

FEATURES:

- 2 Watt SIP Package
- Efficiency to 84%
- 100% Burned In
- No-Load Input Current as Low as 5mA
- UL 94V-0 Package Material
- Custom Solutions Available
- Unregulated Output Types
- UL Recognized



2 Watt DC-DC Converter
ES3-05S052P3

2 Watt Single O/P
Isolated DC/DC Converter



Input Specifications

Input Voltage:	5Vdc
Input Voltage Range:	±10%

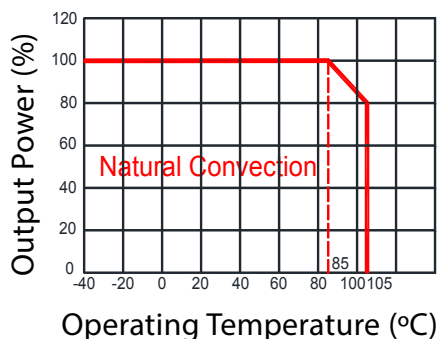
Output Specifications

Output Voltage:	5Vdc	
Output Voltage Accuracy:	±5%	@Vout=4.75~5.25Vdc@Vin=5Vdc
Output Current:	400mA	
Efficiency:	84% TYP	
Ripple / Noise:	75mVp-p TYP, 150mVp-p MAX	@20MHz bandwidth
Short Circuit Protection:	Continuous	
Line Regulation:	±1.2% TYP	@For 1.0% OF Vin
Load Regulation:	±15% MAX	@10% to 100% full load
Capacitive Load:	2400uF MAX	

General Specifications

Operating Temperature Range:		-40°C ~ +105°C
Storage Temperature:		-55°C ~ +125°C
Switching Frequency:		215KHz TYP
Humidity:		95% MAX
Isolation Voltage:		3000Vdc @Input to Output (60 sec/ 0.5mA)
Isolation Resistance:		1000MΩ MIN @ 500Vdc
Cooling:		Free air convection
MTBF:		>3,500,000 Hours MIL-HDBK-217F@25°C, Ground Benign
Case Material:		DAP
Weight:		1.2g TYP
EMI	CE	CISPR32/EN55032 CLASS B (see Fig.1 for recommended circuit)
	RE	CISPR32/EN55032 CLASS B (see Fig.1 for recommended circuit)
EMS	ESD	IEC/EN61000-4-2 Air ±8kV, Contact ±4kV perf. Criteria B

Temperature Derating Graph

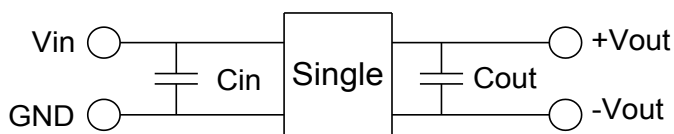


Part Number

ES3 - 05 S 05 2 P 3
A B C D E F G

A: Series
B: Input Voltage
C: Single Output (S)
D: Output Voltage
E: Output Power
F: Protection (P)
G: Isolation Voltage

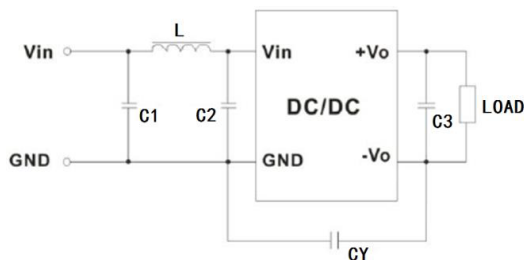
Recommended Test Circuit



Vin	Cin	Single Vout	Cout
5Vdc	4.7μF/25V	5Vdc	10μF/16V

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

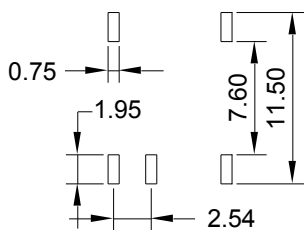
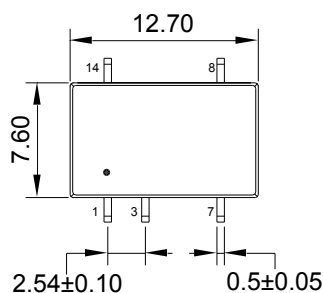
EMC (CLASS B) Compliance Circuit



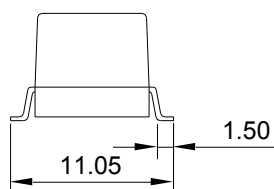
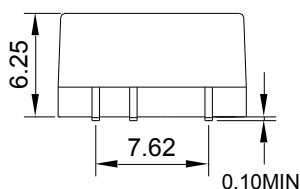
EMC Recommended Circuit Value Table

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

Outline Dimensions



SUGGESTED PAD LAYOUT



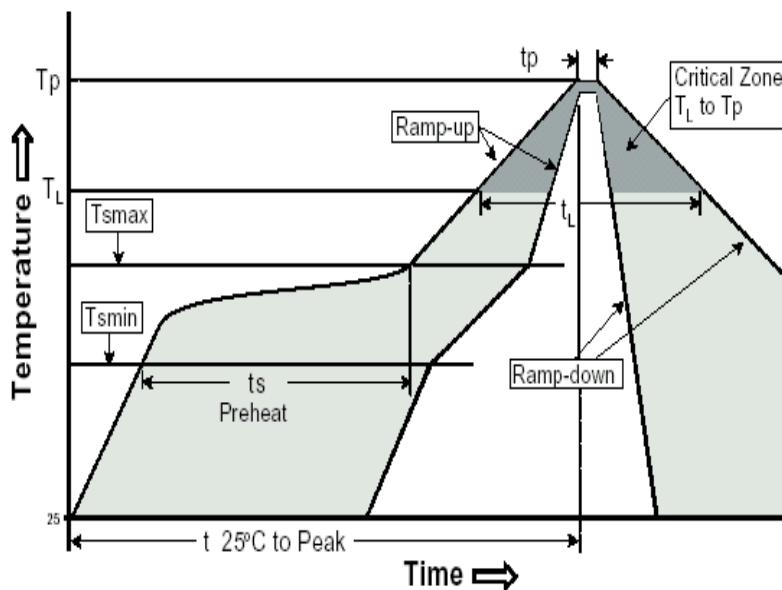
Pin	1	3	7	8	14
Single	-Vin	+Vin	-Vout	+Vout	NC

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

RoHS Compliant Type

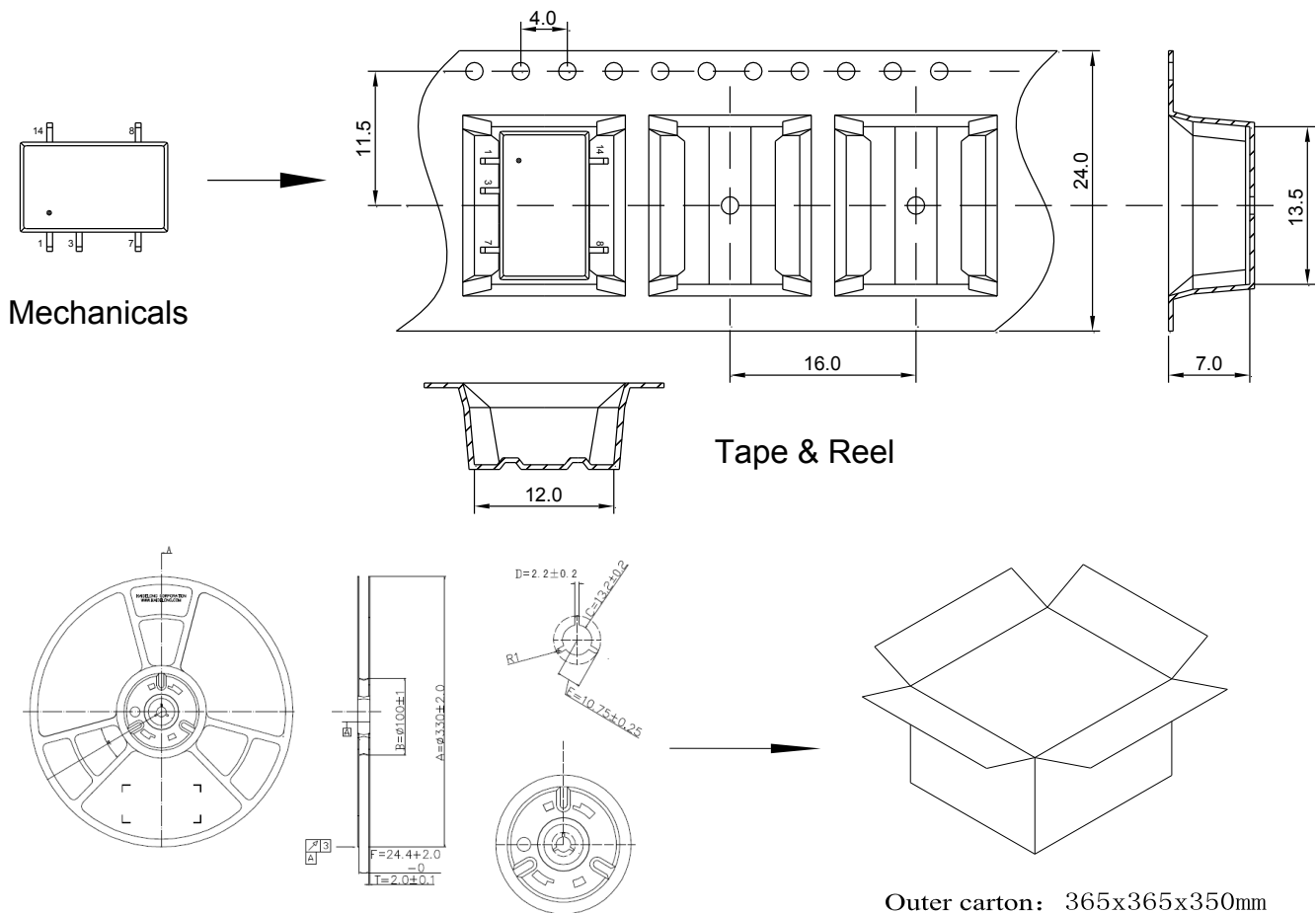
Our RoHS parts can withstand IR Reflow peak temperature: $240^{\circ}\text{C} \pm 5^{\circ}\text{C}$ as the following profile:

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T_s max to T_p)	$3^{\circ}\text{C} / \text{second max.}$
Preheat - Temperature Min (T_s min) - Temperature Max (T_s max) - Time (t_s min to t_s max)	150°C 200°C 60-180 seconds
Time Maintained Above: - Temperature (T_L) - Time (t_L)	217°C 60-150 seconds
Peak/Classification Temperature (T_p)	$240 \pm 5^{\circ}\text{C}$
Time within 5°C of Actual Peak Temperature (t_p)	20-40 seconds
Ramp-Down Rate	$6^{\circ}\text{C} / \text{seconds max}$
Time 25°C to Peak Temperature	6 minutes max.



Packaging Information

1. Weight: 1.2 grams/pcs
2. Tape & Reel: 350 pcs
3. Outer Carton Unit: 3500 pcs/box
4. Outer Carton Unit: 10 T&R/box
5. Weight: 9.5kg per carton



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Authorized Distributor

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