# Vishay BCcomponents



# **Professional Leaded Resistors**



## **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 colour code rings designate the resistance value and tolerance according to IEC 60 062. Suitable replacements for MRS16 and MRS25 are MBA/SMA 0204 and MBB/SMA 0207 professional.

### **FEATURES**

- · Professional resistors in small outlines
- Low noise
- Lead (Pb)-free solder contacts
- Pure tin plating provides compatibility with lead (Pb)-free and lead containing soldering processes
- Compatible with "Restriction of the use of Hazardous Substances" (RoHS) directive 2002/95/EC (issue 2004)

#### **APPLICATIONS**

• All general purpose applications

TECHNICAL SPECIFICATIONS				
DESCRIPTION	VALUE			
DESCRIPTION	MRS16	MRS25		
Resistance Range	4.99 Ω to 1 MΩ	1 Ω to 10 MΩ		
Resistance Tolerance and Series	± 1 %; E24/	/E96 series		
Maximum Dissipation at T <sub>amb</sub> = 70 °C	0.4 W	0.6 W		
Thermal Resistance (R <sub>th</sub> )	170 K/W	150 K/W		
Temperature Coefficient	± 50 ppm/K			
Maximum Permissible Voltage (DC or RMS)	200 V	350 V		
Basic Specifications	IEC 60115-1 and 60115-2			
Climatic Category (IEC 60068)	55/155/56			
Max. Resistance Change for Resistance Range, $\Delta R$ max., After:				
Load:				
<i>R</i> ≤ 100 kΩ	$\pm (0.5 \% R + 0.05 \Omega)$	$\pm (0.5 \% R + 0.05 \Omega)$		
$R > 100 \text{ k}\Omega$	$\pm (1 \% R + 0.05 \Omega)$	$\pm (0.5 \% R + 0.05 \Omega)$		
Climatic Tests:				
<i>R</i> ≤ 100 kΩ	$\pm$ (0.5 % R + 0.05 $\Omega$ )	$\pm (0.5 \% R + 0.05 \Omega)$		
$R > 100 \text{ k}\Omega$	$\pm (1 \% R + 0.05 \Omega)$	$\pm (0.5 \% R + 0.05 \Omega)$		
Soldering:				
$R \le 100 \text{ k}\Omega$	$\pm$ (0.1 % R + 0.05 $\Omega$ )	$\pm (0.1 \% R + 0.05 \Omega)$		
R > 100 kΩ	$\pm (0.25 \% R + 0.05 \Omega)$	$\pm (0.1 \% R + 0.05 \Omega)$		
Short Time Overload	$\pm (0.25 \% R + 0.05 \Omega)$	$\pm (0.25 \% R + 0.05 \Omega)$		

PACKAGING				
MODEL	REEL		BOX	
	PIECES/REEL	CODE	PIECES/BOX	CODE
MRS16	5000	RP	1000 5000	C1 CT
MRS25	5000	RP	1000 5000	C1 CT

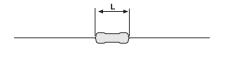
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Revision: 20-Feb-08



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#### **DIMENSIONS**







DIMENSIONS - leaded resistor types, mass and relevant physical dimensions					
ТҮРЕ	D <sub>max.</sub> (mm)	L <sub>max.</sub> (mm)	d <sub>nom.</sub> (mm)	M <sub>min.</sub> (mm)	MASS (mg)
MRS16	1.6	3.6	0.5	5.0	125
MRS25	2.5	6.3	0.6	10.0	220

### **12NC INFORMATION**

- 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.

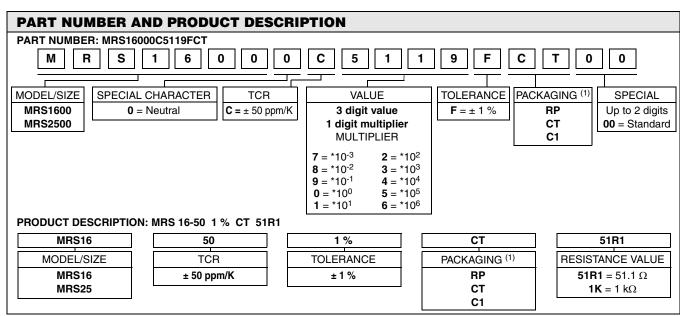
## **Last Digit of 12NC Indicating Resistance Decade**

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

## 12NC Example

The 12NC of a MRS16 resistor, value 750  $\Omega$ , on a bandolier of 1000 units in ammopack is: 2322 157 17501.

12NC - resistors type and packaging				
	ORDERING CODE 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	



(1) Please refer packaging table

The PART NUMBER is shown to facilitate the introduction of a unified part numbering system for ordering products



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Revision: 18-Jul-08

Document Number: 91000