MPD/MPDA

Vishay Thin Film

Molded, SOT-143 Resistor Network

Actual Size

FEATURES

- Lead (Pb)-free available
- Tight Ratio Tolerances to 0.05 %
- ± 2 ppm Tracking
- Standard Values Stocked
- Standard SOT-143 Footprint

Pb-free Available

RoHS* COMPLIANT

TYPICAL PERFORMANCE

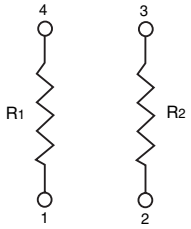
	ABS	TRACKING
TCR	25	2
	ABS	RATIO
TOL	0.1	0.05

VISHAY Thin Film MPD Series Dividers provide ± 2 ppm/°C tracking and a ratio tolerance as tight as ± 0.05 %, small size, and exceptional stability for all surface mount applications. The standard SOT-143 package format with unity and common standard resistance divider ratios provide easy selection for most applications requiring matched pair resistor elements. The ratios listed are available for off the shelf convenience, 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.

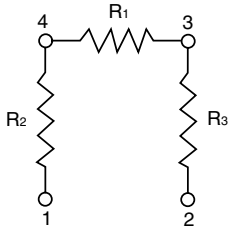
STANDARD VALUES

MODEL	R_2 (Ω)	R_1 (Ω)	R_3 (Ω)
MPD	100K	100K	-
	50K	50K	-
	25K	25K	-
	20K	20K	-
	10K	10K	-
	5K	5K	-
	2K	2K	-
	1K	1K	-
MPDA	10K	10K	10K

MPD SCHEMATIC



MPDA SCHEMATIC



(R1 ref)

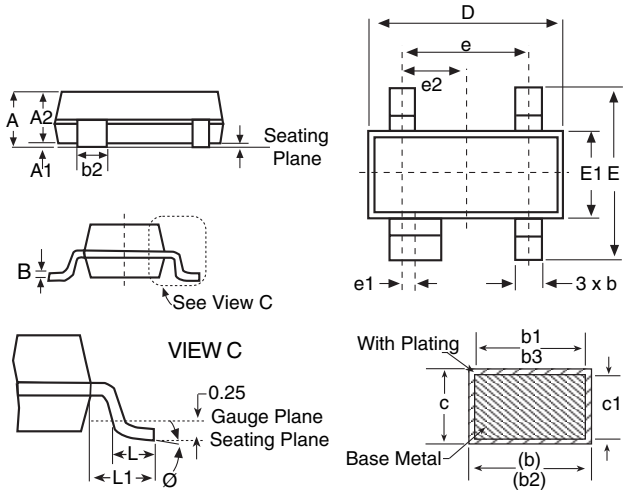
STANDARD ELECTRICAL SPECIFICATIONS

TEST		SPECIFICATIONS	CONDITIONS
Material		Passivated Nichrome	
TCR:	Tracking	± 2 ppm/°C (typical)	- 55 °C to + 125 °C
	Absolute	± 25 ppm/°C	- 55 °C to + 125 °C
Tolerance:	Ratio	± 0.5 % to ± 0.05 %	+ 25 °C
	Absolute	± 1.0 % to ± 0.1 %	+ 25 °C
Power Rating:	Resistor	100 mW	Max. at + 70 °C
	Package	200 mW	Max. at + 70 °C
Stability:	ΔR Absolute	0.10 %	2000 hours at + 70 °C
	ΔR Ratio	0.03 %	2000 hours at + 70 °C
Voltage Coefficient		0.1 ppm/V	
Working Voltage		100 V Max.	
Operating Temperature Range		- 55 °C to + 125 °C	
Storage Temperature Range		- 55 °C to + 125 °C	
Noise		< - 25 dB	
Thermal EMF		0.2 µV/°C	
Shelf Life Stability (Ratio)		50 ppm Max.	1 year at + 25 °C

Note: Tantalum Nitride film is available on special orders

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

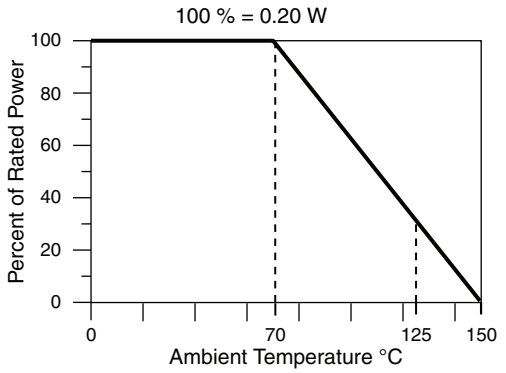
DIMENSIONS AND IMPRINTING in millimeters



DIMENSION	MIN.	NOM.	MAX.
A	0.80	-	1.22
A1	0.05	-	0.15
A2	0.75	0.90	1.07
b	0.30	-	0.50
b1	0.30	0.40	0.45
b2	0.76	-	0.89
b3	0.76	0.80	0.84
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	1.92 BSC		
e1	0.20 BSC		
L	0.40	0.50	0.60
L1	0.54 REF.		
N	4		
Ø	0"	-	8"

MECHANICAL SPECIFICATIONS	
Resistive Element	Passivated Nichrome
Substrate Material	Silicon
Body	Molded epoxy
Terminals	Copper alloy #42 Sn62 plated
Lead Coplanarity	3 Mils Max.
Lead (Pb)-free Option	100 % Sn Matte
Lead (Pb)-free Finish	Plated

DERATING CURVE



GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: MPD1002AWS (preferred part number format)

M	P	D	1	0	0	2	A	W	S
M	P	D	T	1	0	0	3	B	T	1

GLOBAL MODEL (3 or 4 digits)

MPD (Two resistors Tin Lead)
MPDT (Two resistors Lead (Pb)-free) (e3)

RESISTANCE (4 or 8 digits)

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. When dual values are required list both values.

Example:
1002 = 10K (5K/5K)
1003 = 100K (50K/50K)

TOLERANCE AND RATIO TOLERANCE

Abs. Tol.	Ratio
A = ± 0.1 %	± 0.05 %
B = ± 0.1 %	± 0.1 %
C = ± 0.25 %	± 0.1 %
D = ± 0.5 %	± 0.1 %
F = ± 1 %	± 0.5 %

PACKAGING

BS = BULK 100 Min 1 Mult
WS = WAFFLE 100 Min 1 Mult

TAPE AND REEL
T1 = 1000 Min 1000 Mult

Historical Part Number example: MPD1002BW (will continue to be accepted)

MPD	1002	B	W
SERIES	RESISTANCE	TOLERANCE AND RATIO TOLERANCE	PACKAGING

MPD/MPDA

Vishay Thin Film — Molded, SOT-143 Resistor Network

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: MPDAT3002AWS (preferred part number format)

M	P	D	A	3	0	0	2	A	W	S
M	P	D	A	T	3	0	0	2	A	W	S

GLOBAL MODEL (4 or 5 digits)	RESISTANCE	TOLERANCE AND RATIO TOLERANCE	PACKAGING
MPDA (Three equal series resistors Tin/lead) **MPDAT** (Three equal series resistors) (Lead (Pb)-free) (e3)	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: 3002 = Three 10 kΩ resistors	Abs. Tol. / Ratio **A** = ± 0.1 % / ± 0.05 % **B** = ± 0.1 % / ± 0.1 % **C** = ± 0.25 % / ± 0.1 % **D** = ± 0.5 % / ± 0.1 % **F** = ± 1 % / ± 0.5 %	**BS** = BULK 100 Min 1 Mult **WS** = WAFFLE 100 Min 1 Mult TAPE AND REEL **T1** = 1000 Min 1000 Mult

Historical Part Number example: MPDA3002BT (will continue to be accepted)

MPDA	3002	B	T
SERIES	RESISTANCE	TOLERANCE AND RATIO TOLERANCE	PACKAGING

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