



0.75T8A1_1.5RP series

0.75W - DC-DC converter - Fixed Input - Isolated & Regulated

DC-DC Converter

0.75 Watt

- ⊕ Fixed input voltage, isolated & regulated output, power 0.75W
- ⊕ High efficiency up to 75%
- ⊕ Small SMD package
- ⊕ International standard pin out

- ⊕ Isolation voltage 1500VDC
- ⊕ Operating temperature: -40°C to +85°C
- ⊕ Plastic case, meet to UL94 V-0 standard

Introducing our 0.75T8A1_1.5RP series fixed input voltage, isolated, and regulated output power supply with a power rating of 0.75W. It boasts high efficiency of up to 75% and comes in a small SMD package with an international standard pin-out. With an isolation voltage of 1500VDC and an operating temperature range from -40°C to +85°C, it ensures reliable performance. The plastic case meets the UL94 V-0 standard, providing enhanced safety and durability.



Common specifications	
Short circuit protection	Continuous, self-recovery
Switching frequency	260 kHz (typ.)
Operating temperature	-40°C - +85°C (with derating)
Storage temperature	-55°C - +125°C
Reflow temperature	Peak temperature Tc ≤250°C, max. time is 60s for temperature above 217°C
Case temperature rise	25°C (typ.) within temperature derating curve
Pin soldering temperature	300°C (max.) 10 seconds at a distance of 1.5mm from case
Relative humidity	5-95% RH (non-condensing)
MTBF (MIL-HDBK-217F@25°C)	35 x 10 ⁵ hours
Case material	Black flame-retardant, heat-resistant plastic (UL94 V-0)
Weight	1.4g (typ.)

Input specifications					
Item	Operating condition	Min	Typ	Max	Units
Input overshoot voltage	5VDC Input	-0.7		9	VDC
	12VDC Input	-0.7		18	VDC
	24VDC Input	-0.7		30	VDC
Input filter	Capacitor filter				

Example:
0.75T8A1_0512S1.5RP
 0.75 = 0.75Watt; T8 = SMT8; A1 = Series; 05 = 5Vin; 12 = 12Vout; S = Single Output; 1.5 = 1.5kVDC isolation; R = Regulated; P = Short Circuit Protection

Output specifications					
Item	Operating condition	Min	Typ	Max	Units
Output power		0.07		0.75	W
Output voltage accuracy	Nominal input, full load		±2	±3	%
Load regulation	10%-100% load			±3	%
Line regulation	Input voltage change ±1%			±0.25	%
Ripple & noise*	Nominal input, full load, 20MHz bandwidth		35	80	mVp-p
Temperature drift coefficient	100% load			±0.03	%/°C

Note: *Ripple & noise is tested by twisted pair method.

Isolation specifications					
Item	Operating Conditions	Min	Typ	Max	Units
Isolation voltage	Test 1min, leakage current ≤0.5mA	1500			VDC
Isolation capacitor	Input-output, 100kHz/0.1V		20		pF

1. If the product is operated under the min. required load, the product performance cannot be guaranteed to comply with all performance indexes in this datasheet;
2. The maximum capacitive load is tested under nominal input voltage range and full load condition;
3. Unless otherwise specified, data in this datasheet are tested under conditions of Ta = 25°C, humidity <75% when inputting nominal voltage and outputting rated load (pure resistance load);
4. All index testing methods in this datasheet are based on our Company's corporate standards.
5. We can provide customized product service;

EMC specifications			
EMC	CE	CISPR32/EN55032	CLASS B(see EMC recommended circuit)
EMC	RE	CISPR32/EN55032	CLASS B(see EMC recommended circuit)
EMC	ESD	IEC/EN61000-4-2	Air±8kV, Contact±6kV perf.Criteria B

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Product Selection Guide

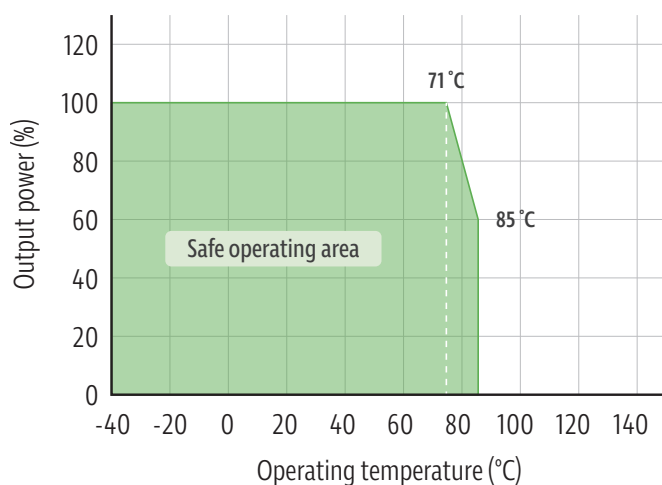
Approval	Model	Input Voltage Nominal (VDC)	Input Voltage Range (VDC)	Input Voltage (Vo) (VDC)	Input Current Max./Min. (Io) (mA)	Input Current(mA) Nominal Voltage Full load (typ.)	Input Current(mA) Nominal Voltage No load (typ.)	Max. Capacitive Load (uF)	Ripple & Noise Max. (mVp-p)	Efficiency (%)@full load, nominal input voltage (Min.)	Efficiency (%)@full load, nominal input voltage (Typ.)
	0.75T8A1_0503S1.5RP	5	4.75 - 5.25	3.3	200/20	200	6	2400	80	67	70
	0.75T8A1_0505S1.5RP	5	4.75 - 5.25	5	150/15	205	6	2400	80	70	73
	0.75T8A1_0512S1.5RP	5	4.75 - 5.25	12	62/7	186	8	560	80	72	75
	0.75T8A1_1203S1.5RP	12	11.4 - 12.6	3.3	200/20	86	8	2400	80	67	70
	0.75T8A1_1205S1.5RP	12	11.4 - 12.6	5	150/15	83	8	2400	80	70	73
	0.75T8A1_1212S1.5RP	12	11.4 - 12.6	12	62/7	83	8	560	80	72	75
	0.75T8A1_2403S1.5RP	24	22.8 - 25.2	3.3	200/20	45	8	2400	80	67	70
	0.75T8A1_2405S1.5RP	24	22.8 - 25.2	5	150/15	41	8	2400	80	70	73
	0.75T8A1_2412S1.5RP	24	22.8 - 25.2	12	62/7	41	8	560	80	72	75

Note:

In order to ensure that the module can work efficiently and reliably, when in use, the minimum output load cannot be less than 10% of the rated load. If the power you need is really small, please connect a resistor in parallel at the output end, the recommended resistance is equivalent to 10% of the rated power.

Product characteristic curve

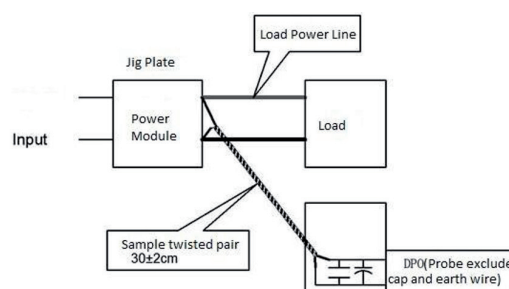
Temperature derating graph



Ripple & noise test: (twisted pair method 20MHz bandwidth)

Test Method:

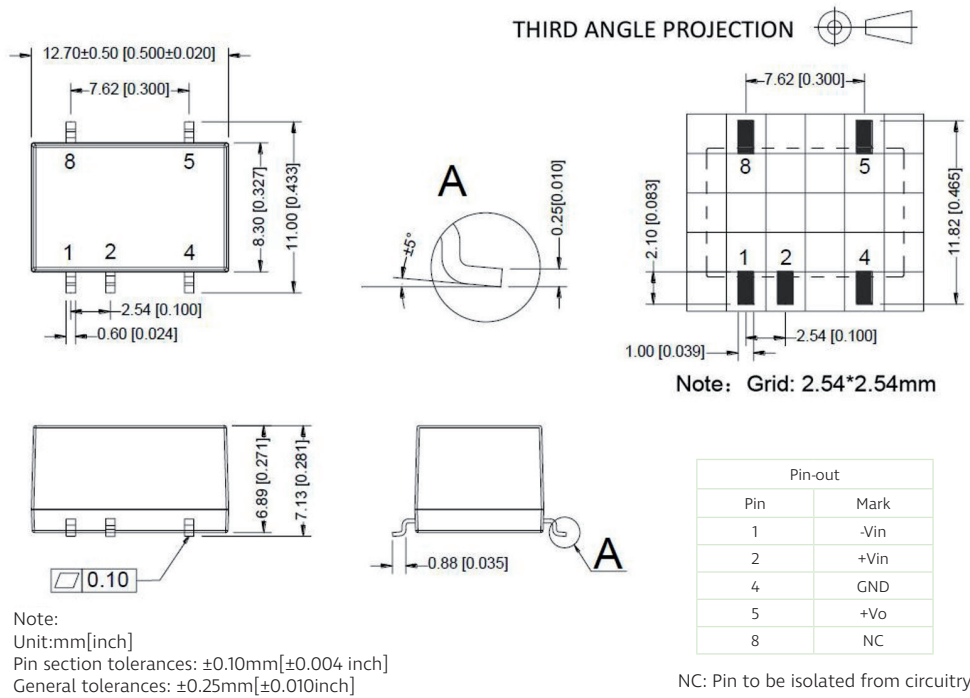
- 2# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.
- Input terminal connect to power supply, output terminal 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.



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Standard packing dimensions

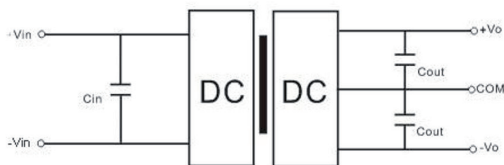


Typical application circuit

Single output



Dual output



1. Output load requirements

- a. In order to ensure the converter can work reliably with high efficiency, the minimum load should not less than 10% rated load when it is used. If the needed power is indeed small, please parallel a resistor at the output side, the resistance equal to 10% nominal load.
- b. The maximum capacitive load is tested under nominal input full load, and cannot exceed the maximum capacitive load of output terminal under operation, otherwise it will cause it difficult to start up and damage the product.

2. Recommended circuit

In order to ensure the input/output ripple and noise decreased, capacitor filter net could be connected to input and output terminal, application circuit as below photo 1; choosing suitable filter capacitor is very important, start-up problems may be caused by too large capacitance. To ensure the modules running safely and reliably, the recommended capacitive load values as shown in Table 1.

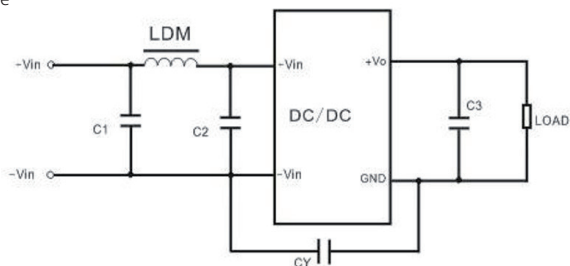
Vin (VDC)	Cin	Single Vout (VDC)	Cout (μF)	Dual Vout (VDC)	Cout (μF)
5	10 μF/16V	3.3	10 μF/16V	±3.3	4.7 μF/16V
12	2.2 μF/25V	5	10 μF/16V	±5	4.7 μF/16V
15	2.2 μF/25V	9	2.2 μF/25V	±9	2.2 μF/25V
24	1 μF/50V	12	2.2 μF/25V	±12	1 μF/25V
		15	1 μF/25V	±15	1 μF/16V
		24	1 μF/50V	±24	0.47 μF/50V

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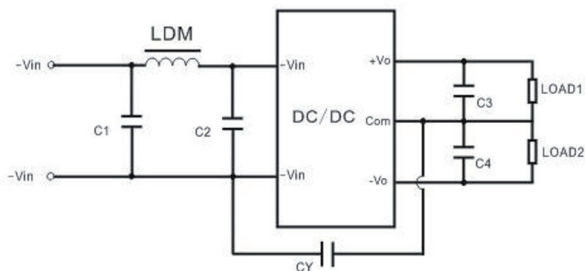
EMC recommended circuit

Single



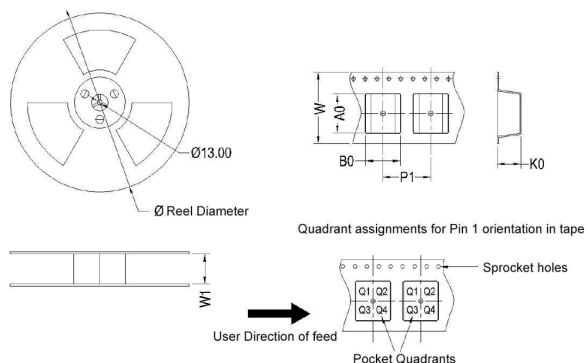
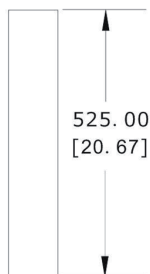
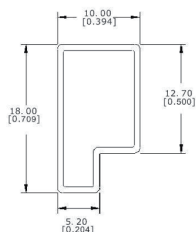
Input voltage		5VDC	12/15/24VDC
EMI	C1/C1	4.7 μ F/16V	4.7 μ F/50V
	CY	270pF/6kVDC	270pF/6kVDC
	C3/C4	Refer to Cout specs according to table 1	
	LDM	6.8 μ H	6.8 μ H

Dual



Input voltage		5VDC	12/15/24VDC
EMI	C1/C1	4.7 μ F/16V	4.7 μ F/50V
	CY	270pF/6kVDC	270pF/6kVDC
	C3/C4	Refer to Cout specs according to table 1	
	LDM	6.8 μ H	6.8 μ H

Packing information



Note:

Unit:mm(inch)

General tolerance: ± 1.50 [± 0.059]

Single tube packing qty: 39pcs

Carton packing qty: 3120pcs

Size of single tube: 525 x 18 x 10mm

Size of carton: 542 x 110 x 155mm

Device	Package type	Pin	SPQ	Reel diameter (mm)	Reel Width (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	PIN1 Quadrant
0.75T8A1_XXXXS1.5RP	SMD	5	500	330	24.5	13.1	11.7	7.5	16.0	24	Q1

Packing method: Tube

Packing method: Tape and reel (500pc per reel)