

Ultra High Precision Bulk Metal® Z-Foil Surface Mount Voltage Divider

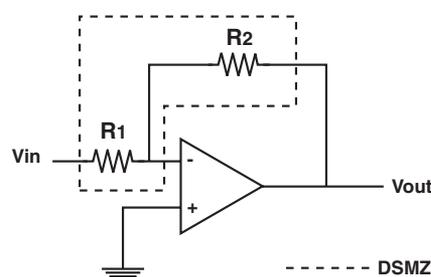
TCR Tracking of <0.1 ppm/°C, PCR of ±5 ppm at Rated Power and Stability of ±0.005% (50 ppm)

FEATURES

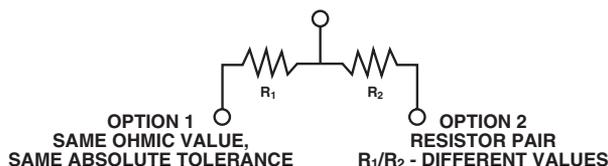
- Temperature coefficient of resistance (TCR):
Absolute: ±0.2 ppm/°C typ. (-55°C to +125°C, +25°C Ref.) Tracking: 0.1 ppm/°C typical
- Power coefficient tracking
“ΔR due to self heating”: ±5 ppm at rated power
- Power rating at 70°C: entire package: 0.1 W, each resistor: 0.05 W
- Tolerance: absolute: ±0.02%; match: 0.01%
- Ratio stability: 0.005% (0.05 W at 70°C, 2000 h)
- Resistance range: 100 Ω to 10 kΩ per resistor
- Short time overload ≤0.005%



Available
RoHS*
COMPLIANT



Schematic



Model DSMZ Specifications⁽¹⁾

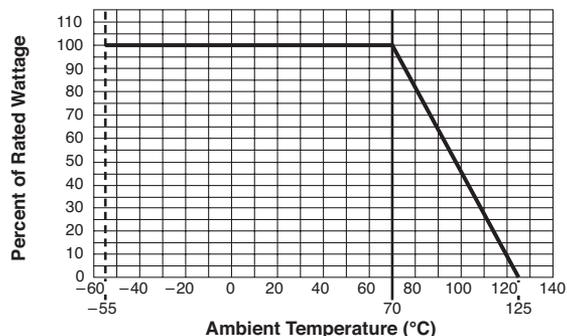
| Resistance Values | Absolute TCR (- 55 °C to +125 °C, +25 °C Ref.) typical + max. spread | Resistance Ratio | TCR Tracking | Tolerance | |
|---|---|---|--------------|-----------|--------|
| | | | | Absolute | Match |
| 100 Ω to 10 kΩ per resistor ⁽²⁾ | ±0.2 ppm/°C ±2.0 ppm/°C | R ₁ /R ₂ = 1 | 0.5 ppm/°C | ±0.02 % | 0.01 % |
| | | 1 < R ₁ /R ₂ ≤ 10 | 1.0 ppm/°C | ±0.05 % | 0.02 % |
| | | 10 < R ₁ /R ₂ ≤ 100 | 2.0 ppm/°C | ±0.1 % | 0.05 % |

Note

⁽¹⁾ Tighter performances are available

⁽²⁾ For resistance values above 10 kΩ per resistor, please contact application engineering

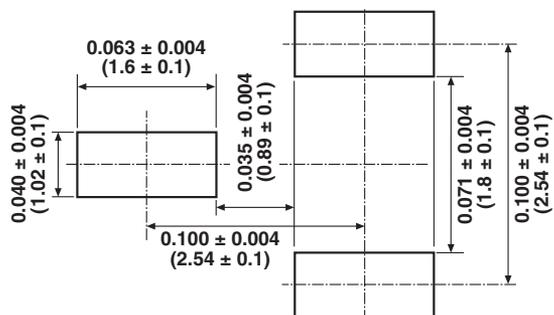
Power Derating Curve



Performance Specifications (test method per mil-prf-914)

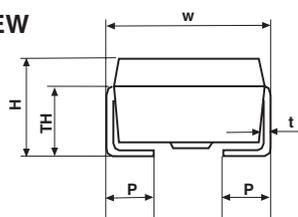
| SPECIFICATIONS | TYPICAL LIMITS |
|--|---|
| Power rating at 70°C | Entire package: 0.1 W Each resistor: 0.05 W |
| Maximum Working Voltage (each resistor) | 25 V |
| Working Temperature Range | -65°C to +125°C |
| Thermal Shock 25 × (-65°C to +125°C) | ΔR = 0.01% (100 ppm) ΔRatio = 0.005% (50 ppm) |
| Thermal Shock 5 × (-65°C to +125°C) and Power Conditioning 1.5 rated power at 25°C, 100 hours | ΔR = 0.015% (150 ppm) ΔRatio = 0.01% (100 ppm) |
| DWV atmospheric pressure, 200 VAC, 1 minute | Successfully passed |
| Insulation Resistance 100 VDC, 1 minute | >10 ⁴ MΩ |
| Resistance to Soldering Heat +245°C ±5°C for 30 sec ±5 sec | ΔR = 0.01% (100 ppm) ΔRatio = 0.005% (50 ppm) |
| Moisture Resistance +65°C to -10°C; 90% to 98% RH; 0.1 × rated power, 240 hours | ΔR = 0.02% (200 ppm) ΔRatio = 0.005% (50 ppm) |
| Shock (Specified Pulse) 100 G | ΔR = 0.005% (50 ppm) ΔRatio = 0.0025% (25 ppm) |
| Vibration, High Frequency (10 Hz -2000 Hz), 20 G | ΔR = 0.01% (100 ppm) ΔRatio = 0.005% (50 ppm) |
| High Temperature Exposure 100 hours at 125°C | ΔR = 0.01% (100 ppm) ΔRatio = 0.005% (50 ppm) |
| Low Temperature Storage 24 hours at -65°C | ΔR = 0.005% (50 ppm) ΔRatio = 0.005% (50 ppm) |
| Load Life Stability 2000 hours at +70°C; rated power | ΔR = 0.005% (50 ppm) ΔRatio = 0.005% (50 ppm) |
| Short Time Overload 6.25 × Rated Power; 5 seconds | ΔR = 0.005% (50 ppm) ΔRatio = 0.0025% (25 ppm) |
| Low Temperature Operation -65°C, 45 min at P _{nom} | ΔR = 0.005% (50 ppm) ΔRatio = 0.0025% (25 ppm) |
| Weight | 0.04 g |

Recommended Land Pattern

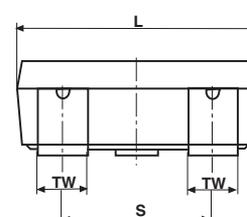


Dimensions and Imprinting

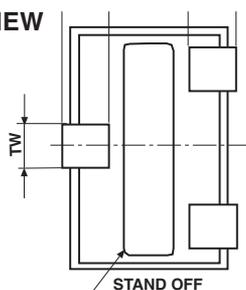
SIDE VIEW



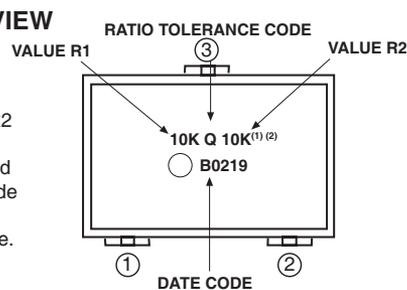
FRONT VIEW



BOTTOM VIEW



TOP VIEW



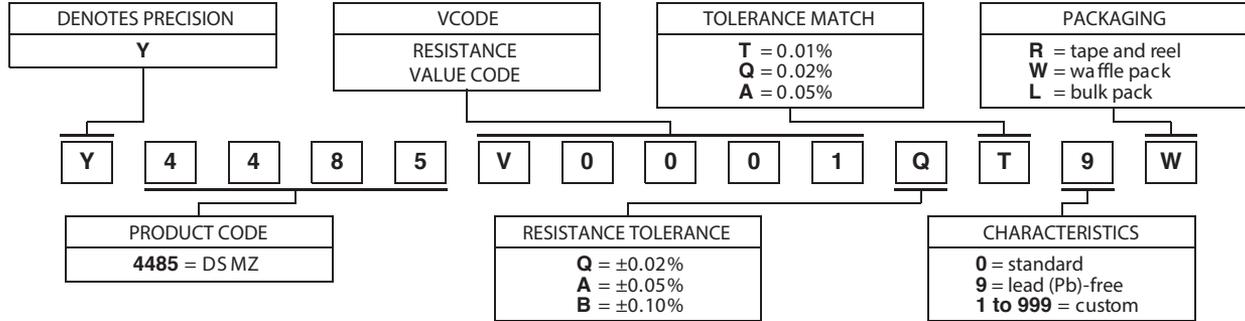
Notes

- (1) If the resistance value of R1 and R2 contains more than 6 characters together, the VCODE will be printed instead (see Resistance Value Code List for Popular Ratios Table) followed by the ratio tolerance code.
- (2) R1—between PIN1 and PIN3
R2—between PIN2 and PIN3.

| DIMENSIONS | L | W | H | P | TW | TH | S | t |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| INCHES | 0.160±0.008 | 0.106±0.008 | 0.063±0.008 | 0.031±0.005 | 0.031±0.004 | 0.043±0.008 | 0.100±0.008 | 0.005±0.002 |
| MILLIMETERS | 4.06±0.20 | 2.69±0.20 | 1.60±0.20 | 0.79±0.13 | 0.79±0.10 | 1.09±0.20 | 2.54±0.20 | 0.13±0.05 |

Global Part Number Information⁽¹⁾

NEW GLOBAL PART NUMBER: Y4485V0001QT9W (preferred part number format)



FOR EXAMPLE: ABOVE GLOBAL ORDER Y4485 V0001 Q T 9 W:
 TYPE: DSMZ
 VALUES: 10K/10K
 ABSOLUTE TOLERANCE: ± 0.02%
 TOLERANCE MATCH: 0.01%
 TERMINATION: lead (Pb)-free
 PACKAGING: waffle pack

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

| DSMZ | 10K 10K | TCR0.2 | Q | T | S | W |
|-------|--|--------------------|--|-------------------------------------|------------------------------------|---|
| MODEL | OHMIC VALUE | TCR CHARACTERISTIC | ABSOLUTE TOLERANCE | TOLERANCE MATCH | TERMINATION | PACKAGING |
| | R ₁ = 10 kΩ R ₂ = 10 kΩ | | Q = ±0.02% A = ±0.05% B = ±0.10% | T = 0.01% Q = 0.02% A = 0.05% | S = lead (Pb)-free B = tin/lead | T = tape and reel W = waffle pack B = bulk pack |

Note

⁽¹⁾ For non-standard requests or additional values, please contact application engineering.

Resistance Value Code List for Popular Ratios⁽¹⁾

| VCODES | R1/R2 RATIO | R1 | R2 | VCODES | R1/R2 RATIO | R1 | R2 | |
|--------|-------------|------|------|--------|-------------|-------|------|------|
| V0052 | 100 | 10K | 100R | V0080 | 2.5 | 1K | 400R | |
| V0065 | 50 | 10K | 200R | V0081 | | 500R | 200R | |
| V0066 | | 5K | 100R | V0082 | 2 | 10K | 5K | |
| V0067 | 25 | 10K | 400R | V0083 | | 2K | 1K | |
| V0068 | | 5K | 200R | V0084 | | 1K | 500R | |
| V0069 | 20 | 10K | 500R | V0085 | | 400R | 200R | |
| V0070 | | 2K | 100R | V0086 | | 200R | 100R | |
| V0071 | 10 | 10K | 1K | V0087 | 1.25 | 500R | 400R | |
| V0072 | | 2K | 200R | V0001 | 1 | 10K | 10K | |
| V0073 | | 1K | 100R | | | 5K | 5K | |
| V0074 | 5 | 5K | 1K | | | V0059 | 2K | 2K |
| V0075 | | 2K | 400R | | | V0004 | 1K | 1K |
| V0076 | | 1K | 200R | | | V0091 | 500R | 500R |
| V0077 | | 500R | 100R | | | V0090 | 400R | 400R |
| V0246 | 4 | 10K | 2K5 | | | V0089 | 200R | 200R |
| V0078 | | 2K | 500R | | | V0088 | 100R | 100R |
| V0079 | | 400R | 100R | | | | | |

Note

⁽¹⁾ Other values available upon request.