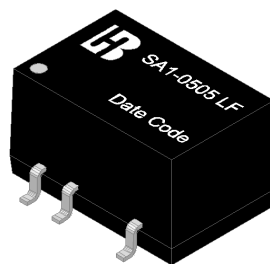


Features :

- 1.1. Low Ripple and Noise
- 1.2. Input / Output Isolation : 1000 Vdc
- 1.3. 100 % Burn-In
- 1.4. Net Weight : 1.5 g Typical
- 1.5. RoHS Converter Certified By SGS

**2. Input Specifications :**

- | | | |
|--------------------------|----------------------|--|
| 2.1. Input Voltage | : 4.5 – 5.5 Vdc | 5 Vdc \pm 10 % |
| 2.2. Max. Input Current | : 282 mA Max. | @ Vin = 5 Vdc and Output at Full Load. |
| 2.3. Quiescent Current | : 33 mA Typical | @ Vin = 5 Vdc and No Load. |
| 2.4. Input Ripple | : 100 mV Typical | @ Vin = 5 Vdc ,Output at Full Load ,No Input Electrolytic Capacitor and 20 MHz BW. |
| 2.5. Input Filter | : Internal Capacitor | |
| 2.6. Switching Frequency | : 100 KHz Typ. | @ Vin = 5 Vdc and Output at Full Load. |
| 2.7. Input Efficiency | : 71% Min. | @ Vin = 5 Vdc and 100 % Load. (75% Typical) |

3. Output Specification :

- | | | |
|------------------------------|------------------------------|--|
| 3.1. Output Voltage | : 5 Vdc | @ Vin = 5 Vdc and Output at Full Load. |
| 3.2. Output Voltage Accuracy | : \pm 5 % | |
| 3.3. Max. Output Current | : 200 mA | |
| 3.4. Min. Output Current | : 20 mA | |
| 3.5. Ripple | : 60 mVp-p Max. | @ 20 MHz BW |
| 3.6. Line Regulation | : 1.2 %/ 1.0 % Max. | See Note (1). |
| 3.7. Load Regulation | : 15 % Max. | See Note (2). |
| 3.8. Max. Capacitive Load | : 220 μ F | |
| 3.9. Temperature Coefficient | : \pm 0.02 %/ $^{\circ}$ C | |

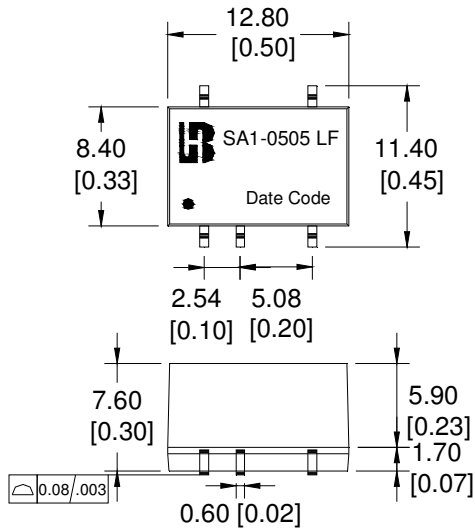
Note :

- (1). Line Regulation : Set output load to full load, Then adjust input voltage from 4.5 Vdc to 5.5 Vdc (10% change), The output voltage difference must be within 12% of the output at full load and nominal input.
- (2). Load Regulation : Set input voltage at 5 Vdc, Then changing the load current from 10 % to 100 % Max. Load. The output voltage difference must be within 15 % of the output at full load and nominal input.
- (3). All specification are typical at 25 $^{\circ}$ C unless otherwise state.

4. General Specification :

- | | | |
|---------------------------------|--|---|
| 4.1. Isolation Voltage | : 1000 Vdc | Test duration 60 Seconds / 0.5 mA |
| 4.2. Isolation Resistance | : 1000 M Ω Min. | @ 500 Vdc |
| 4.3. Operating Temperature (1) | : -40 $^{\circ}$ C ~ +85 $^{\circ}$ C | @ Ambient Temperature with Natural convention |
| 4.4. Operating Temperature (2) | : -40 $^{\circ}$ C ~ +95 $^{\circ}$ C | @ Case Surface Temperature |
| 4.5. Storage Temperature | : -55 $^{\circ}$ C ~ +125 $^{\circ}$ C | |
| 4.6. Humidity | : Up to 90 % | |
| 4.7. Cooling | : Free air convection | |
| 4.8. Case Type | : Non-Conductive Plastic | |
| 4.9. Safety Standard / Approval | : IEC /EN 60950-1 | |

5. Mechanical Dimension :

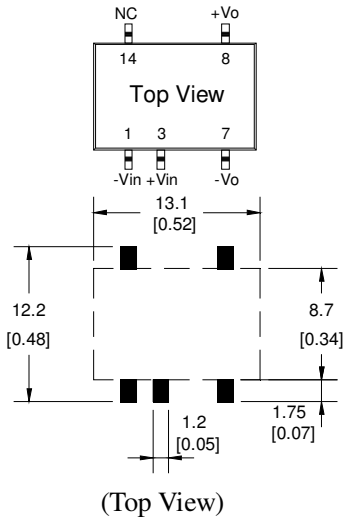


Units : mm (inch)
 Tolerance : 0.xx ± 0.25(0.xx ± 0.01)

Pin	1 KVdc - Single		Pin
1	-Vin	NC	14
3	+Vin	---	12
5	---		10
7	Vo (-)	Vo (+)	8

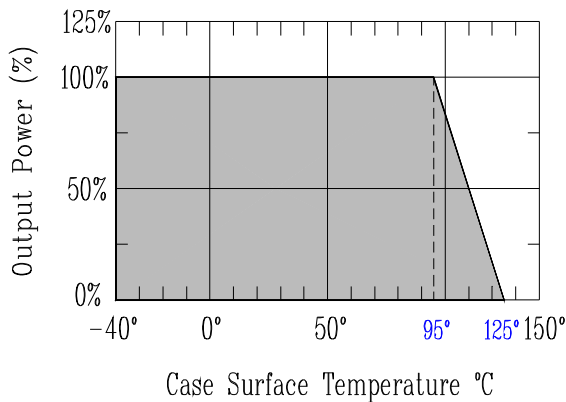
Note : "----" means Omitted

6. Recommended footprint details :

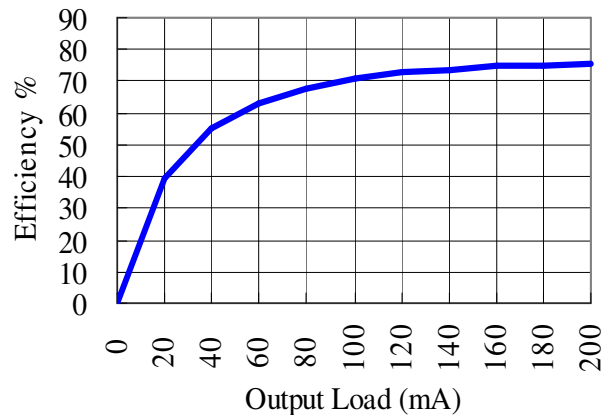


Units : mm (inch)
 Tolerance : 0.xx ± 0.25 (0.xx ± 0.01)

7. Power Derating Curve :



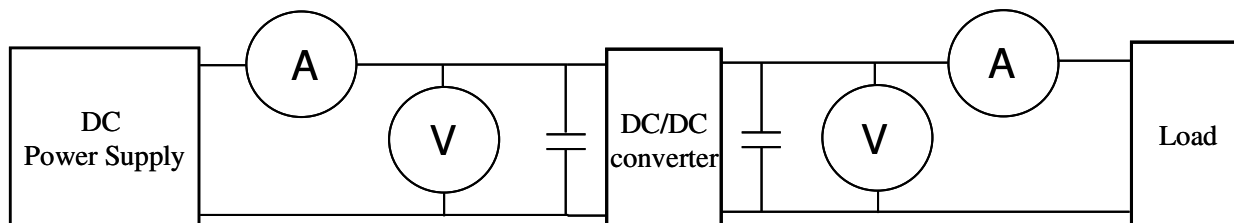
8. Efficiency & Output Load Chart :



Application note

Test Configurations :

All specifications are typical at nominal input, full load and 25°C unless otherwise stated.



⊙ DC Power Supply: It offers a wide voltage and current range precisely.

⊙ Current meter (A): Accuracy → 200μA ~ 200mA 4 ranges ±(0.2% rdg + 2 digits)
2000mA ~ 20A 2 ranges ±(0.3% rdg + 2 digits).

⊙ Voltage meter (V): Accuracy → ±(0.03% rdg + 4 digits).

⊙ Load: At full load.

⊙ Wires: The resistance of the wires must be small.

1. Input voltage range: Narrow input voltage range (±10%)、wide input voltage range (2:1 and 4:1)。

EX: Narrow input voltage range (±10%)

5VDC nominal input	→	4.5~5.5VDC
12VDC nominal input	→	10.8~13.2VDC
24VDC nominal input	→	21.6~26.4VDC

Wide input voltage range 2:1

5VDC nominal input	→	4.5~9VDC
12VDC nominal input	→	9~18VDC
24VDC nominal input	→	18~36VDC
48VDC nominal input	→	36~75VDC

Wide input voltage range 4:1 (W)

24VDC nominal input	→	9~36VDC
48VDC nominal input	→	18~75VDC

2. Input power :

$$P_{in} = V_{in} \times I_{in}$$

V_{in} : Input voltage

I_{in} : Input current

3. Output power :

$$P_{out} = V_{out} \times I_{out}$$

V_{out} : Output voltage

I_{out} : Output current

4. Efficiency :

$$\text{Efficiency} = \frac{P_{\text{out}}}{P_{\text{in}}} \times 100\%$$

P_{out}: Output powerP_{in}: Input power5. Voltage accuracy:

$$\frac{|V_{\text{out}} - V_{\text{out(nominal)}}|}{V_{\text{out}}} \times 100\%$$

V_{out} : Output voltageV_{out(nominal)} : Nominal output voltage6. Line regulation: (1) Wide input voltage range and regulated output voltage series.

$$\frac{|V_{\text{out(LL)}} - V_{\text{out(HL)}}|}{V_{\text{out(LL)}}} \times 100\%$$

LL: Low Line input voltage

HL: High Line input voltage

(2) Narrow input voltage range (±10%) and unregulated output voltage series.

$$\text{Line regulation} = \left| \frac{\Delta V_{\text{out}}}{\Delta V_{\text{in}}} \right|$$

$$\Delta V_{\text{out}} = \frac{V_{\text{out}(+10\%)} - V_{\text{out}(-10\%)}}{V_{\text{out}}} \times 100\%$$

V_{out(+10%)} : Output voltage at V_{in} = 1.1xV_{in(nominal)}&full loadV_{out(-10%)} : Output voltage at V_{in} = 0.9xV_{in(nominal)}&full loadV_{out} : Output voltage at V_{in} = V_{in(nominal)}&full load

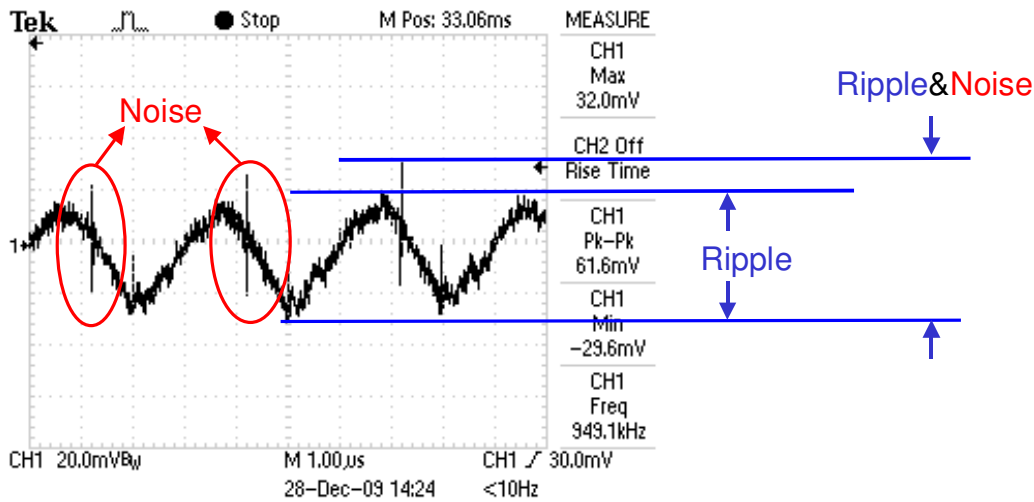
$$\Delta V_{\text{in}} = \frac{V_{\text{in}(+10\%)} - V_{\text{in}(-10\%)}}{V_{\text{in(nominal)}}} \times 100\%$$

V_{in(+10%)} : Input voltage = 1.1xV_{in(nominal)}V_{in(-10%)} : Input voltage = 0.9xV_{in(nominal)}V_{in(nominal)} : Nominal Input voltage7. Load regulation :

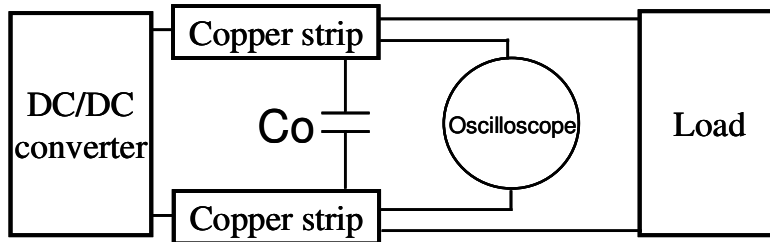
$$\frac{|V_{\text{out(FL)}} - V_{\text{out(NL)}}|}{V_{\text{out(FL)}}} \times 100\%$$

V_{out(FL)}: Output voltage at full loadV_{out(NL)}: Output voltage at 25% full load or 10% full load

8. [Ripple and Noise](#): as shown below. The bandwidth is 0-20MHz.

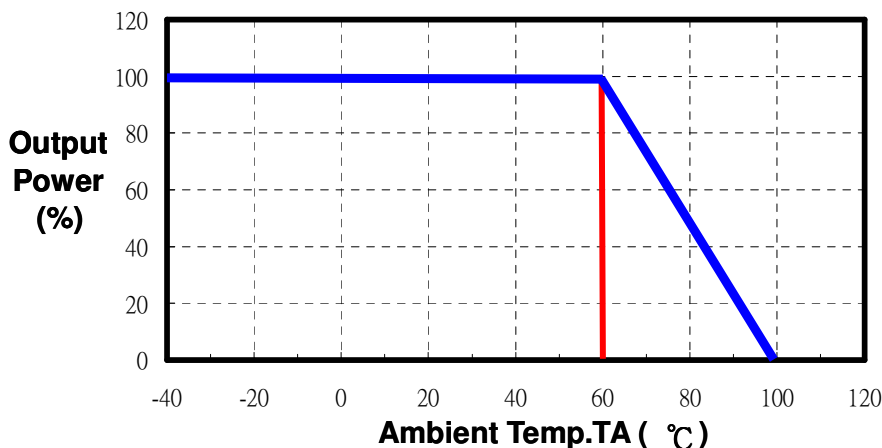


Output Ripple&Noise measurement test circuit: as shown below.



Co: usually 0.47uF.

9. [Temperature derating curve](#): The DC-DC converter will operate over a wider temperature range if less power is drawn from the output and the device is already running. The temperature derating curve shows the operating power-temperature range. As shown below.

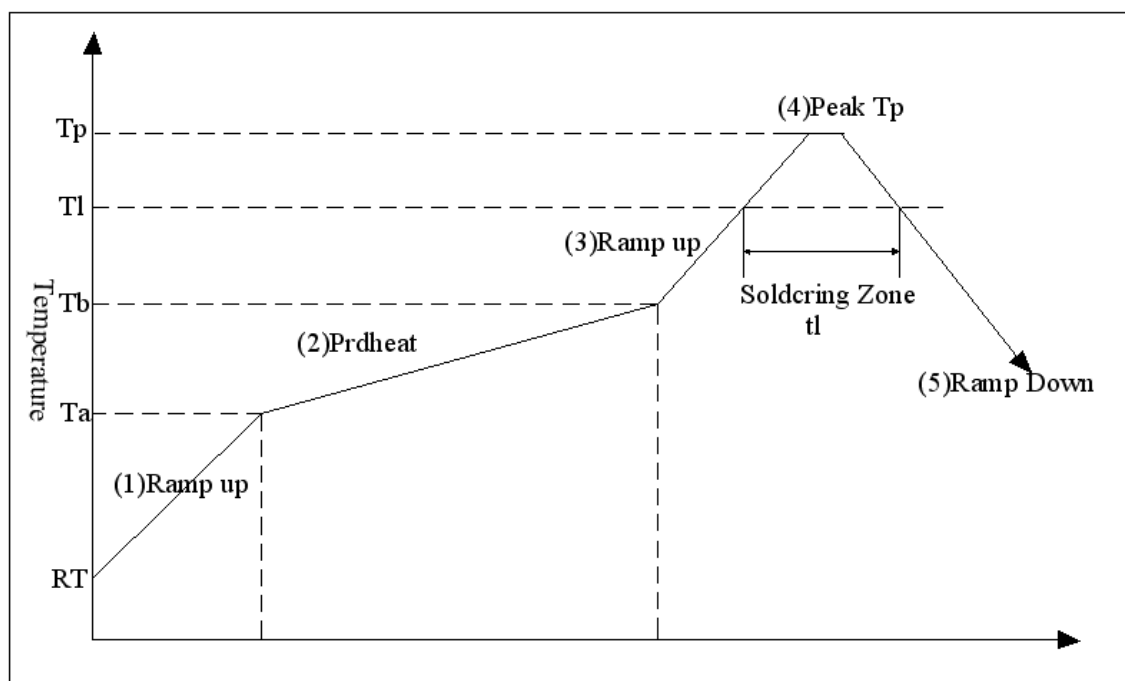


10. [Switching frequency](#): The nominal operating frequency of the DC-DC converters.

11. [Input to output isolation](#): The dielectric breakdown strength test between input and output circuits. This is the isolation voltage the device is capable of withstanding for a specified time, usually 1 second or 1 minute.

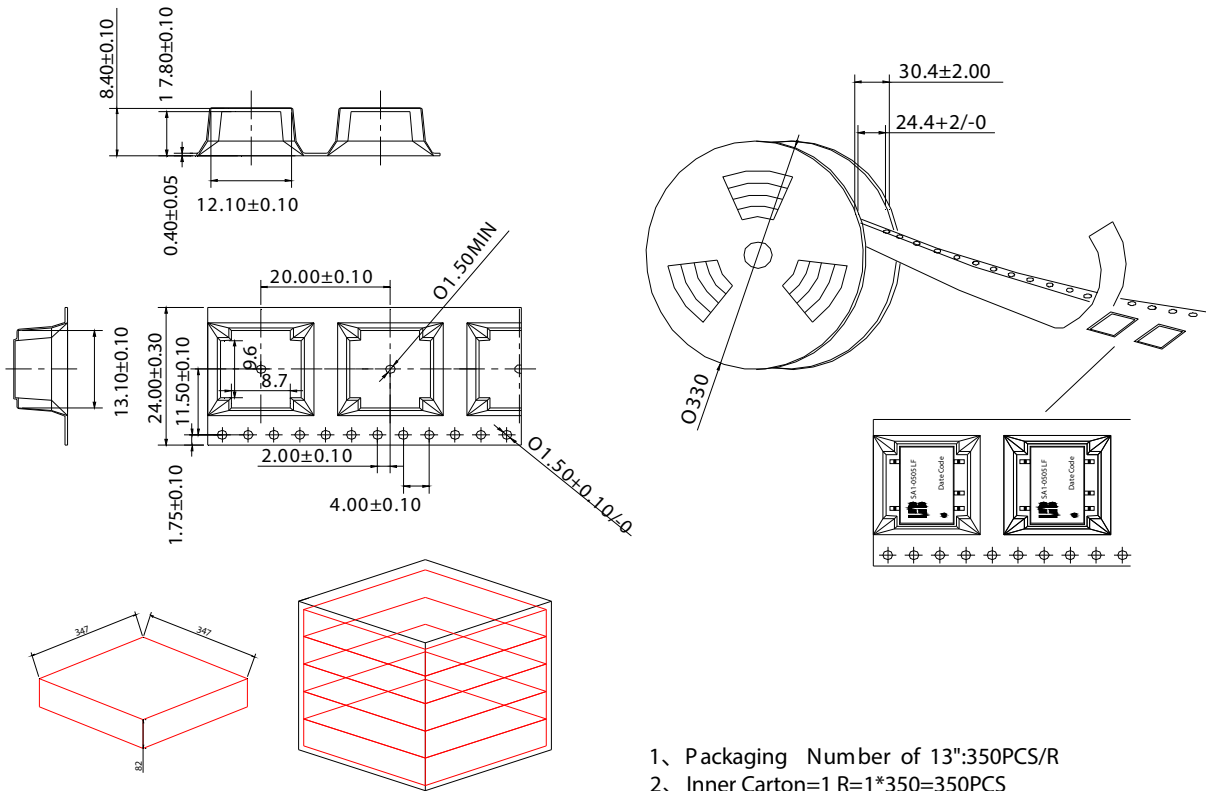
Pb-free SMD Peakage AIR Reflow Profile

Step#	Profile Feature	Condition / Duration
Step1	Ramp-up rate	3°C/sec max
Step2	Preheat : 150~200°C	Ta-Tb: 60-180 sec
Step3	Ramp-up rate (TL to Tp)	3°C/sec max
	Temperature maintained above 217°C (TL)	tL:60-150sec
Step4	Peak temperature (Tp)	245+0°C / -5°C
	The Time of Actual peak temperature	20-40sec
Step5	Ramp-down rate	6°C/sec max
Note1	All temperatures refer to topside of the package, measured on the package body surface.	
Note2	Time 25°C to peak temperature: 8 minutes max	
Note3	It is not allowed to make a forced cooling in temperature falling range.	



Package

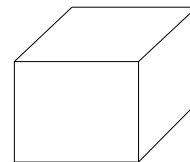
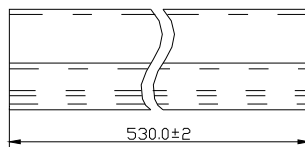
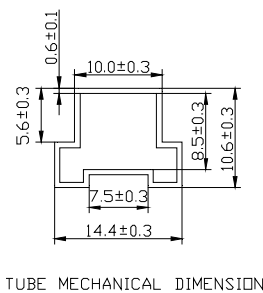
Reel:



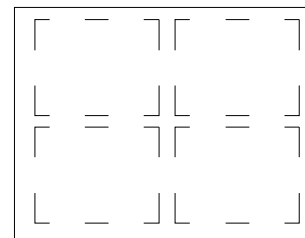
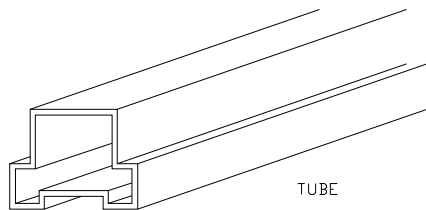
Inner Carton : 347*347*82mm Export Carton:375*375*460mm

- 1、Packaging Number of 13":350PCS/R
- 2、Inner Carton=1 R=1*350=350PCS
- 3、Export Carton=5 Inner Carton=5*350=1750PCS

Tube:



INNER CARTON:565*115*117



- 1. TUBE=39PCS
- 2. INNER CARTON=63 TUBE=63*39=2457PCS
- 3. EXPORT CARTON=4 INNER CARTON=4*2457=9828PCS