

## 2T8A2\_3UP series

2W - Single Output DC-DC Converter - Isolated & Unregulated

### DC-DC Converter

2 Watt

- ⊕ 8-Pin SMD package
- ⊕ No-load input current as low as 5mA
- ⊕ Continuous short-circuit protection
- ⊕ High Efficiency up to 89%
- ⊕ Unregulated output types
- ⊕ 3kVDC isolation
- ⊕ Operating temperature: -40°C to +105°C
- ⊕ Industry standard pinout
- ⊕ Design adheres to IEC62368, UL62368, EN62368

Introducing our latest 2T8A2\_3UP series in a 8-Pin SMD package, designed for high efficiency up to 89% and featuring a no-load input current as low as 5mA. This unit offers continuous short-circuit protection, unregulated output types, and 1.5kVDC isolation. It operates reliably within a temperature range of -40°C to +105°C and follows industry-standard pinout.

Additionally, the design adheres to IEC62368, UL62368, and EN62368 standards, ensuring top-notch safety and performance.



Common specifications	
Short circuit protection	Continuous
Operation temperature	-40°C ~+105°C
Storage temperature	-55°C ~+125°C
Humidity	95 %RH (Non Condensing)
MTBF: (MIL-HDBK-217F@25°C)	3,500,000 Hours
Hot plug	
Case material	DAP
Switching frequency	Full load, nominal input @5V Vin 215 KHz Full load, nominal input @other Vin 250 KHz
Dimensions	12.7 x 7.6 x 6.25 mm (Others)
Weight	1.2g
Cooling	Free air Convection

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Voltage Range	Vo,Io Nom		±10		%
Input filter	Capacitor				

#### Example:

#### 2T8A2\_0509S3UP

2 = 2Watt; T8 = SMT8; A2 = Pinning; 05 = 5Vin; 09 = 9Vout; S = Single Output; 3 = 3kVDC; U = Unregulated Output; P = Short Circuit Protection

Output specifications					
Item	Test condition	Min	Typ	Max	Units
Voltage Tolerance	100% full load			±5	%
Line regulation	For 1.0% of Vin			1.2	%
Load regulation	5V (10% To 100% F.L)		8	15	%
	9V (10% To 100% F.L)		6	10	
	12V (10% To 100% F.L)		5	10	
	15V (10% To 100% F.L)		4	10	
Ripple & Noise*	BW=DC To 20MHz		75	150	mVp-p

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Insulation resistance	500VDC	3000			MΩ
Isolation capacitance	Input-output, 100KHz/0.1V		20		pF

EMC specifications					
EMI	CE	CISPR32/EN55032 CLASS B (see Fig. 1 for recommended circuit)			
EMI	RE	CISPR32/EN55032 CLASS B (see Fig. 1 for recommended circuit)			
EMS	ESD	IEC/EN61000-4-2 Air ±8kV, Contact ±6kV perf. Criteria B			

## 2T8A2\_3UP series

2W - Single Output DC-DC Converter - Isolated & Unregulated

### Product Selection Guide - Single output

Approval	Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA) Max./Min.	Full Load Efficiency (%) Min./Typ.	Capacitive Load (μF)Max.
	2T8A2_0305S3UP	3.3	5	400	85	2400
	2T8A2_0309S3UP	3.3	9	223	87	820
	2T8A2_0312S3UP	3.3	12	167	87	470
	2T8A2_0315S3UP	3.3	15	133	88	220

Approval	Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA) Max./Min.	Full Load Efficiency (%) Min./Typ.	Capacitive Load (μF)Max.
	2T8A2_0505S3UP	5	5	400	85	2400
	2T8A2_0509S3UP	5	9	223	87	820
	2T8A2_0512S3UP	5	12	167	87	470
	2T8A2_0515S3UP	5	15	133	88	220

Approval	Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA) Max./Min.	Full Load Efficiency (%) Min./Typ.	Capacitive Load (μF)Max.
	2T8A2_0905S3UP	9	5	400	85	2400
	2T8A2_0909S3UP	9	9	223	87	820
	2T8A2_0912S3UP	9	12	167	87	470
	2T8A2_0915S3UP	9	15	133	88	220

Approval	Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA) Max./Min.	Full Load Efficiency (%) Min./Typ.	Capacitive Load (μF)Max.
	2T8A2_1205S3UP	12	5	400	85	2400
	2T8A2_1209S3UP	12	9	223	87	820
	2T8A2_1212S3UP	12	12	167	87	470
	2T8A2_1215S3UP	12	15	133	88	220

Approval	Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA) Max./Min.	Full Load Efficiency (%) Min./Typ.	Capacitive Load (μF)Max.
	2T8A2_1505S3UP	15	5	400	85	2400
	2T8A2_1509S3UP	15	9	223	87	820
	2T8A2_1512S3UP	15	12	167	87	470
	2T8A2_1515S3UP	15	15	133	88	220

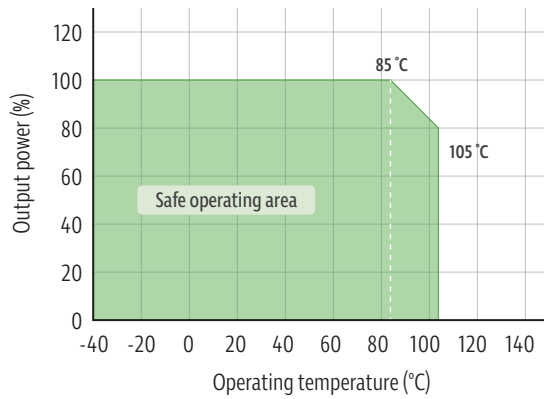
Approval	Model	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA) Max./Min.	Full Load Efficiency (%) Min./Typ.	Capacitive Load (μF)Max.
	2T8A2_2405S3UP	24	5	400	85	2400
	2T8A2_2409S3UP	24	9	223	87	820
	2T8A2_2412S3UP	24	12	167	87	470
	2T8A2_2415S3UP	24	15	133	88	220

## 2T8A2\_3UP series

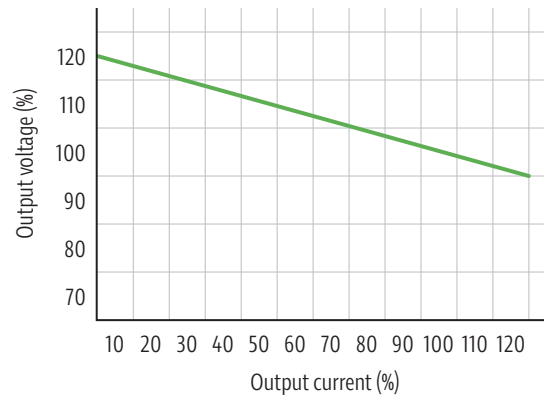
2W - Single Output DC-DC Converter - Isolated & Unregulated

### Typical characteristics

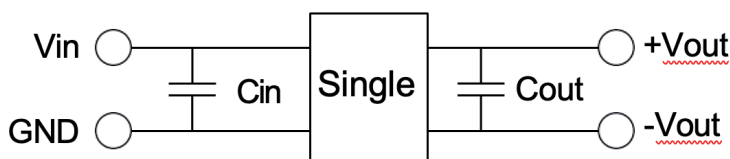
Temperature derating graph



Tolerance envelope graph



### Recommended Test Circuit



Vin	Cin	Single Vout	Cout
5VDC	4.7μF/25V	5VDC	10μF/16V
12VDC	2.2μF/25V	9VDC	2.2μF/16V
15VDC	2.2μF/25V	12VDC	2.2μF/25V
24VDC	1μF/50V	15VDC	1μF/25V

### EMC (CLASS B) compliance circuit

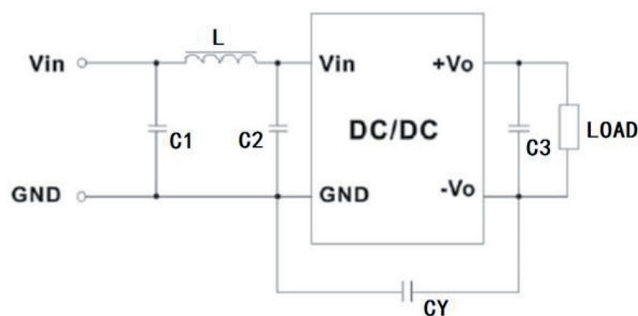


Fig. 1

EMC recommended circuit value table

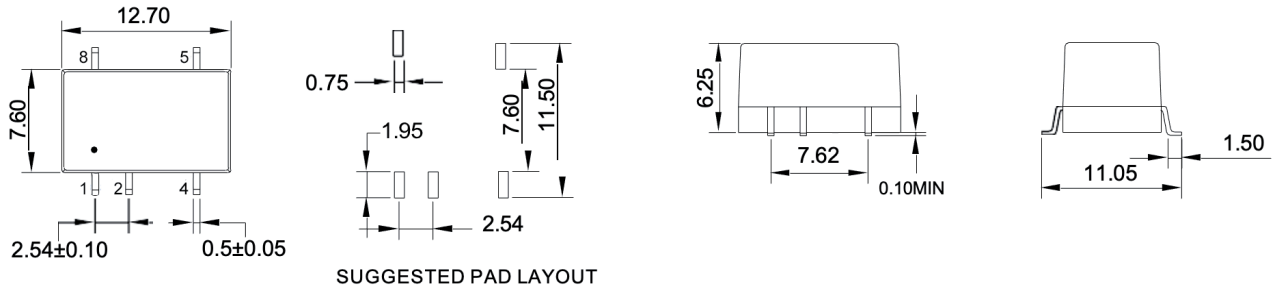
EMI	C1	4.7μF /50V
EMI	C2	4.7μF /50V
EMI	CY	1nF/4kV
EMI	C3	Recommended Test Circuit
EMI	L	6.8μH

## 2T8A2\_3UP series

2W - Single Output DC-DC Converter - Isolated & Unregulated

### Mechanical dimensions

Others



UNIT: mm Unless otherwise specified, all tolerances are  $\pm 0.25$

PIN Connection						
PIN	1	2	4	5	8	Other
(Single)	-Vin	+Vin	-Vout	+Vout	NC	NO PIN