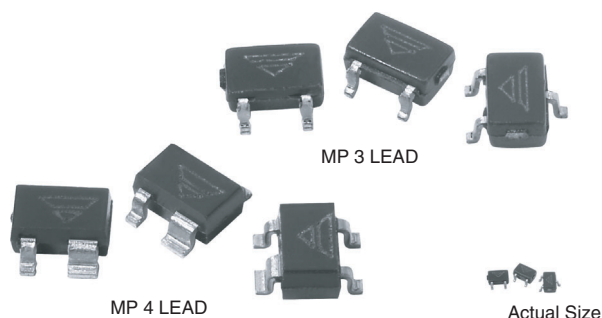
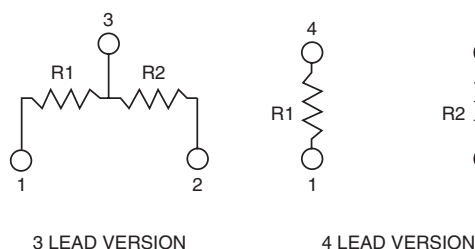


Surface Mount Network



Vishay Thin Film MP Series Dividers provide ± 2 ppm/ $^{\circ}\text{C}$ tracking and a ratio tolerance as tight as ± 0.05 %, ultra small size, 3 or 4 lead package and exceptional stability for all surface mount applications. The standard SC70 package format with common standard resistance values provide easy selection for most applications requiring matched pair resistor elements. If you require a non-standard ratio, consult the applications engineering group as we may be able to meet your requirements with a custom design.

SCHEMATIC



FEATURES

- Lead (Pb)-free available
- Small physical size SC70 format
- Tight resistance ratio tolerances ± 0.05 %
- Low TCR tracking ± 2 ppm
- Excellent long term stability (500 ppm at 70 $^{\circ}\text{C}$ for 2000 h)
- Center-tapped or isolated matched pair resistors



RoHS*
COMPLIANT

TYPICAL PERFORMANCE

| | ABS | TRACKING |
|-----|-----|----------|
| TCR | 25 | 2 |
| | ABS | RATIO |
| TOL | 0.1 | 0.05 |

STANDARD RESISTANCE VALUES

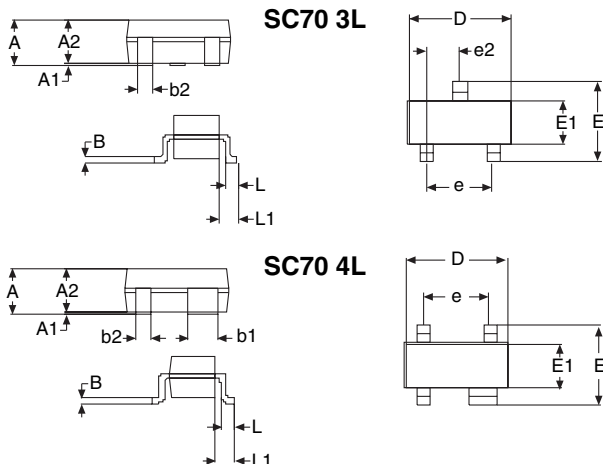
| TYPE | STANDARD VALUES | |
|------|-----------------|-----------------|
| | R1 (Ω) | R2 (Ω) |
| MP3 | 1K | 1K |
| | 10K | 10K |
| MP4 | 1K | 1K |
| | 10K | 10K |

STANDARD ELECTRICAL SPECIFICATIONS

| TEST | | SPECIFICATIONS | CONDITIONS |
|--------------------------------|----------|---|---|
| Material | | Passivated Nichrome | |
| Resistance Range | | 100 Ω to 50 k Ω | |
| TCR | | ± 25 ppm/ $^{\circ}\text{C}$ | - 55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$ |
| Tolerance: | Absolute | ± 0.10 %, ± 0.50 %, ± 1.0 % | + 25 $^{\circ}\text{C}$ |
| | Ratio | ± 0.05 % (standard), ± 1.0 % | |
| Power Rating: | Resistor | 0.075 W | Max. at + 70 $^{\circ}\text{C}$ |
| | Package | 0.150 W | Max. at + 70 $^{\circ}\text{C}$ |
| Stability | | 500 ppm | 2000 h at + 70 $^{\circ}\text{C}$ |
| Voltage Coefficient | | 0.1 ppm/V | |
| Working Voltage | | 50 V | |
| Operating Temperature Range | | - 55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$ | |
| Noise | | < - 30 dB | |
| Thermal EMF | | 0.1 $\mu\text{V}/^{\circ}\text{C}$ | |
| Shelf Life Stability: Absolute | | < 100 ppm | 1 year at + 25 $^{\circ}\text{C}$ |

* Pb containing terminations are not RoHS compliant, exemptions may apply

DIMENSIONS AND IMPRINTING in millimeters

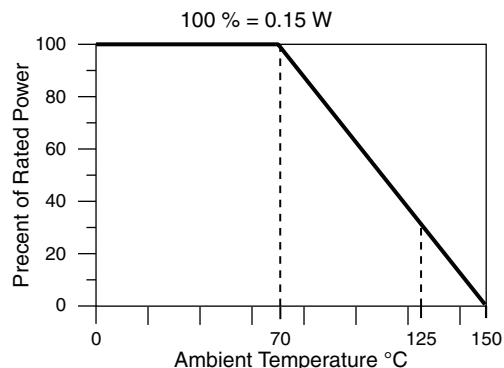


| DIMENSION | MIN. | MAX. |
|-----------|-------|-------|
| A | 0.800 | 1.100 |
| A1 | 0.000 | 0.100 |
| A2 | 0.800 | 1.000 |
| B | 0.100 | 0.018 |
| b1 | 0.400 | 0.500 |
| b2 | 0.200 | 0.250 |
| D | 1.800 | 2.200 |
| E | 1.800 | 2.400 |
| E1 | 1.150 | 1.350 |
| e | 1.300 | - |
| e2 | 0.650 | - |
| L | 0.100 | 0.030 |

MECHANICAL SPECIFICATIONS

| | |
|--------------------------------|----------------------------|
| Resistive Element | Passivated Nichrome |
| Substrate Material | Silicon |
| Body | Epoxy |
| Terminals | Copper with Nickel barrier |
| Plating | SN 60 |
| Marking Resistance to Solvents | Per MIL-PRF-914 |
| Lead (Pb)-free Option | 100 % Sn Matte |
| Lead (Pb)-free Finish | Plated |

DERATING CURVE



GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: MP31002AWS (preferred part number format)

| | | | | | | | | | | | |
|--|--------|---|---|---|---|---|--|---|---|---|---|
| | M | P | 3 | 1 | 0 | 0 | 2 | A | W | S | |
| | M | P | T | 4 | 2 | 0 | 0 | 1 | B | T | 1 |
| GLOBAL MODEL (2 or 3 digits) | LEADS | | RESISTANCE | | | | TOLERANCE AND RATIO TOLERANCE | | PACKAGING | | |
| MP (Tin Lead) | 3 4 | | The first 3 digits are significant figures and the last digit specifies the number of zeros to follow. When like values are required use total resistance. Example: 2001 = 2K (1K/1K) 2002 = 20K (10K/10K) | | | | Abs. Tol. Ratio | | BS = BULK 100 Min 1 Mult WS = WAFFLE 100 Min 1 Mult TAPE AND REEL T1 = 1000 Min 1000 Mult | | |
| MPT (Lead (Pb)-free) (e3) | | | | | | | A = 0.1 % 0.05 % B = 0.1 % 0.1 % C = 0.25 % 0.1 % D = 0.5 % 0.1 % F = 1.0 % 0.5 % | | | | |

Historical Part Number example: MP32002BW (will continue to be accepted)

| | | | | |
|--------|-------|------------|----------------------------------|-----------|
| MP | 3 | 2002 | B | W |
| SERIES | LEADS | RESISTANCE | TOLERANCE AND RATIO TOLERANCE | PACKAGING |



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