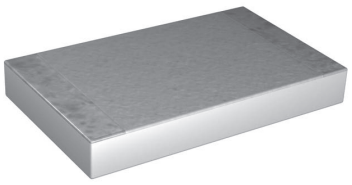
High Precision Flip Chip, Patents Pending (Industrialized Countries)



Product may not be to scale

FEATURES

- Nominal TCR: 0.5ppm/°C (- 55°C to + 125°C)
- Resistance Range: 10Ω to 30K
- Tolerance: to ± 0.01%
- Load Life Stability: ± 0.01% maximum ΔR under full rated power at + 70°C for 2000 hours
- Shelf Life Stability: 50ppm (0.005%) over several years
- Voltage Coefficient: < 0.00001%/volt (< 0.1ppm/V)
- Current Noise: < 0.010μV (rms)/volt of applied voltage
- Non Inductive: < 0.08μH

The VFC1206 is a surface mountable flip chip resistor that utilizes Ultra Precision Bulk Metal® "Z" Foil. This product differs from other Vishay Bulk Metal® Foil surface mount devices in as much as it is installed with the foil side facing the PCB providing better power handling capabilities. The Foil element is isolated from the PCB by a protective overcoating. This overcoating plus the overall product design isolates the resistor from handling and installation stresses.

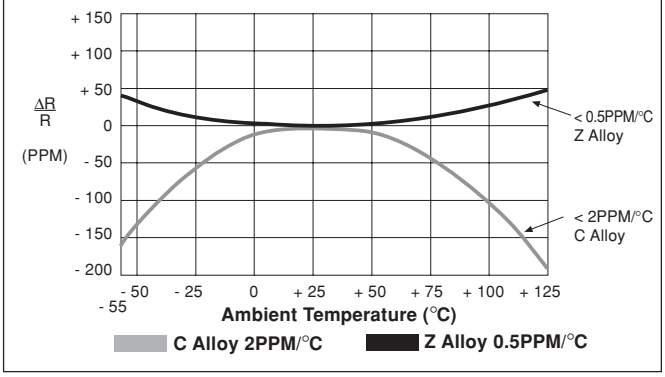
The temperature coefficient of resistance (TCR) curve shown below compares the new revolutionary "Z" Foil with its TCR of < 0.5ppm/°C to the original Vishay "C" Foil. The Bulk Metal® Foil characteristics of excellent long term stability, low noise and availability of tight tolerance are maintained in this Flip Chip configuration. The VFC1206 is available in any value within the specified resistance range. The flip chip configuration is more economical for high volume, anolog applications where high precision is required.

TABLE 1 - RESISTANCE VALUE VS TOLERANCE AND TCR

VALUE Ω	STANDARD TOLERANCE (%)*	MAXIMUM TCR**
100Ω to 30K	± 0.01%	± 2.0ppm/°C
50Ω to < 100Ω	± 0.05	± 3.0ppm/°C
25Ω to < 50Ω	± 0.1	± 4.0ppm/°C
10Ω to < 25Ω	± 0.25	± 5.0ppm/°C

*Tighter tolerances are available. Please contact Application Engineering.
**Range: - 55°C to + 125°C, + 25°C reference

FIGURE 1 - NOMINAL TCR COMPARISON OF Z FOIL TO C FOIL



The TCR for values < 100Ω are influenced by the termination composition and result in a deviation from this curve.

TABLE 2 - TYPICAL PERFORMANCE SPECIFICATIONS

TEST	MIL-PRF-55342 CHARACTERISTIC E ΔR LIMITS*	VFC1206 MAXIMUM ΔR LIMITS**
Temperature Coefficient of Resistance	± 25ppm/°C	See Table 1
Thermal Shock	± 0.10%	± 0.02%
Low Temperature Operation	± 0.10%	± 0.02%
Short Time Overload	± 0.10%	± 0.02%
High Temperature Exposure	± 0.10%	± 0.03%
Resistance to Bonding	± 0.20%	± 0.02%
Moisture Resistance	± 0.20%	± 0.03%
Life 2000hrs at + 70°C	± 0.50%	± 0.01%

NOTES:
* As shown + 0.01Ω to allow for measurement error.
**As shown + 0.01Ω to allow for measurement error for values less than 100Ω.

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FIGURE 2 - POWER DERATING CURVE

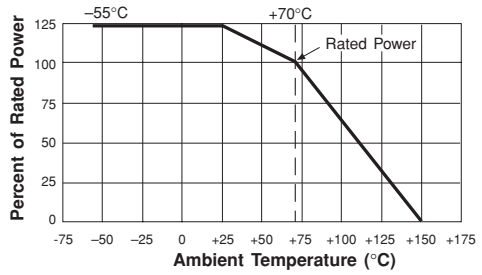


FIGURE 3 - CHIP CONFIGURATION

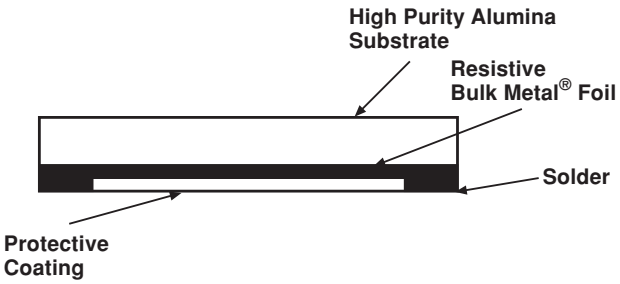
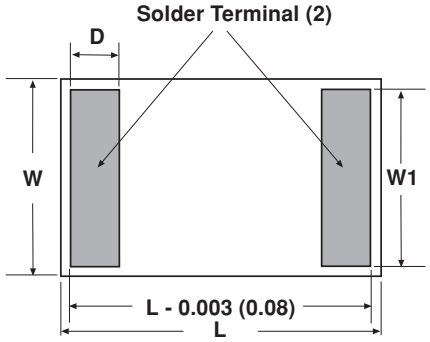
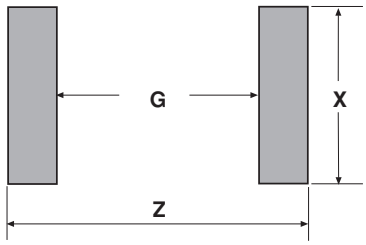


FIGURE 4 - DIMENSIONS AND LAND PATTERN in inches (millimeters)

Bottom View (Showing Terminals for Mounting):



Land Pattern



CHIP SIZE	L ±0.005 (0.13)	W ±0.005 (0.13)	THICKNESS MAXIMUM	D ±0.003 (0.08)	W1 ±0.003 (0.08)	Z ±0.003 (0.08)	G ±0.003 (0.08)	X ±0.003 (0.08)
1206	0.126 (3.20)	0.062 (1.57)	0.025 (0.64)	0.015 (0.38)	0.059 (1.50)	0.126 (3.20)	0.090 (2.29)	0.062 (1.57)

TABLE 3 - PROPERTIES

RESISTANCE RANGE (Ω)	POWER + 70°C (mW)	MAXIMUM VOLTAGE (V)	MAXIMUM WEIGHT (mg)
10R - 30K	125	61	10.3

TABLE 4 - ORDERING INFORMATION

MODEL	CHIP SIZE	RESISTANCE VALUE			TOLERANCE	TERMINATION	PACKAGING
		RESISTANCE RANGE	LETTER DESIGNATOR	MULTIPLIER FACTOR			
VFC	1206	10Ω to <1KΩ	**R**	x 1.0	**T** ± 0.01% **Q** ± 0.02% **A** ± 0.05% **B** ± 0.1% **C** ± 0.25% **D** ± 0.5% **F** ± 1.0%	**B** - solderable	**T** = Tape and Reel **W** = Waffle Pack
		Example: 249R00 = 249Ω					
		1K to 30K	**K**	x 10^3			
		Example: 10K000 = 10.0KΩ					

Patent Pending

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