

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	Α	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; <i>U</i> _{ins}	300 V	500 V			
continuous	75 V	75 V			

Note

⁽¹⁾ Please refer to APPLICATION INFORMATION below.



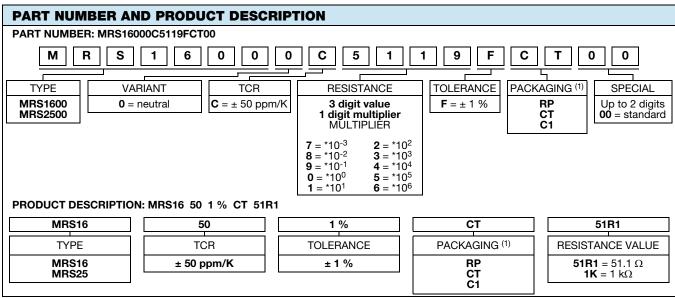
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APPLICATION INFORMATION

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

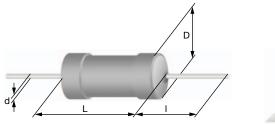
- The PART NUMBER is shown to facilitate the introduction of a unified part numbering system for ordering products
- (1) Please refer packaging table

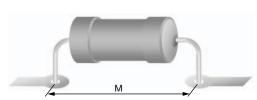
PACKAGING						
TYPE	CODE	QUANTITY	PACKAGING STYLE	WIDTH	PITCH	DIMENSIONS
	C1	C1 1000 Taped acc. to IEC 60286-1			184 mm x 75 mm x 42 mm	
MRS16	RS16 CT 5000 fan-folded in a box	53 mm	5 mm	330 mm x 75 mm x 55 mm		
MRS25	RP	5000	Taped acc. to IEC 60286-1 on a reel			242 mm x 76 mm x 86 mm



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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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FRN25J330R FRN50J1R0S H4100RBYA H415RBZA H41K1BYA H41K5BYA H41M0BDA H420R5BCA H421R5BZA H4221RBYA H424K3BDA H442K2BDA H45K62BZA H4634RBZA H473R2BZA H4931KBZA H8160KFDA H8274KBZA H82K0FDA H82K0FZA H87K5DYA RLR05C6201GS HR01623J HR01682J 270-1.69M-RC LR0204F110R LR0204F18R LR0204F20K LR0204F20R LR0204F510R LR1F121R LR1F133K LR1F383R LR1F3K01 LR1F4K75 LR2F330RJIT LR2F51R LR2F910R ERX-2SZJR20E SQMR74K7J FMF-25FTF52-100K FRN50J100RS FRN50J470RS H4100RBZA H414R3BZA H415KBYA H4174KBZA H4174RBDA H41K21BYA H41K43BDA