

Vishay BCcomponents

Professional Thin Film Leaded Resistors



FEATURES

- Technology: metal film
- · Professional resistors in small outlines
- Low noise
- · Material categorization: for definitions of compliance please www.vishav.com/doc?99912



FREE

DESCRIPTION

A homogeneous film of metal alloy is deposited on a high grade ceramic body. After a helical groove has been cut in the resistive layer, tinned connecting wires of electrolytic copper are welded to the end-caps. The resistors are coated with lacquer which provides electrical, mechanical, and climatic protection. Four or five color code rings designate the resistance value and tolerance according to IEC 60062. Suitable replacements for MRS16 and MRS25 are MBA/SMA 0204 and MBB/SMA 0207 professional.

APPLICATIONS

All general purpose applications

TECHNICAL SPECIFICATIONS					
DESCRIPTION	MRS16	MRS25			
DIN size	0204	0207			
CECC size	A	В			
Resistance range	4.99 Ω to 1 M Ω	1 Ω to 10 MΩ			
Resistance tolerance	± 1 %				
Temperature coefficient	± 50 ppm/K				
Rated dissipation, $P_{70}^{\ (1)}$	0.4 W	0.6 W			
Operating voltage, U _{max.} AC/DC	200 V	350 V			
Operating temperature range (1)	-55 °C to 155 °C				
Peak permissible film temperature (1)	155 °C				
Insulation voltage:					
1 min; U _{ins}	300 V	500 V			
continuous	75 V	75 V			

Note

⁽¹⁾ Please refer to APPLICATION INFORMATION below.



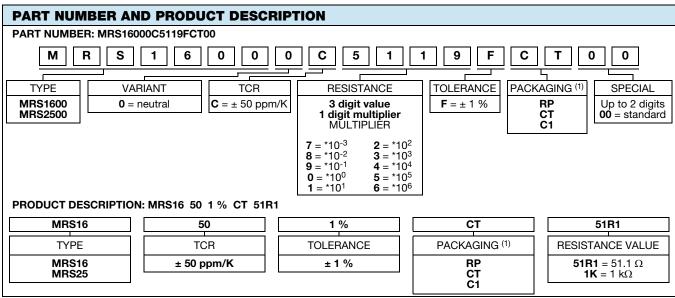
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APPLICATION INFORMATION

The power dissipation on the resistor generates a temperature rise against the local ambient, depending on the heat flow support of the printed-circuit board (thermal resistance). The rated dissipation applies only if the permitted film temperature is not exceeded. Furthermore, a high level of ambient temperature or of power dissipation may raise the temperature of the solder joint, hence special solder alloys or board materials may be required to maintain the reliability of the assembly.

These resistors do not feature a limited lifetime when operated within the permissible limits. However, resistance value drift increasing over operating time may result in exceeding a limit acceptable to the specific application, thereby establishing a functional lifetime. The designer may estimate the performance of the particular resistor application or set certain load and temperature limits in order to maintain a desired stability.

MAXIMUM RESISTANCE CHANGE AT RATED DISSIPATION				
Operation mode		Power		
Climatic category		-55 °C / +155 °C / 56 days		
Rated dissipation, P ₇₀	MRS16	0.4 W		
	MRS25	0.6 W		
Applied maximum film temperature, 8	F max.	155 °C		
Max. resistance change at rated dissipation $ \Delta R/R $ max., after:	MRS16	4.99 Ω to 1 M Ω		
	1000 h	± (0.5 % R + 0.05 Ω)		
	MRS25	1 Ω to 10 MΩ		
	1000 h	± (0.5 % R + 0.05 Ω)		



Notes

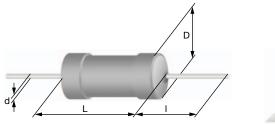
- The PART NUMBER is shown to facilitate the introduction of a unified part numbering system for ordering products
- (1) Please refer packaging table

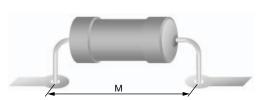
PACKAGING						
TYPE	CODE	QUANTITY	PACKAGING STYLE	WIDTH	PITCH	DIMENSIONS
	53 mm			184 mm x 75 mm x 42 mm		
MRS16		53 mm	5 mm	330 mm x 75 mm x 55 mm		
MRS25	RP	5000	Taped acc. to IEC 60286-1 on a reel			242 mm x 76 mm x 86 mm



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DIMENSIONS





DIMENSIONS (Leaded Resistor Types, Mass and Relevant Physical Dimensions)						
TYPE	D _{max.} (mm)	L _{max.} (mm)	d _{nom.} (mm)	I _{min.} (mm)	M _{min.} (mm)	MASS (mg)
MRS16	1.6	3.6	0.5	29.0	5.0	125
MRS25	2.5	6.5	0.6	28.0	10.0	220

12NC INFORMATION FOR HISTORICAL CODING REFERENCE

- The resistors have a 12 digit numeric code starting with 2322 15.
- The subsequent 2 digits indicate the resistor type and packaging; see the 12NC Ordering Code table.
- The remaining 4 digits indicate the resistance value:
 - The first 3 digits indicate the resistance value.
 - The last digit indicates the resistance decade in accordance with the 12NC Indicating Resistance Decade table.

Last Digit of 12NC Indicating Resistance Decade

RESISTANCE DECADE	LAST DIGIT
1 Ω to 9.76 Ω	8
10 Ω to 97.6 Ω	9
100 Ω to 976 Ω	1
1 k Ω to 9.76 k Ω	2
10 k Ω to 97.6 k Ω	3
100 k Ω to 976 k Ω	4
1 M Ω to 9.76 M Ω	5
10 MΩ	6

12NC Example

The 12NC of a MRS16 resistor with value 750 Ω , supplied on a bandolier of 1000 units in ammopack is: 2322 157 17501.

12NC (Resistors Type and Packaging)				
	2322 15			
TYPE	BANDOLIER IN AMMOPACK		BANDOLIER ON REEL	
	1000 UNITS	5000 UNITS	5000 UNITS	
MRS16	7 1	7 2	7 3	
MRS25	6 1	6 2	6 3	



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RESISTOR-0125-A MBA02040C3249FC100 MRS16000C2200FCT00 MRS16000C1501FCT00 MRS16000C6803FCT00

MRS16000C2703FCT00 MRS16000C4703FCT00 MBA02040C1209FCT00 MBA02040C2701FCT00 MBA02040C3301FCT00

MBA02040C3901FCT00 MBA02040C5600FCT00 MBA02040C6809FC100 MBB02070D9312BCT00 MBA02040C1008FCT00

MBA02040C1200FCT00 MBA02040C2202FCT00 MBA02040C4754FRP00 MBA02040C6041FRP00 MBB02070C1821FRP00

MBB0207IC1001FCT00 MFP1-10RJI MFP2-100KJI MFR4-1K0FI MFR4-220RFI MFR4-33RFI BPC5563K BPR5473J W21-1R2JI W31-R056JA1 WR404140A6803J4100 MFR3-47KFC MFR4-1R0FI MFR4-390RFI MRS25000C2373FC100 CF18JT47K0

MRS25000C1051FC100 MFR5-15RFI MBB0207VD1004BC100 BPC10203J RSF12JT150R RC14JT39K0 MBA02040C6980FC100

MRS25000C2002FC100 MRS25000C8200FC100 MBA02040C1878FC100 MBE04140C1200FC100 MBA02040C1600FC100

MBA02040C7508FC100 TNP10SC20R0FE