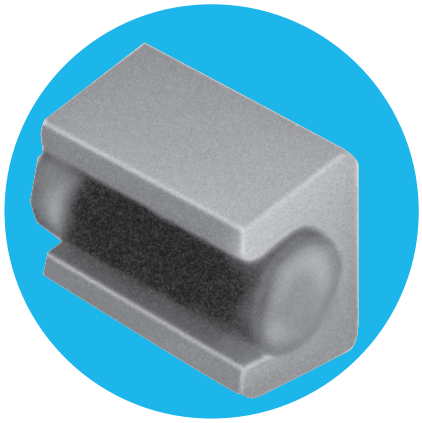
# Resistors

## Metal Glaze™ Power Pack Surface Mount High Power Density Ceramic Package



**PPS-1 Series**

- Low inductance
- 0.1Ω to 348KΩ range
- Superior surge handling capability
- 150°C maximum operating temperature
- 1 Watt performance - standard 2010 footprint
- Flameproof ceramic package provides superior temperature rise profile

OBSOLETE

All Pb-free parts comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

## Electrical Data

| Size | Type | Maximum Power Rating | Working Voltage[1] | Maximum Voltage | Resistance Range (ohms) | Tolerance (±%)[2] | TCR (ppm/°C)[2] |
|---|---|---|---|---|---|---|---|
| 2010 | PPS-1 | 1W | 350 | 700 | 0.1 to 0.99 | 1, 2, 5 | 100 |
| | | | | | 1.0 to 348K | 1, 2, 5 | 50, 100 |

[1]Not to exceed ( $\sqrt{P \times R}$ ). [2]Consult factory for tighter tolerances and TCRs.

### Applications

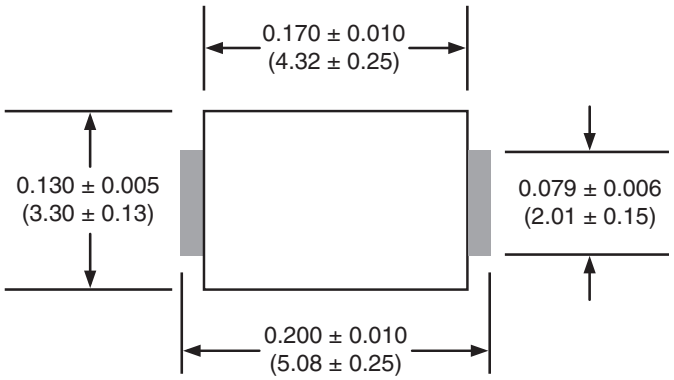
The PPS-1 will dissipate 1 watt at 70°C on a 2010 footprint. The PPS-1 is recommended for applications where board real estate or component/board TCE mismatch is a major concern. It is also recommended in circuits where a standard 2010 resistor exhibits marginal or unacceptable performance due to high power density/surge handling demands.

## Environmental Data

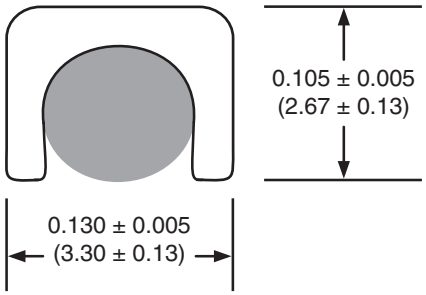
| Characteristic | Maximum Change | Test Method |
|---|---|---|
| **Thermal Shock** | ±(0.5% + 0.01 ohm) | MIL-R-55342E Par 4.7.3 (-65°C + 150°C, 5 cycles) |
| **Low Temperature Operation** | ±(0.25% + 0.01 ohm) | MIL-R-55342E Par 4.7.4 (-65°C @ working voltage) |
| **Short Time Overload** | ±(1.0% + 0.01 ohm) | MIL-R-55342E Par 4.7.5 (2.5 x $(PxR)^{½}$ |
| **High Temperature Exposure** | ±(0.5% + 0.01 ohm) | MIL-R-55342E Par 4.7.6 (+150°C for 100 hours) |
| **Resistance to Bonding Exposure** | ±(0.25% + 0.01 ohm) | MIL-R-55342E Par 4.7.7 (Reflow soldered to board @ 260°C for 10 seconds) |
| **Solderability** | 95% minimum coverage | MIL-STD-202, Method 208 (245°C for 5 seconds) |
| **Moisture Resistance** | ±(0.5% + 0.01 ohm) | MIL-R-55342E Par 4.7.8 (10 cycles, total 240 hours) |
| **Life Test** | ±(1.0% + 0.01 ohm) | MIL-R-55342E Par 4.7.10 (2000 hours @ 70°C intermittent) |
| **Terminal Adhesion Strength** | ±(1% + 0.01 ohm) | 1200 gram push from underside of mounted chip for 60 seconds |
| **Resistance to Board Bending** | ±(1% + 0.01 ohm) | Chip mounted in center of 90mm long board, deflected 5mm so as to exert pull on chip contacts for 10 seconds |

# Physical Data (Inches and (mm))

**Top View:**




**Side View:**



# Ordering Procedure

This product has two valid part numbers:

**European (Welwyn) Part Number: PPS1-100RFI** (PPS1 with TCR ±100ppm/°C at 100 ohms ±1%, Pb-free)

| P | P | S | 1 | | | | - | 1 | 0 | 0 | R | F | I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | 2 | | | | 3 | | | | 4 | 5 |

| 1<br>Type | 2<br>TCR (ppm/°C) | 3<br>Value | 4<br>Tolerance | 5<br>Termination & Packing |
|---|---|---|---|---|
| PPS1 | Omit for ±100 | E24 = 3/4 characters<br>E96 = 4/5 characters<br>R = ohms<br>K = kilohms | F = ±1% | I = Pb-free, Tape Pack |
| | -50 = ±50 | | G = ±2% | PB = SnPb, Tape Pack |
| | | | J = ±5% | 500/reel |

**USA (IRC) Part Number: PPS11001000FLF** (PPS1 with TCR ±100ppm/°C at 100 ohms ±1%, Pb-free)

| P | P | S | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | F | L | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | 2 | | | 3 | | | | 4 | 5 | |

| 1<br>Type | 2<br>TCR | 3<br>Value | 4<br>Tolerance | 5<br>Termination & Packing |
|---|---|---|---|---|
| PPS1 | 50 = ±50 | 3 digits + multiplier | F = ±1% | Omit for SnPb |
| | 100 = ±100 | R = ohms for values <100 ohms | G = ±2% | LF = Pb-free |
| | | | J = ±5% | 500/reel |