Ultra High Precision Z-Foil Power Resistor in TO-220 Configuration

with TCR of ±0.05 ppm/°C, Tolerance to ±0.01% and Power Rating to 8 W

FEATURES

- Temperature coefficient of resistance (TCR):
  ±0.05 ppm/°C typical (0°C to +60°C)
  ±0.2 ppm/°C typical (–55°C to +125°C, +25°C ref.)
- Tolerance: to ±0.01%
- Power coefficient of resistance (PCR) "ΔR due to self heating": 4 ppm/W typical
- Electrostatic discharge (ESD) above 25 000 V
- Load life stability: ±0.005% (25°C, 2000 h at rated power)
- Resistance range: 5 Ω to 10 kΩ (Any value available within resistance range e.g., 1K2345)
- Power rating: 8 W chassis mounted (per MIL-PRF-39009)

Pb-free Available

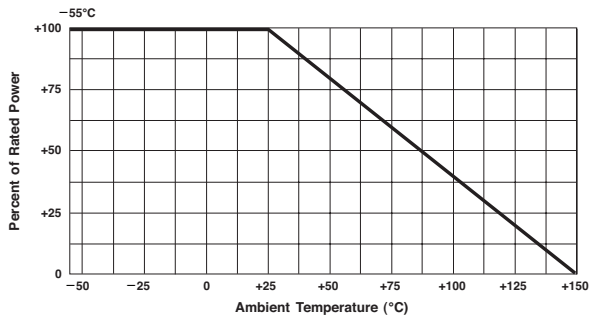
RoHS* COMPLIANT

VPR220Z
(–55°C TO +125°C, +25°C REF.)

RESISTANCE RANGE (Ω)	TIGHTEST RESISTANCE TOLERANCE	TYPICAL TCR AND MAX. SPREAD (ppm/°C)
50 to 10K	±0.02%, ±0.01%	±0.2±2.3
25 to <50	±0.01%	
10 to <25	±0.02%	
5 to <10	±0.1%	

Weight = 1 g maximum

Power Derating Curve



Specifications	
Load Life Stability at 2000 h	±0.05% max. ΔR under full rated power at +25°C
Power Rating at +25°C	8 W or 3 A[1] on heat sink[2] 1.5 W or 3 A[1] in free air **Further derating not necessary.**
Current Noise	<0.010 μV_{RMS}/V of applied voltage (–40 dB)
High Frequency Operation Rise time Inductance[3] (L) Capacitance (C)	 1 ns 0.1 µH maximum: 0.03 µH typical 1.0 pF maximum: 0.5 pF typical
Voltage Coefficient[4]	<0.1 ppm/V
Operating Temperature Range	–55°C to +150°C
Maximum Working Voltage	300 V. Not to exceed power rating.
Thermal EMF[5]	0.15 µV/°C maximum (lead effect)

Note

(1) Whichever is lower.

(2) Heat sink chassis dimensions and requirements per MIL-PRF-39009:

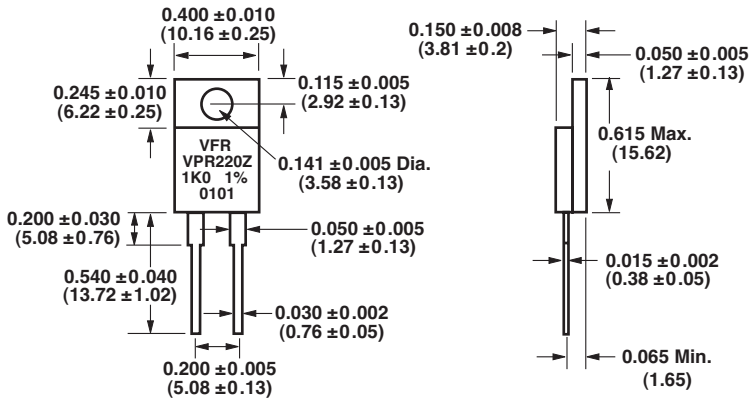
	INCHES	MILLIMETERS
L	6.00	152.4
W	4.00	101.6
H	2.00	50.8
T	0.04	1.0

(3) Inductance (L) due mainly to the leads.

(4) The resolution limit of existing test equipment (within themeasurement capability of the equipment, or “essentially zero”).

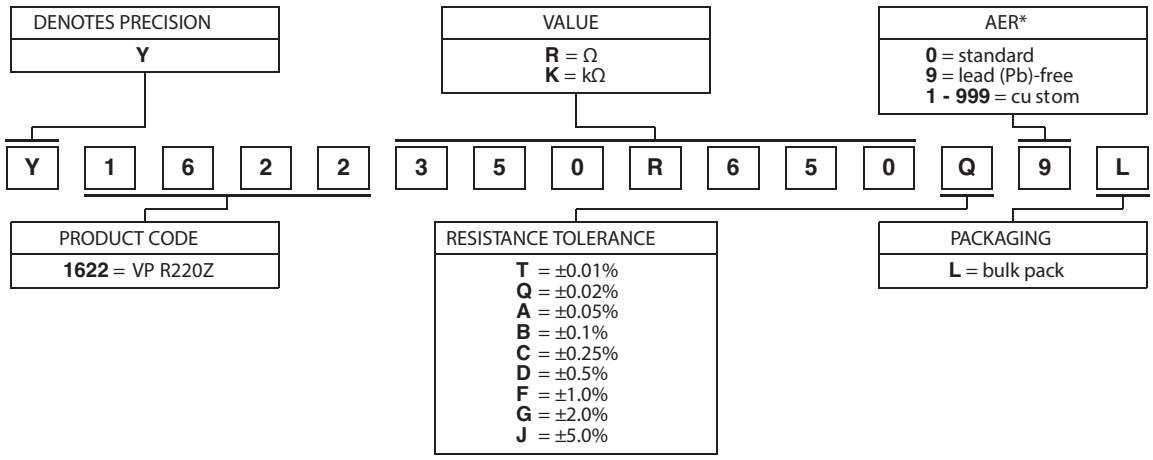
(4) µV/°C relates to EMF due to lead temperature difference.

VPR220Z Forming Dimensions in inches (millimeters)



Global Part Number Information

NEW GLOBAL PART NUMBER: Y1622350R650Q9L (preferred part number format)



FOR EXA MPLE: ABOVE GLOBAL ORDER Y1622 350R650 Q 9 L:
TYPE: VPR220Z
VALUE: 350.65 Ω
ABSOLUTE TOLERANCE: ±0.02%
TERMINATION: lead (Pb)-free
PA CKAGING: bulk pack

HISTORICAL PART NUMBER: VPR220ZT 350R65 Q B (will continue to be used)

VPR220Z	T	350R65	Q	B
MODEL	TERMINA TI ON	OHMIC VALUE	R ESI STANCE TOLERANCE	PACKAGING
VPR220Z	**T** = lead (Pb)-free None = tin/lead alloy	350.65 Ω	**T** = ±0.01% **Q** = ±0.02% **A** = ±0.05% **B** = ±0.1% **C** = ±0.25% **D** = ±0.5% **F** = ±1.0% **G** = ±2.0% **J** = ±5.0%	**B** = bulk pack

Note
* For non-standard requests, please contact application engineering.