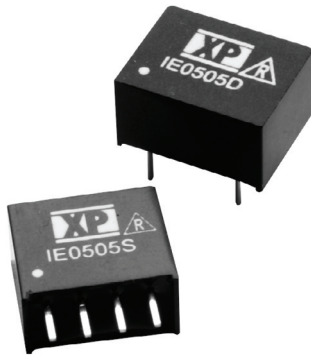




**THE DATASHEET OF  
IE2405S**



# 1 Watt IE Series



- Single Unregulated Output
- SIP or DIP Package
- 1.0kV DC Isolation
- Optional 3.0kV DC Isolation
- Small Package Sizes
- -40 °C to +85 °C Operation
- 3 Year Warranty

## Specification

### Input

- Input Voltage Range • Nominal  $\pm 10\%$
- Input Reflected Ripple Current • 20 mA pk-pk through 12  $\mu$ H inductor 5Hz to 20 MHz
- Input Reverse Voltage Protection • None

### Output

- Output Voltage • See table
- Minimum Load • None<sup>(5)</sup>
- Line Regulation •  $\pm 1.2\%/1\% \Delta V_{in}$
- Load Regulation •  $\pm 10\%$  for a 20-100% load change<sup>(6)</sup> (3.3 V models  $\pm 20\%$ , 15 V model  $\pm 8\%$ )
- Setpoint Accuracy •  $\pm 3\%$
- Ripple & Noise • 100 mV pk-pk max, 20 MHz bandwidth
- Temperature Coefficient • 0.02%/°C
- Maximum Capacitive Load • 220  $\mu$ F

### General

- Efficiency • See table
- Isolation Voltage (functional) • 1000 VDC minimum (3000 VDC -H option)
- Isolation Resistance •  $10^9 \Omega$
- Isolation Capacitance • 60 pF typical
- Switching Frequency • 40-150 KHz variable
- MTBF • >1.1 Mhrs to MIL-HDBK-217F at 25 °C, GB
- Solder Process • 260°C max 1.5mm from case 10s max
- Pin Material • SIP Solder coated alloy 42, DIP solder coated brass
- Case Material • Non-conductive plastic UL94V-0 rated

### Environmental

- Operating Temperature • -40°C to +85°C
- Storage Temperature • -40°C to +125°C
- Case Temperature • 100°C max
- Cooling • Convection-cooled

### Safety

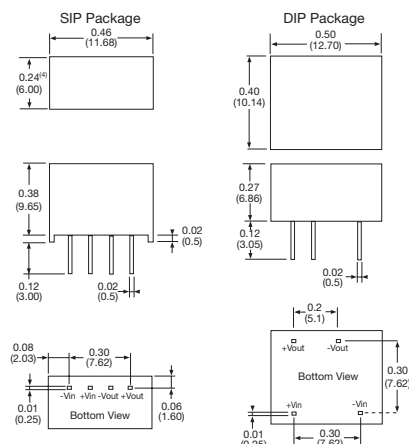
- Safety Agency • CE & UKCA meets all applicable directives & legislation.

| Input Voltage <sup>(9)</sup> | No Load Input Current | Output Voltage | Output Current | Efficiency | Model Number <sup>(1,2)</sup> |
|------------------------------|-----------------------|----------------|----------------|------------|-------------------------------|
| 3.3 VDC                      | 25 mA                 | 3.3 V          | 300 mA         | 71%        | IE0303S                       |
|                              | 25 mA                 | 5.0 V          | 200 mA         | 75%        | IE0305S                       |
|                              | 30 mA                 | 9.0 V          | 111 mA         | 74%        | IE0309S                       |
|                              | 45 mA                 | 12.0 V         | 84 mA          | 74%        | IE0312S                       |
|                              | 40 mA                 | 15.0 V         | 66 mA          | 77%        | IE0315S                       |
|                              | 40 mA                 | 24.0 V         | 42 mA          | 77%        | IE0324S                       |
| 5 VDC                        | 25 mA                 | 3.3 V          | 300 mA         | 72%        | IE0503S                       |
|                              | 25 mA                 | 5.0 V          | 200 mA         | 75%        | IE0505S                       |
|                              | 25 mA                 | 9.0 V          | 111 mA         | 77%        | IE0509S                       |
|                              | 25 mA                 | 12.0 V         | 84 mA          | 78%        | IE0512S                       |
|                              | 25 mA                 | 15.0 V         | 66 mA          | 78%        | IE0515S                       |
|                              | 25 mA                 | 24.0 V         | 42 mA          | 80%        | IE0524S                       |
| 12 VDC                       | 16 mA                 | 3.3 V          | 300 mA         | 72%        | IE1203S                       |
|                              | 16 mA                 | 5.0 V          | 200 mA         | 75%        | IE1205S                       |
|                              | 16 mA                 | 9.0 V          | 111 mA         | 77%        | IE1209S                       |
|                              | 16 mA                 | 12.0 V         | 84 mA          | 80%        | IE1212S                       |
|                              | 16 mA                 | 15.0 V         | 66 mA          | 78%        | IE1215S                       |
|                              | 16 mA                 | 24.0 V         | 42 mA          | 78%        | IE1224S                       |
| 15 VDC                       | 9 mA                  | 5.0 V          | 200 mA         | 78%        | IE1505S                       |
| 24 VDC                       | 10 mA                 | 3.3 V          | 300 mA         | 72%        | IE2403S                       |
|                              | 10 mA                 | 5.0 V          | 200 mA         | 75%        | IE2405S                       |
|                              | 10 mA                 | 9.0 V          | 111 mA         | 77%        | IE2409S                       |
|                              | 10 mA                 | 12.0 V         | 84 mA          | 80%        | IE2412S                       |
|                              | 10 mA                 | 15.0 V         | 66 mA          | 78%        | IE2415S                       |
|                              | 10 mA                 | 24.0 V         | 42 mA          | 80%        | IE2424S                       |

### Notes



1. For DIP package, replace 'S' in model number with 'D'.
2. Add suffix '-H' to model number for 3000 VDC isolation.
3. Operation at no load will not damage unit but it may not meet all specifications.
4. All dimensions in inches (mm).
5. Pin pitch tolerance:  $\pm 0.014$  ( $\pm 0.35$ )
6. Case tolerance:  $\pm 0.02$  ( $\pm 0.5$ )
7. Weight: SIP 0.003 lbs (1.4 g), DIP 0.004 lbs (1.8 g)

### Mechanical Details









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