVp-p
Temperature Coefficient	100% Load		±0.02	±0.03	%/°C
Over-current Protection	9~60VDC	110		250	%Io
Over-voltage Protection	9~60VDC	110		160	%Vo

EMC specifications

EMI	EN55032 (see Fig.1 for recommended circuit)
EMS	EN55024
ESD	EN61000-4-2 Contact ±4kV
Radiated immunity	EN61000-4-3 10V/m
Fast transient	EN61000-4-4 ±2kV
Surge	EN61000-4-5 ±2kV

Example:
6S8W10_3005S1.5RP
6 = 6 Watt; S8 = SIP8; W10 = 10:1 wide input range; 30 = 6-60Vin;
05 = 5Vout; S = Single Output; 1.5 = 1500VDC isolation;
R = Regulated Output; P = Short Circuit Protection

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Input / Output 0.5mA/60Sec	1500			VDC
Isolation resistance	500VDC, input to output	1000			MΩ

GAPTEC-Electronic GmbH & Co. KG
sales@gaptec-electronic.com – www.gaptec-electronic.com

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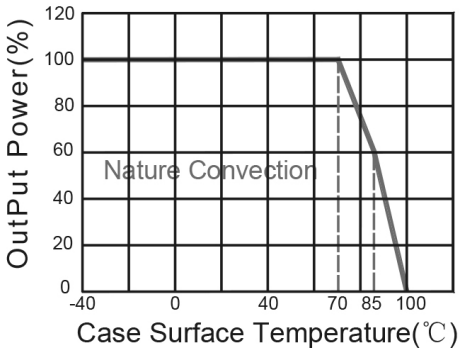
DC-DC Converter

Product Selection Guide

Part Number	Input Voltage [VDC, Range]	Output Voltage [VDC]	Output Current [mA]	Efficiency [%, typ.]	Capacitive Load [max.]
6S8W10_3003S1.5RP	6-60	3.3	1600	85	1000
6S8W10_3005S1.5RP	6-60	5	1200	88	1000
6S8W10_3009S1.5RP	6-60	9	667	85	820
6S8W10_3012S1.5RP	6-60	12	500	87	680
6S8W10_3015S1.5RP	6-60	15	400	87	680
6S8W10_3024S1.5RP	6-60	24	250	87	330

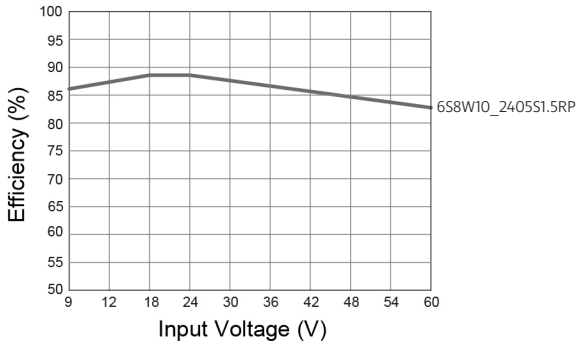
Typical characteristics

Temperature Derating Graph

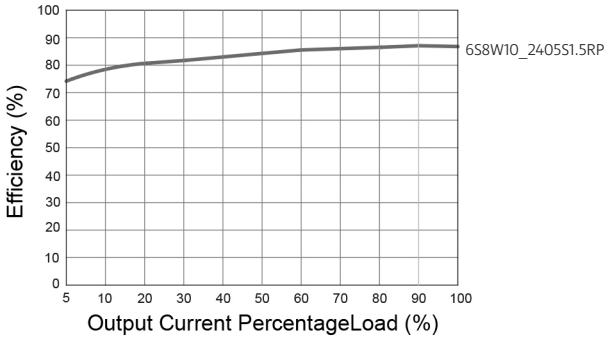


Efficiency

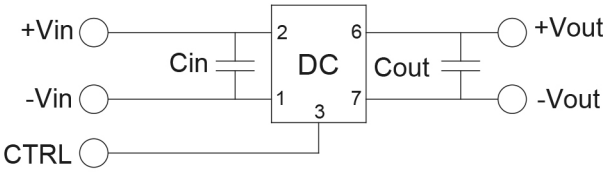
Efficiency Vs Input Voltage (Full Load)



Efficiency Vs Output Load (Vin=24V)



Recommended Test Circuit



To make sure the product work at perfect operation status with full loading external capacitor is necessary and it is recommended to use high.

Vin	Cin	Single Vout	Cout
24VDC	10μF/100V	3.3VDC	100μF/16V
		5VDC	100μF/16V
		9VDC	100μF/16V
		12VDC	100μF/25V
		15VDC	100μF/25V
		24VDC	100μF/25V

EMC solution recommended circuit

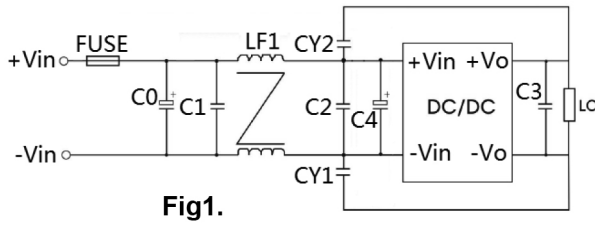
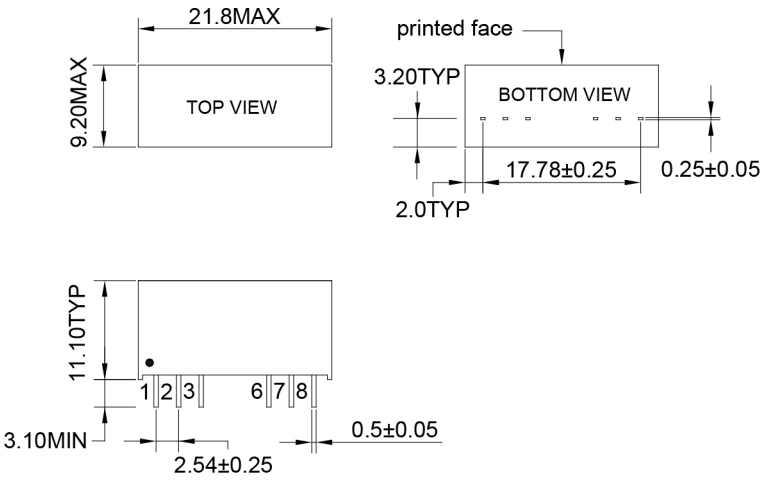


Fig1.

EMC recommended circuit value table		
EMI	C0C4	330μF/50V
EMI	C1C2	10μF /100V
EMI	CY1CY2	1nF/2kV
EMI	C3	Recommended Test Circuit
EMI	LF1	470μH*2

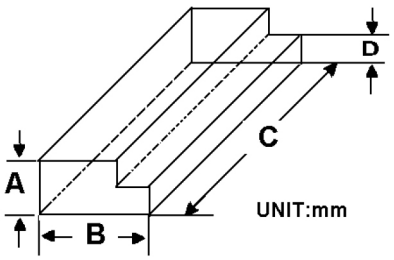
Mechanical dimensions



PIN Connection	
PIN	Single
1	-Vin
2	+Vin
3	Ctrl-Control input can (can be left open)
6	+Vout
7	-Vout
8	NC

UNIT:mm TYP tolerances are ±0.5

Packaging



Size(mm)			
A	B	C	D
12.0	28.55	550	6.00

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sales@gaptec-electronic.com – www.gaptec-electronic.com