



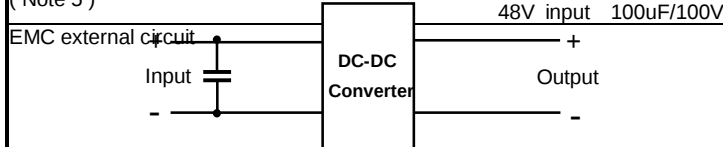
- PACKAGE, 1.10 x 0.63 x 0.31 INCH
- NO EXTERNAL INPUT AND OUTPUT CAPACITOR NEEDED
- 2:1 WIDE INPUT VOLTAGE RANGE
- LOW RIPPLE & NOISE
- FIVE-SIDED SHIELD
- OVER CURRENT PROTECTION
- SHORT CIRCUIT PROTECTION
- LONG LIFE WITHOUT ELECTROLYTIC CAPACITOR

The TEA1P5 series offer 1.5 watts of output power from a 1.10 x 0.63 x 0.31 inch package without derating to 50°C and without external input/output capacitor. The TEA1P5 series with 2:1 wide input voltage of 4.5-9, 9-18, 18-36 and 36-75VDC and features 500VAC of isolation, short-circuit protection. The safety meets to EN60950 and UL1950. All models are particularly suited to telecommunications, industrial, mobile telecom and test equipment applications.

TECHNICAL SPECIFICATION

All specifications are typical at nominal input, full load and 25°C otherwise noted

OUTPUT SPECIFICATIONS			
Maximum output power			1.5 Watts
Voltage accuracy	Full load and nominal Vin		± 2%
Minimum load			0%
Line regulation	LL to HL at Full Load		0.2%
Load regulation	10% to 100% FL		0.5%
Ripple and noise	50MHz bandwidth		120mVp-p, max
Maximum temperature drift			±0.02% / °C
Transient response recovery time	25% load step change		500uS, typ
Short circuit protection		Continuous, automatic recovery	
Over current protection			180%, typ.
INPUT SPECIFICATIONS			
Input voltage range	5V nominal input		4.5 – 9VDC
	12V nominal input		9 – 18VDC
	24V nominal input		18 – 36VDC
	48V nominal input		36 – 75VDC
Input filter			L-C filter
Input surge voltage 100mS max	5V nominal input		15VDC
	12V nominal input		36VDC
	24V nominal input		50VDC
	48V nominal input		100VDC
OUTPUT VOLTAGE ADJUSTMENT TERMINAL(Vset) (Note1)			
Model number	Open	-Vout shorted	+Vout shorted
XXS33	3.3V	3.67V	2.84V
XXS05	5V	6V	4.3V
XXS12	12V	15V	-
XXD12	±12V	±15V	-
Model number	Open	-Vout connected with resistance (2)	+Vout connected with resistance (2)
XXS33	3.3V	3.3 to 3.67V (3-1)	3.3 to 2.84V (3-2)
XXS05	5V	5 to 6V (3-3)	5 to 4.3V (3-4)
XXS12	12V	12 to 15V (3-5)	-
XXD12	±12V	±12 to ±15V (3-6)	-

GENERAL SPECIFICATIONS			
Efficiency			See table
Isolation voltage	Input to Output Input to Case Output to Case		500 Vac
Isolation resistance	Input to Output Input to Case Output to Case	DC500V	50M ohms
Isolation capacitance			300 pF,max
Safety standard pending		IEC60950, J60950, UL60950, EN60950	
Switching frequency	Full load to No load		100 to 1500 KHz
Case material			Metal case
Base material			None
Weight			8.0g (0.28oz)
Dimension			1.10 x 0.63 x 0.31 Inch (28.0 x 16.0 x 7.8 mm)
MTBF (Note 4)			650Fit (1500000hrs, 100% Load)
ENVIRONMENTAL SPECIFICATIONS			
Operating temperature range (with derating)			-20°C to +70°C
Storage temperature range			-40°C to +85°C
Cooling			Nature convection
Thermal shock			MIL-STD-810D
Vibration	At no operation, 10-55-10Hz (sweep for 15min.) amplitude 1.5mm constant (maximum 9G X, Y, Z 2hrs each)		
Shock			100G
Operating humidity range			20% to 95% RH
Storage humidity range			20% to 95% RH
EMC CHARACTERISTICS			
Meet EN55022 classes A recommend circuit with external capacitor filter at input (Note 5)	5V input		220uF/16V
	12V input		220uF/25V
	24V input		100uF/50V
	48V input		100uF/100V
EMC external circuit 			



**POWER MATE
TECHNOLOGY CO.,LTD.**

1.5WATTS OUTPUT DC-DC CONVERTER

Model Number	Input Range	Output Voltage	Output Voltage Range	Output Current	Input Current ⁽⁶⁾	Eff ⁽⁷⁾ (%)	Capacitor Load max ⁽⁸⁾
TEA1P5-05S33	4.5 – 9 VDC	3.3 VDC	2.84 – 3.67 VDC	400 mA	426 mA	66	1650 uF
TEA1P5-05S05	4.5 – 9 VDC	5 VDC	4.3 – 6 VDC	300 mA	469 mA	68	750 uF
TEA1P5-05S12	4.5 – 9 VDC	12 VDC	12 – 15 VDC	125 mA	455 mA	70	350 uF
TEA1P5-05D12	4.5 – 9 VDC	±12 VDC	±12 – ±15 VDC	±60 mA	450 mA	68	±120 uF
TEA1P5-12S33	9 – 18 VDC	3.3 VDC	2.84 – 3.67 VDC	400 mA	167 mA	70	1650 uF
TEA1P5-12S05	9 – 18 VDC	5 VDC	4.3 – 6 VDC	300 mA	181 mA	73	750 uF
TEA1P5-12S12	9 – 18 VDC	12 VDC	12 – 15 VDC	125 mA	176 mA	75	350 uF
TEA1P5-12D12	9 – 18 VDC	±12 VDC	±12 – ±15 VDC	±60 mA	174 mA	73	±120 uF
TEA1P5-24S33	18 – 36 VDC	3.3 VDC	2.84 – 3.67 VDC	400 mA	84 mA	70	1650 uF
TEA1P5-24S05	18 – 36 VDC	5 VDC	4.3 – 6 VDC	300 mA	88 mA	75	750 uF
TEA1P5-24S12	18 – 36 VDC	12 VDC	12 – 15 VDC	125 mA	88 mA	75	350 uF
TEA1P5-24D12	18 – 36 VDC	±12 VDC	±12 – ±15 VDC	±60 mA	85 mA	75	±120 uF
TEA1P5-48S33	36 – 75 VDC	3.3 VDC	2.84 – 3.67 VDC	400 mA	42 mA	70	1650 uF
TEA1P5-48S05	36 – 75 VDC	5 VDC	4.3 – 6 VDC	300 mA	44 mA	75	750 uF
TEA1P5-48S12	36 – 75 VDC	12 VDC	12 – 15 VDC	125 mA	44 mA	75	350 uF
TEA1P5-48D12	36 – 75 VDC	±12 VDC	±12 – ±15 VDC	±60 mA	43 mA	75	±120 uF

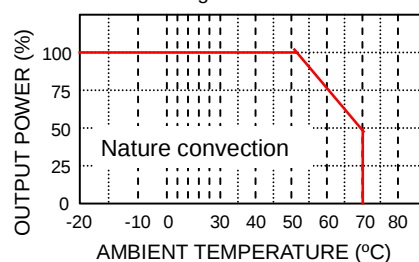
Note

- The follow output voltage can be outputted by connecting this terminal to an output + or – terminal. Unless the output voltage is adjusted, this terminal should be open.
- In addition, the voltage can be adjusted not by shorting these terminals, but by connecting them to resistances as shown below.
- Arithmetic expression connected resistance: R (KΩ)
3-1 $V_o = (3.3 \cdot R + 36.7) / (R + 10)$ 3-2 $V_o = (3.3 \cdot R + 36.7) / (R + 12.92)$
3-3 $V_o = 2.5 \cdot [2 + 2.7 / (R + 6.8)]$ 3-4 $V_o = 2.5 \cdot [2 - 2.7 / (R + 9.5)]$
3-5 $V_o = 2.5 + 9.5 \cdot (R + 10.9) / (R + 8.2)$ 3-6 $V_o = 2.5 + 22 \cdot (R + 12.7) / (R + 10)$ (Between two outputs)
- Belcore TR-NWT-000332. Case1:50% Stress, temperature at 40°C.
(Ground fixed and controlled environment)
- The filter capacitor recommended use "CHEMICON" KMF series or equivalent impedance at 0.16 ~ 0.33Ω (100KHz 20°C)
- Maximum value at nominal input voltage and full load.
- Typical value at nominal input voltage and full load.
- Test by minimum Vin and constant resistor load.

PIN CONNECTION

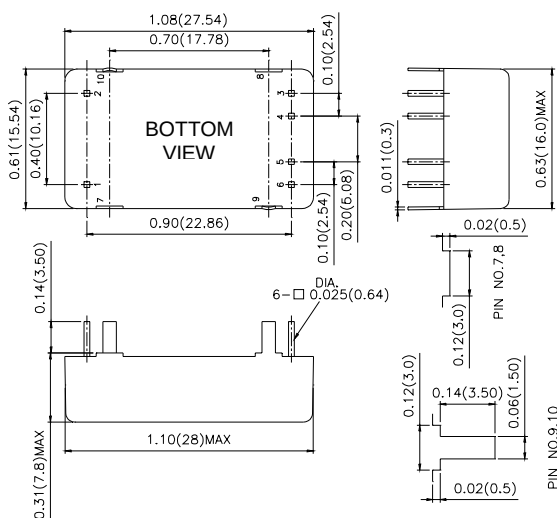
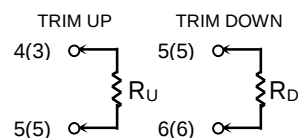
PIN	SINGLE	DUAL
1	+ Vi	+ Vi
2	- Vi	- Vi
3	NC	- Vo
4	- Vo	COM
5	Vset	Vset
6	+ Vo	+ Vo

Derating Curve



EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by using the method shown below.
() for dual output trim



ALL DIMENSIONS IN INCHES (mm)
PIN PITCH TOLERANCE ±0.014(0.35)