



0.5T8CE_1UP Series

0.5W - Single Output DC-DC Converter - Fixed Input - Isolated & Unregulated

DC-DC Converter

0.5 Watt

- ⊕ Small footprint
- ⊕ Miniature SMD package style
- ⊕ High efficiency of 78%
- ⊕ 1000VDC isolation
- ⊕ Temperature range: -40°C ~ +105°C
- ⊕ Industry standard pinout
- ⊕ Low temperature rise
- ⊕ Internal SMD construction
- ⊕ No external component required
- ⊕ RoHS compliance

The 0.5T8CE_1UP series is specially designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is fixed (voltage variation $\leq \pm 10\%$)
- 2) Where isolation is necessary between input and output (isolation voltage $\leq 1000\text{VDC}$)
- 3) Where the regulation of the output voltage and the output ripple noise are not demanding

Such as: digit circuit condition; normal low-frequency artificial circuit condition; relay drive circuit condition, etc.



Common specifications	
Short circuit protection:	continuous
Temperature rise at full load:	25°C TYP (Ta = 25°C)
Cooling:	Free air convection
Operation temperature range:	-40°C ~ +105°C
Storage temperature range:	-55°C ~ +125°C
Lead temperature	300°C MAX, 1.5mm from case for 10 sec
Storage humidity range:	< 95%
Case material:	DAP
MTBF (MIL-HDBK-217F@25°C):	>3,500,000 hours
Weight:	1.28g

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Output voltage accuracy			±5		%	
Line regulation	For Vin change of 1%		±1.2		%	
Load regulation	10% to 100% load			±10	%	
Temperature drift	100% full load			±0.03	%/°C	
Ripple & Noise*	20MHz Bandwidth		60	150	mVp-p	
Switching frequency	Full load, nominal input		100		KHz	

* Ripple and noise tested with "parallel cable" method. See detailed operation instructions at DC-DC Application Notes.

Input specifications						
Item	Test condition	Min	Typ	Max	Units	
Voltage tolerance				±10	%	

Example:

0.5T8CE_2415S1UP
0.5= 0.5Watt; T8= SMT8; CE= Series; 24= 24Vin; 15= 15Vout;
S= Single output; 1= 1kVDC; U= Unregulated output;
P= short circuit protection (SCP)

Isolation specifications						
Item	Test condition	Min	Typ	Max	Units	
Isolation voltage	Input to output (60sec/0.5mA)	1000			VDC	
Isolation resistance	Test at 500VDC	1000			MΩ	

Note:

1. Operation under minimum load will not damage the converter; However, they may not meet all specification listed.
2. Max. Capacitive Load tested at input voltage range and full load.
3. All specifications measured at Ta = 25°C, humidity < 75%, nominal input voltage and rated output load unless otherwise specified.
4. In this datasheet, all the test methods of indications are based on our corporate standards.

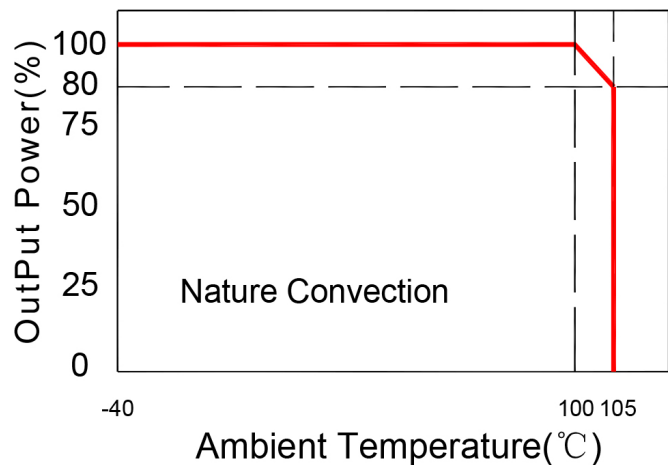
Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA]	Efficiency [%, typ]
0.5T8CE_2415S1UP	24	15	33	78

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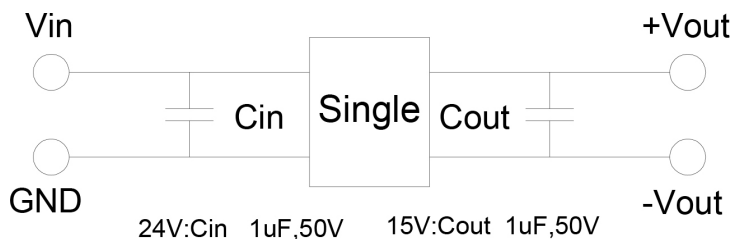
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Typical characteristics

Temperature derating graph

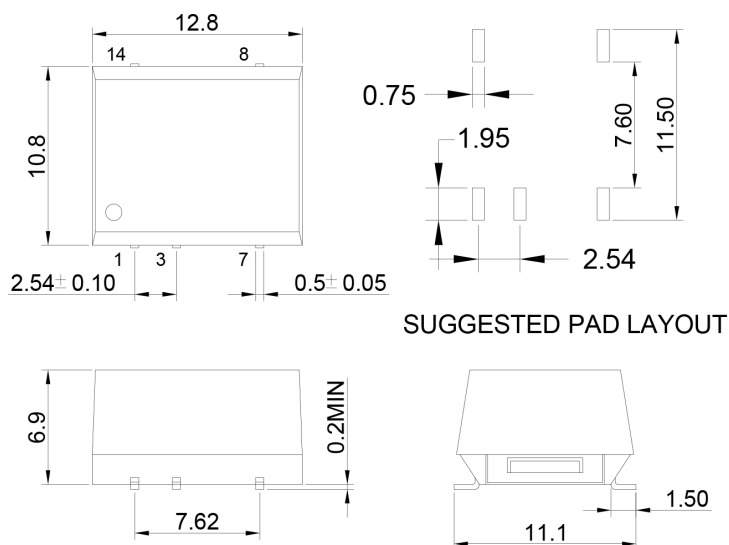


Recommended test circuit



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

Mechanical dimensions



PIN	Single
1	-Vin
3	+Vin
7	-Vout
8	+Vout
14	NC

UNIT:mm Unless otherwise specified,all tolerances are ± 0.25

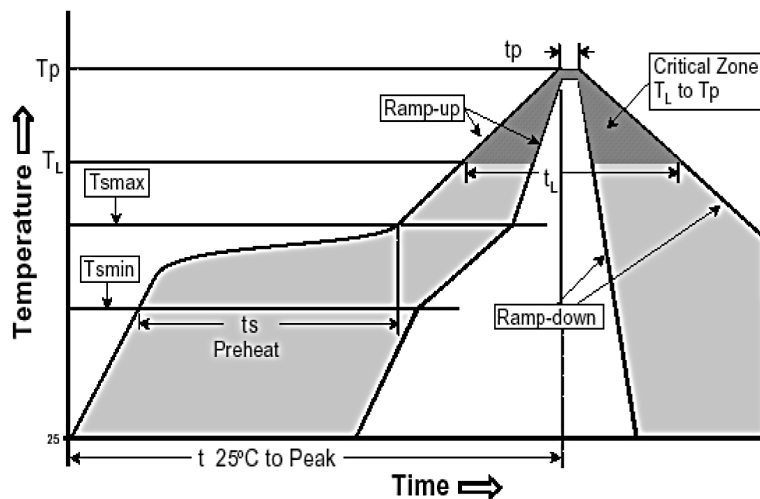
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RoHS compliant type

Our RoHS parts just can withstand IR Reflow peak temperature: 240degC +/-5degC as the following profile:

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (Ts max to Tp)	3°C /second max.
<u>Preheat</u> -Temperature Min (Ts min) -Temperature Max (Ts max) -Time (ts min to ts max)	150°C 200°C 60-180 seconds
<u>Time maintained above</u> -Temperature (TL) -Time (tL)	217°C 60-150 seconds
Peak/Classification Temperature (Tp)	240°C ±5°C
Time within 5°C of actual Peak Temperature (tp)	20-40 seconds
Ramp-Down Rate	6°C/seconds max.
Time 25°C to Peak Temperature	6 minutes max.

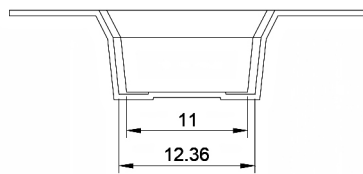
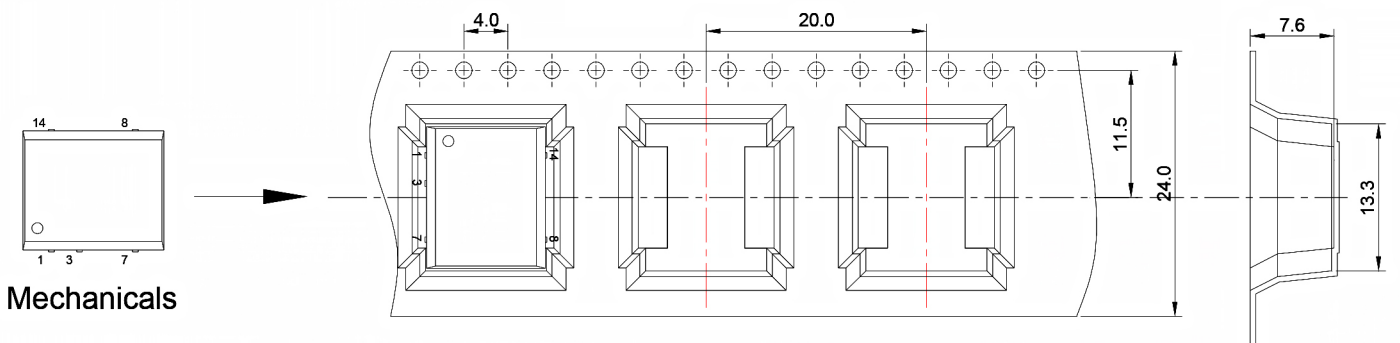


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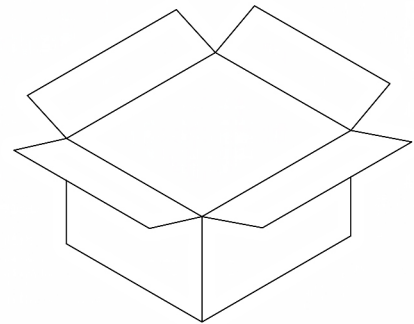
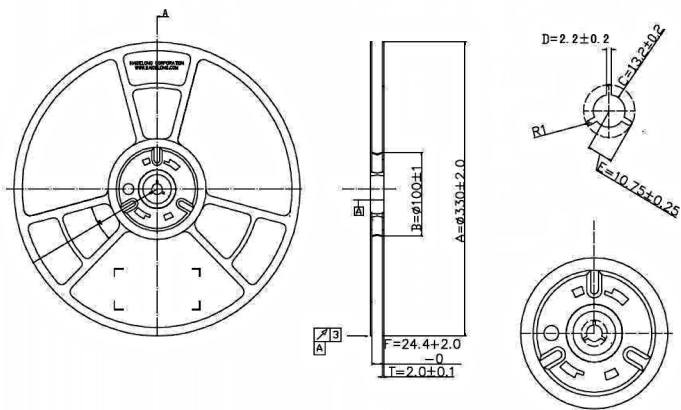
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Tape & Reel Packing Information:

1. Weight: 1.28 grams/pcs
2. Tape & Reel = 400 pcs
3. Outer carton unit: 4000pcs/box
4. Outer carton unit: 10T&R/box
5. Weight: 10.5kg per carton



Tape & Reel



Outer carton: 365x365x350mm