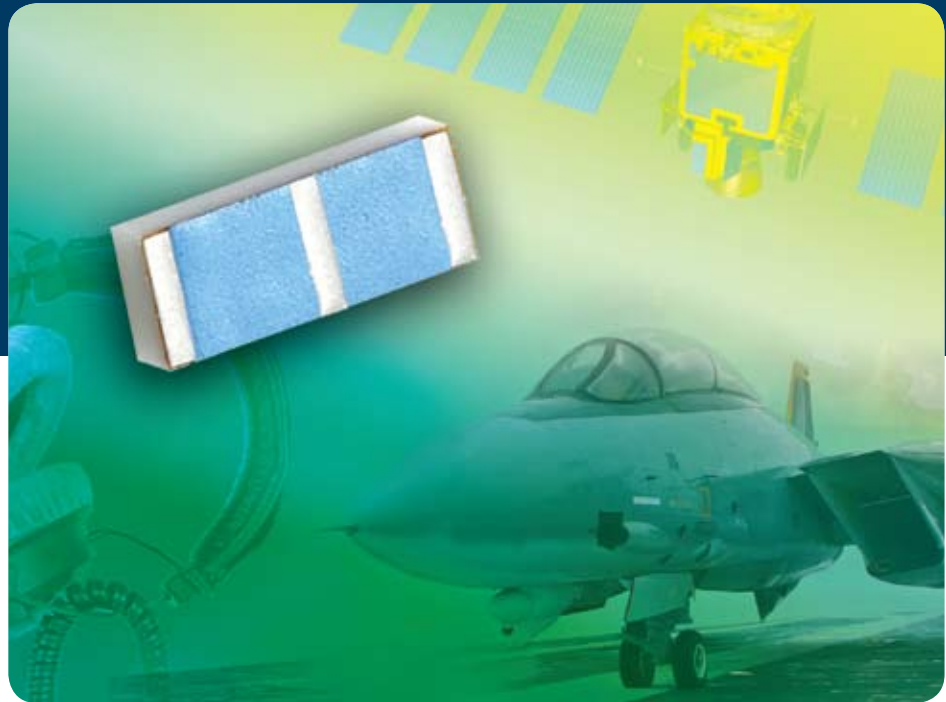




BULK METAL[®] FOIL RESISTORS

VFCD1505



VFCD1505

Z-Foil, Surface-Mount Flip Chip Voltage Divider

KEY BENEFITS

- Temperature Coefficient of Resistance (TCR):
 - Absolute
 - ± 0.05 ppm/ $^{\circ}\text{C}$ (0 $^{\circ}\text{C}$ to +60 $^{\circ}\text{C}$)
 - ± 0.2 ppm/ $^{\circ}\text{C}$ (-55 $^{\circ}\text{C}$ to +125 $^{\circ}\text{C}$, +25 $^{\circ}\text{C}$ ref.)
 - Tracking
 - 0.1 ppm/ $^{\circ}\text{C}$
- Power Coefficient of Resistance (PCR) tracking: 5 ppm at rated power
- Load-life ratio stability: 0.005% (70 $^{\circ}\text{C}$, 2000 hours at rated power)
- Any value at any tolerance available within resistance range
- Tolerance and tolerance match: to $\pm 0.01\%$
- Electrostatic discharge (ESD): above 25,000 V
- Rise time: 1 ns without ringing
- Current noise: -40 dB

APPLICATIONS

- Instrumentation amplifiers
- Bridge networks
- Differential amplifiers
- Ratio arms in bridge circuits
- Medical and test equipment
- Military
- Aerospace

Datasheet is available on our web site at www.vishay.com
for VFCD1505 - <http://www.vishay.com/doc?63109>

Z-Foil Surface Mount Flip Chip Voltage Divider TCR Tracking of 0.1 ppm/°C, Absolute TCR ± 0.05 ppm/°C, with Resistance Ratio Stability of 0.005 % (50 ppm)

FEATURES

- Temperature coefficient of resistance (TCR): absolute; (table 1) ± 0.05 ppm/°C (typical 0 °C to + 60 °C) ± 0.2 ppm/°C (typical - 55 °C to + 125 °C, + 25 °C ref.)
- RoHS* COMPLIANT
- Tracking; (table 1) 0.1 ppm/°C typical
- Power coefficient tracking: ΔR due to self heating* 5 ppm at rated power
- Short time overload: ± 0.005 %
- Tolerance: absolute and resistance ratio: to 0.01 %
- Load life stability (0.1 W at 70 °C, 2000 h) Absolute; 0.01 % Ratio; 0.005 %
- Electrostatic discharge (ESD) above 25 000 V
- Power rating at 70 °C: entire package: 0.1 W, divided between the two resistors proportionally to their value
- Non-inductive, non-capacitive design
- Thermal EMF: 0.05 μ V/°C typical
- Current noise: < 40 dB
- Rise time: 1 ns without ringing
- Non inductive: < 0.08 μ H
- Voltage coefficient: < 0.1 ppm/V
- Non hot spot design
- Terminal finishes available: lead (Pb)-free
inlead alloy
- For better performances please contact us

APPLICATIONS

- Instrumentation amplifiers
- Bridge networks
- Differential amplifiers
- Ratio arms in bridge circuits
- Medical and test equipment
- Military
- Airborne etc.

FIGURE 2 - SCHEMATIC

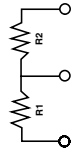


FIGURE 1 - POWER DERATING CURVE

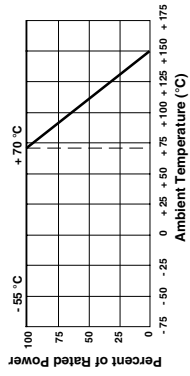


TABLE 1 - RESISTANCE VALUES/RATIO AND TCR CHARACTERISTICS

POPULAR VALUES	VCODES	ABSOLUTE TCR (- 55 °C TO + 125 °C, + 25 °C REF.)		TCR TRACKING		TOLERANCE MATCHING
		TYPICAL	MAXIMUM	TYPICAL	MAXIMUM	
10K/10K	V0001			0.1 ppm/°C	0.5 ppm/°C	0.01 %
5K/5K	V0002			0.1 ppm/°C	0.5 ppm/°C	0.01 %
1K/1K	V0004			0.4 ppm/°C	1.0 ppm/°C	0.01 %
2K/2K	V0102			0.4 ppm/°C	1.0 ppm/°C	0.01 %
5K/10K	V0005			0.4 ppm/°C	1.0 ppm/°C	0.01 %
2.5K/10K	V0060			0.4 ppm/°C	1.0 ppm/°C	0.02 %
1K/9K	V0056			0.4 ppm/°C	1.0 ppm/°C	0.02 %
1K/10K	V0064			0.4 ppm/°C	1.0 ppm/°C	0.02 %

Note

* Additional ratios are available. For the relevant VCODES for ordering, please contact application engineering using the footer below

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For any questions, contact: foi@vishay.com

TABLE 3 - GLOBAL PART NUMBER INFORMATION

NEW GLOBAL PART NUMBER: Y1685V00010Q09R (preferred part number format)

Y	1	6	8	5	V	0	0	0	1	Q	9	R
DENOTES PRECISION		RESISTANCE VALUE CODE			TOLERANCE MATCH			PACKAGING				
Y		1685 = VFCD1505			T = 0.01 % Q = 0.02 % A = 0.05 %			R = tape and reel W = wafer pack				
PRODUCT CODE		ABSOLUTE TOLERANCE			TOLERANCE MATCH			AER*				
1685 = VFCD1505		T = ± 0.01 % Q = ± 0.02 % A = ± 0.05 % C = ± 0.1 % D = ± 0.5 % F = ± 1.0 %			Q = 0.02 % A = 0.05 % B = 0.5 % D = 0.5 % F = 1.0 %			0 = standard product, inlead terminations 9 = standard product, lead (Pb)-free terminations Other = custom				

FOR EXAMPLE: ABOVE GLOBAL ORDER Y1685 V0001 Q 0 9 R:

TYPE: VFCD1505
VALUES: 10K/10K
ABSOLUTE TOLERANCE: ± 0.02 %
TOLERANCE MATCH: 0.02 %
TERMINATION: lead (Pb)-free
PACKAGING: tape and reel

HISTORICAL PART NUMBER: VFCD1505 10K/10K TCR0.2 Q Q S T (will continue to be used)

VFCD1505	10K/10K	TCR0.2	Q	Q	S	T
MODEL	OHMIC VALUE	TCR CHARACTERISTIC	ABSOLUTE TOLERANCE	TOLERANCE MATCH	TERMINATION	PACKAGING
VFCD1505	R ₁ = 10 KΩ R ₂ = 10 KΩ		Q = ± 0.02 % A = ± 0.05 % B = 0.5 % D = 0.5 % F = ± 1.0 %	Q = 0.02 % A = 0.05 % B = 0.5 % D = 0.5 % F = 1.0 %	S = lead (Pb)-free B = inlead alloy	T = tape and reel W = wafer pack

Notes

- * Application engineering release: for non-standard requests, please contact application engineering
- ** For examples of VCODES see table 1

