

## FEATURES:

- 1 Watt SIP Package
- Efficiency to 82%
- 100% Burned In
- UL 94V-0 Package Material
- Custom Solutions Available
- Unregulated Output Types

**ADAM**  
**TECH**

**1 Watt DC-DC Converter**  
**ES3R-03S05P3**
**1 Watt Single O/P**  
**Isolated DC/DC Converter**

### Input Specifications

|                      |        |
|----------------------|--------|
| Input Voltage:       | 3.3Vdc |
| Input Voltage Range: | ±10%   |

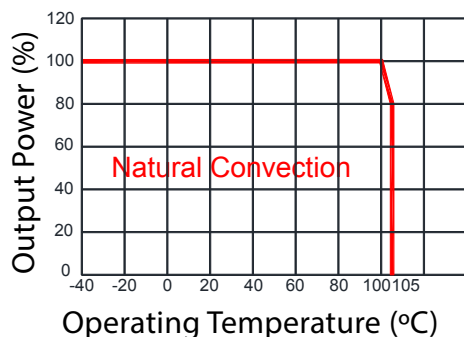
### Output Specifications

|                           |                          |                               |
|---------------------------|--------------------------|-------------------------------|
| Output Voltage:           | 5Vdc                     |                               |
| Output Voltage Accuracy:  | ±5%                      | @Vout=4.75~5.25Vdc@Vin=3.3Vdc |
| Output Current:           | 200mA                    |                               |
| Efficiency:               | 82% TYP                  |                               |
| Ripple / Noise:           | 30mVp-p TYP, 75mVp-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:                      | 1.28g TYP           |                                   |

## Temperature Derating Graph

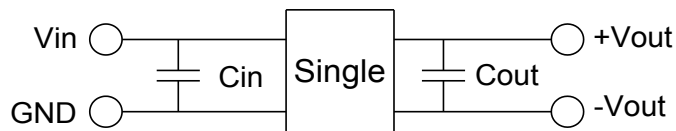


## Part Number

ES3 R - 03 S 05 P 3  
A B C D E F G

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

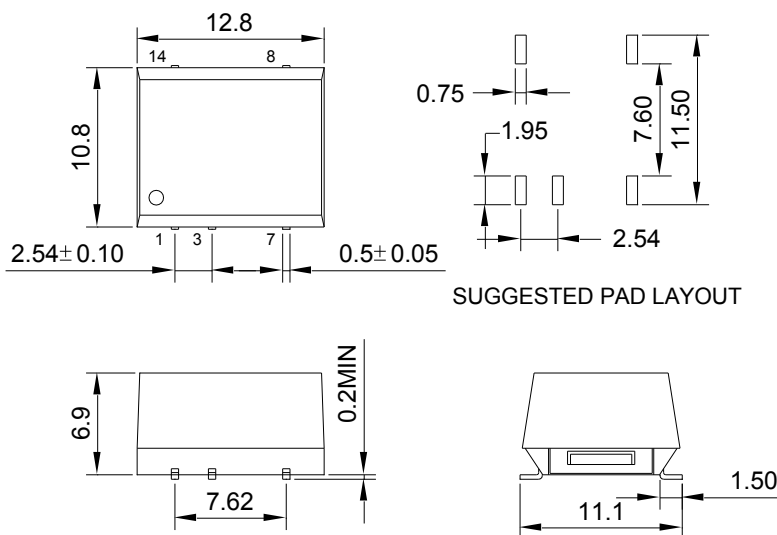
## Recommended Test Circuit



| Vin    | Cin       | Single Vout | Cout     |
|--------|-----------|-------------|----------|
| 3.3Vdc | 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.

## Outline Dimensions



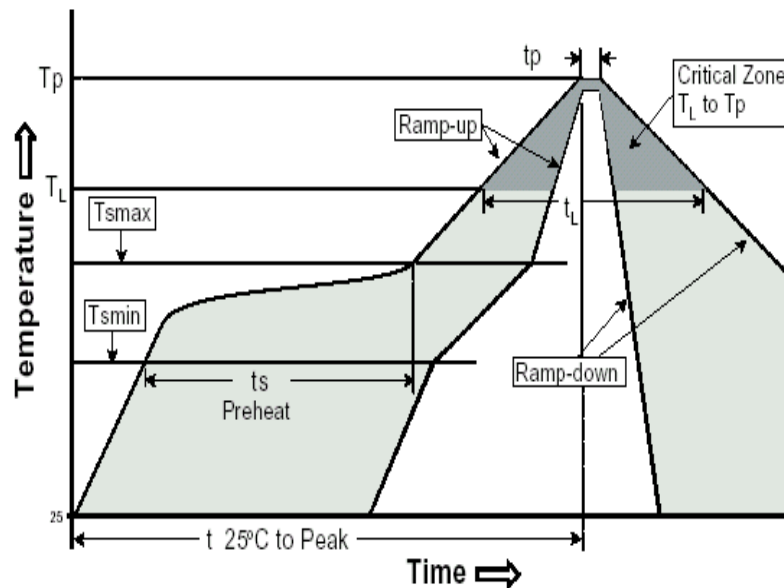
UNIT: mm unless otherwise specified, all tolerances are ±0.25

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

### 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 <ul style="list-style-type: none"> <li>- Temperature Min (<math>T_s</math> min)</li> <li>- Temperature Max (<math>T_s</math> max)</li> <li>- Time (<math>t_s</math> min to <math>t_s</math> max)</li> </ul> | $150^{\circ}\text{C}$<br>$200^{\circ}\text{C}$<br>60-180 seconds |
| Time Maintained Above: <ul style="list-style-type: none"> <li>- Temperature (<math>T_L</math>)</li> <li>- Time (<math>t_L</math>)</li> </ul>                                                                        | $217^{\circ}\text{C}$<br>60-150 seconds                          |
| Peak/Classification Temperature ( $T_p$ )                                                                                                                                                                           | $240 \pm 5^{\circ}\text{C}$                                      |
| Time within $5^{\circ}\text{C}$ of Actual Peak Temperature ( $t_p$ )                                                                                                                                                | 20-40 seconds                                                    |
| Ramp-Down Rate                                                                                                                                                                                                      | $6^{\circ}\text{C} / \text{seconds max}$                         |
| Time $25^{\circ}\text{C}$ to Peak Temperature                                                                                                                                                                       | 6 minutes max.                                                   |



### Packaging Information

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

