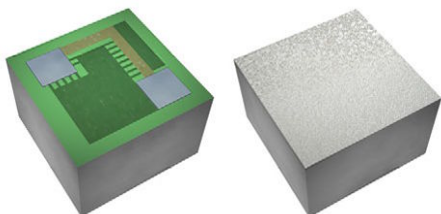


Thin Film, Top-Contact Miniature Resistor



Product may not be to scale

The MSFM series of single-value precision resistors chips offer a small size, wide ohmic value range and high power rating. The MSFM tantalum nitride resistor material offers excellent resistance to high moisture environments. The MSFMs are manufactured using Vishay Electro-Films (EFI) sophisticated thin-film equipment and manufacturing technology. The MSFMs are 100 % electrically tested and visually inspected to MIL-STD-883, method 2032, class H or K.

FEATURES

- Wire bondable
- Small size: 0.015" square
- Case: 0101
- Wide value range: 2.5 Ω to 400 k Ω
- DC power rating up to 125 mW
- Self passivating tantalum nitride film
- Oxidized silicon substrate
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



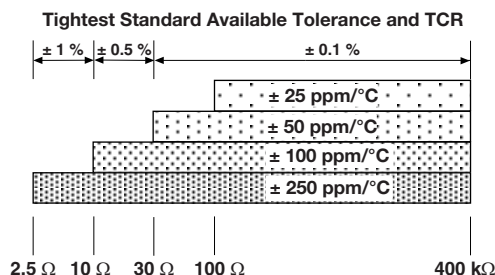
RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

APPLICATIONS

Vishay EFI MSFM top-contact 0.015" square resistor chips are designed for hybrid (chip and wire) assemblies. They are ideally suited for compact designs due to their ultra small form factor.

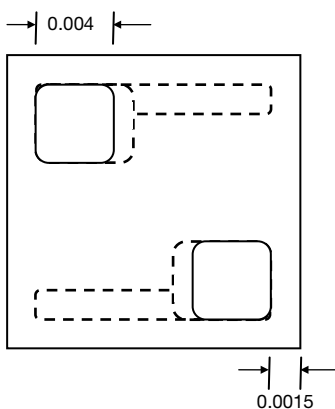
TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES

PARAMETER	VALUE	UNIT
Total Resistance Range	2.5 to 400K	Ω
Standard Tolerances	± 0.1 , ± 0.5 , ± 1	%
TCR	± 25 , ± 50 , ± 100 , ± 250	ppm/ $^{\circ}$ C

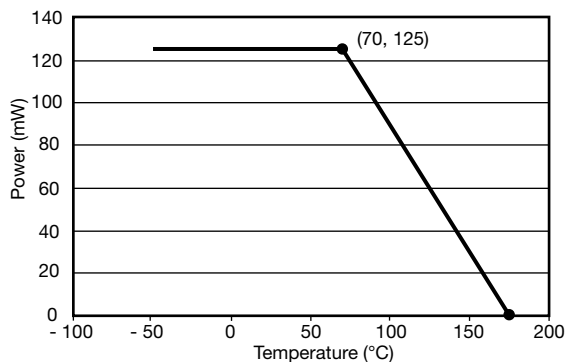


STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	VALUE	UNIT
Noise, MIL-STD-202, Method 308		
> 100 Ω	-35	dB
< 100 Ω	-20	
Moisture Resistance, MIL-STD-202 Method 106	± 0.5 max. $\Delta R/R$	%
Stability, 1000 h, +70 $^{\circ}$ C, 125 mW	± 0.5 max. $\Delta R/R$	%
Operating Temperature Range	-55 to +125	$^{\circ}$ C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	± 0.2 max. $\Delta R/R$	%
High Temperature Exposure, +150 $^{\circ}$ C, 100 h	± 0.5 max. $\Delta R/R$	%
Dielectric Voltage Breakdown	200	V
Insulation Resistance	10^{12} min.	Ω
Operating Voltage	100 max.	V
DC Power Rating up to +70 $^{\circ}$ C (Linear derated to zero at +175 $^{\circ}$ C)	0.125	W
5x Rated Power Short-Time Overload, +25 $^{\circ}$ C, 5 s	± 0.25 max. $\Delta R/R$	%

DIMENSIONS in inches


MECHANICAL SPECIFICATIONS	
PARAMETER	VALUE
Chip Size	0.015" x 0.015" $\pm$ 0.002" (0.381 mm x 0.381 mm $\pm$ 0.05 mm)
Chip Thickness	0.010" $\pm$ 0.002" (0.254 mm $\pm$ 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum oxide
Resistor Material	Tantalum nitride, self-passivating
Bonding Pad Size	0.004" x 0.004" (0.1 mm x 0.1 mm)
Number of Pads	2
Pad Material	10 kÅ minimum aluminum (Au optional)
Backing	None, lapped silicon

POWER DERATING CURVE


GLOBAL PART NUMBER INFORMATION																
Global Part Number: MSFM10001FKANHWS																
Global Part Number Description: MSFM 10K 1 %, 100 ppm/°C, Al, no back metal, class H, WS																
M	S	F	M	1	0	0	0	1	F	K	A	N	H	W	S	
MODEL	RESISTANCE		RESISTANCE MULTIPLIER CODE		TOLERANCE CODE (%)		TCR (ppm/°C)		TERMINATION		BACK METAL		VISUAL CLASS		PACKAGING CODE	
MSFM 15 x 15 size Ta2N on silicon	First 4 digits are significant figures of resistance		C = 0.001 B = 0.01 A = 0.1 0 = 1 1 = 10 2 = 100		B = 0.1 C = 0.25 D = 0.5 F = 1.0 G = 2.0 H = 2.5 J = 5.0 K = 10.0		E = ± 25 C = ± 50 K = ± 100 M = ± 250		G = Au A = Al		G = Au N = none		H = class H K = class K		WS = waffle pack 100 min., 1 mult	



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