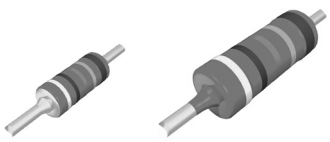
Professional Leaded Resistors



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)

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.

APPLICATIONS

- All general purpose applications

TECHNICAL SPECIFICATIONS

DESCRIPTION	VALUE	
	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_{amb} = 70 °C	0.4 W	0.6 W
Thermal Resistance (R_{th})	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, ΔR max., After:		
Load:		
$R \leq 100$ kΩ	± (0.5 % R + 0.05 Ω)	± (0.5 % R + 0.05 Ω)
$R > 100$ kΩ	± (1 % R + 0.05 Ω)	± (0.5 % R + 0.05 Ω)
Climatic Tests:		
$R \leq 100$ kΩ	± (0.5 % R + 0.05 Ω)	± (0.5 % R + 0.05 Ω)
$R > 100$ kΩ	± (1 % R + 0.05 Ω)	± (0.5 % R + 0.05 Ω)
Soldering:		
$R \leq 100$ kΩ	± (0.1 % R + 0.05 Ω)	± (0.1 % R + 0.05 Ω)
$R > 100$ kΩ	± (0.25 % R + 0.05 Ω)	± (0.1 % R + 0.05 Ω)
Short Time Overload	± (0.25 % R + 0.05 Ω)	± (0.25 % R + 0.05 Ω)

PACKAGING

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

For technical questions, contact: filmresistors.leaded@vishay.com
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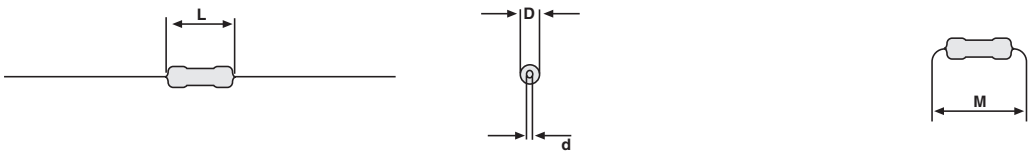
DIMENSIONS



DIMENSIONS - leaded resistor types, mass and relevant physical dimensions					
TYPE	$D_{max.}$ (mm)	$L_{max.}$ (mm)	$d_{nom.}$ (mm)	$M_{min.}$ (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 Ω to 9.76 Ω	8
10 Ω to 97.6 Ω	9
100 Ω to 976 Ω	1
1 kΩ to 9.76 kΩ	2
10 kΩ to 97.6 kΩ	3
100 kΩ to 976 kΩ	4
1 MΩ to 9.76 MΩ	5
10 MΩ	6

12NC Example

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

12NC - resistors type and packaging			
TYPE	ORDERING CODE 2322 15.		
	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....

PART NUMBER AND PRODUCT DESCRIPTION

PART NUMBER: MRS16000C5119FCT

M	R	S	1	6	0	0	0	C	5	1	1	9	F	C	T	0	0

MODEL/SIZE	SPECIAL CHARACTER	TCR	VALUE	TOLERANCE	PACKAGING (1)	SPECIAL
MRS1600 **MRS2500**	**0** = Neutral	**C =** ± 50 ppm/K	**3 digit value** **1 digit multiplier** MULTIPLIER **7** = $*10^{-3}$ **2** = $*10^{2}$ **8** = $*10^{-2}$ **3** = $*10^{3}$ **9** = $*10^{-1}$ **4** = $*10^{4}$ **0** = $*10^{0}$ **5** = $*10^{5}$ **1** = $*10^{1}$ **6** = $*10^{6}$	**F** = ± 1 %	**RP** **CT** **C1**	Up to 2 digits **00** = Standard

PRODUCT DESCRIPTION: MRS 16-50 1 % CT 51R1

MRS16	50	1 %	CT	51R1
MODEL/SIZE	TCR	TOLERANCE	PACKAGING (1)	RESISTANCE VALUE
MRS16 **MRS25**	**± 50 ppm/K**	**± 1 %**	**RP** **CT** **C1**	**51R1** = 51.1 Ω **1K** = 1 kΩ

Notes:

(1) Please refer packaging table

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

Disclaimer

All product specifications and data are subject to change without notice.

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