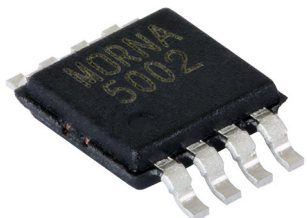


Molded, Compact, 0.65 mm Pitch, Dual-In-Line Thin Film Resistor, Surface-Mount Network 0.01 % Ratio Tolerance and 1 ppm/°C TCR Tracking



LINKS TO ADDITIONAL RESOURCES


[Product Page](#)

[Packages](#)

[Footprints](#)

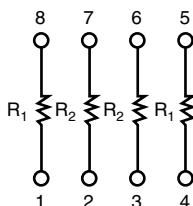
[Order Samples](#)

Vishay Dale Thin Film MORN series dividers provide optimum ratio precision, small size and exceptional stability for most applications. They offer a wide ratio range that is listed in the selection guide and are available for immediate delivery. The tight ratio tolerance offered on the standard ratios will provide exceptional performance throughout life.



ATTENTION!
Observe Precautions for
Handling Electrostatic Sensitive Devices!

SCHEMATIC



FEATURES

- Low TCR tracking of ± 1 ppm/°C and ratio tolerance as low as ± 0.01 %
- 1.10 mm (0.043 mil) maximum seated height
- Excellent long-term ratio stability, ± 0.015 % over 2000 h at 70 °C
- JEDEC® MO-187 variation AA package (25 mil pitch, QSOP)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS*
Available
**HALOGEN
FREE**

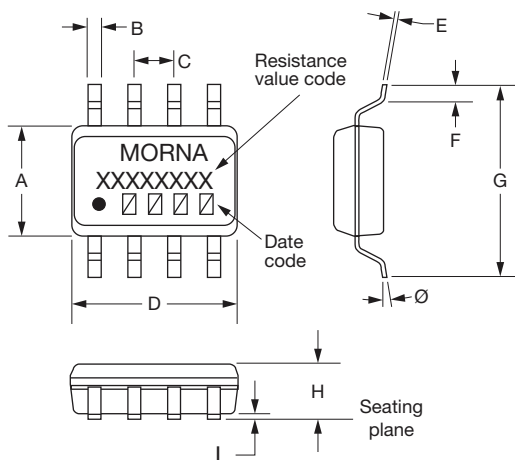
Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

TYPICAL PERFORMANCE

	ABSOLUTE	TRACKING
TCR	25	1
	ABSOLUTE	RATIO
TOL.	0.1	0.01

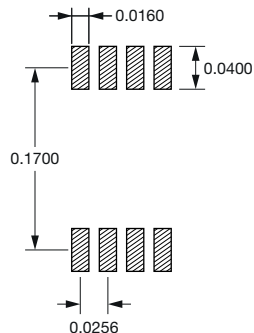
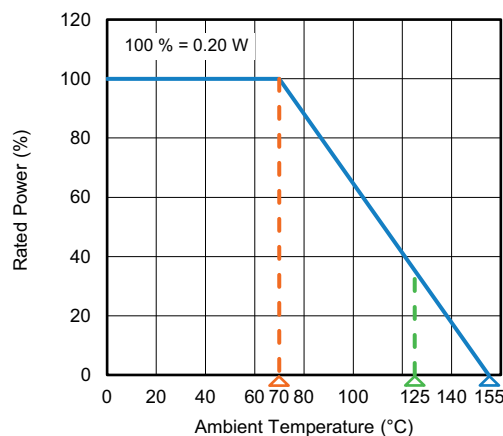
STANDARD ELECTRICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin / lead number	8	-
Resistance range	400 Ω to 100 k Ω per resistor	-
TCR: absolute	± 25 ppm/°C	-55 °C to +125 °C
TCR: tracking	± 1 ppm/°C (typical) ; ± 2 ppm/°C (max.)	-55 °C to +125 °C
Tolerance: absolute	± 0.05 % to ± 1.0 %	+25 °C
Tolerance: ratio	± 0.01 % to ± 0.5 %	+25 °C
Power rating: resistor	50 mW	Maximum at +70 °C
Power rating: package	200 mW	Maximum at +70 °C
Stability: absolute	$\Delta R \pm 0.05$ %	2000 h at +70 °C
Stability: ratio	$\Delta R \pm 0.015$ %	2000 h at +70 °C
Voltage coefficient	0.1 ppm/V (typical)	-
Working voltage	50 V max. not to exceed $\sqrt{P \times R}$	-
Operating temperature range	-55 °C to +125 °C	-
Storage temperature range	-55 °C to +155 °C	-
Noise	≤ -30 dB	-
Thermal EMF	0.08 μ V/°C	-
Shelf life stability: absolute	$\Delta R \pm 0.01$ %	1 year at +25 °C
Shelf life stability: ratio	$\Delta R \pm 0.002$ %	1 year at +25 °C

DIMENSIONS AND IMPRINTING in inches and millimeters


DIMENSION	INCHES	MILLIMETERS
A	0.118	3.00
B	0.0118 ± 0.0086	0.3 ± 0.08
C	0.0256	0.65
D	0.118 max.	3.00
E	0.006 ± 0.003	0.16 ± 0.08
F	0.024 ± 0.008	0.60 ± 0.20
G	0.193	4.90
H	0.043 max.	1.10
I	0.006 max.	0.15 max.
Ø	0° to 8°	0° to 8°

Note

- Marking - Vishay symbol, part number from ordering information

LAND PATTERN DIMENSIONS
**MORN MSOP MO-187AA
(MORN-8)**

DERATING CURVE

MECHANICAL SPECIFICATIONS

Resistive element	Passivated nichrome
Substrate material	Silicon
Body	Molded epoxy
Terminals	Copper alloy
Lead (Pb)-free option	100 % matte tin
Lead (Pb)-free finish	Plated



GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: MORNTD10015001AUF

M	O	R	N	T	D	1	0	0	1	5	0	0	1	A	U	F
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

GLOBAL MODEL (5 digits)	SCHEMATIC	RESISTANCE (8 digits)	TOLERANCE AND RATIO TOLERANCE		PACKAGING
MORNT (Lead (Pb)-free) (e3)	D = divider	First 3 digits are significant figures and the last digit specifies the number of zeros to follow. Example: (List R ₁ first and R ₂ second) 10011002 = 1K / 10K divider	Abs. tol.	Ratio	TAPE AND REEL T0 = 100 min., 100 mult. T1 = 1000 min., 1000 mult. ⁽²⁾ T3 = 300 min., 300 mult. T5 = 500 min., 500 mult. TF = full reel 300 TS = 100 min., 1 mult. UF = TUBED
			Q = ± 0.05 % ⁽¹⁾	± 0.01 %	
			Z = ± 0.1 % ⁽¹⁾	± 0.025 %	
			A = ± 0.1 %	± 0.05 %	
			B = ± 0.1 %	± 0.1 %	
			C = ± 0.25 %	± 0.1 %	
			D = ± 0.5 %	± 0.1 %	
			F = ± 1 %	± 0.5 %	

Notes

- ⁽¹⁾ Tolerance available 1K and up
⁽²⁾ Preferred packaging code



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