

Metal Film Resistor

.25 & .40 Watt

1% and 5%

5063J Series

DESCRIPTION

A homogeneous film of metal alloy is deposited on a high grade BALOX ceramic body. After a helical groove has been cut in the resistive layer; tin plated, copper leads are welded onto the end caps. The resistors are coated with a blue lacquer which provides electrical, mechanical, and climatic protection. The encapsulation is resistant to all cleaning solvents in accordance with MIL-STD-202E, Method 215 and IEC 68-2-45.

MASS: 13 g per 100 units

MOUNTING:

The resistors are suitable for processing on automatic insertion equipment in addition to cutting and bending machines. The minimum bending for this series is 5 mm (.200").

MARKING:

The nominal resistance and tolerance are marked on the resistors with a four band color code for 5% resistors and a five band color code for 1% resistors as described in "General Introduction - Leaded Resistors".

QUICK REFERENCE DATA

Resistance Range	.22Ω to 10 MΩ; E24/E96 Series See Table II
Resistance Tolerance	± 5 (E24) ± 1% (E24/E96)
Temperature Coefficient	≤ ± 100 ppm/°C
Abs. Max. Dissipation at $T_{amb} = 70^{\circ}\text{C}$ Normal Operation Long Term Operation	See Table III 0.40 W 0.25 W
Thermal Resistance, R_{th}	200 °C/W
Max. Continuous Operating Voltage	200 V (DC or RMS)
Noise $R \leq 1 \text{ M}\Omega$	max. 0.1 μV/V
Operating Temperature Range Normal Operation Long Term Operation	-55°C to +155°C -55°C to +125°C
Basic Specification	IEC 115-1, DIN 44 061, DIN 45 921 T.107
Stability ($\Delta R/R$ max) after: Load Normal Operation Long Term Operation Climatic Tests Resistance to Soldering Heat Short Time Overload, 400 V max.	 ±0.50% + 0.05 Ω ±0.25% + 0.05 Ω ±1.00% + 0.05 Ω ±0.25% + 0.05 Ω ±0.25% + 0.05 Ω

Metal Film Resistor
.25 to .40 Watt
1% & 5%

5063J Series

DISSIPATION

Maximum power dissipation as a function of ambient temperature (Derating Curves) is shown in Fig 2 for Normal Operation and Fig 3 for Long Term Operation.

CURRENT NOISE:

Fig 4 gives the Current Noise for the 5063J Series. The current noise is measured in accordance with DIN 44049 Part 1 and IEC 195. Maximum values are for 99.8% of all resistors.

Mechanical Data

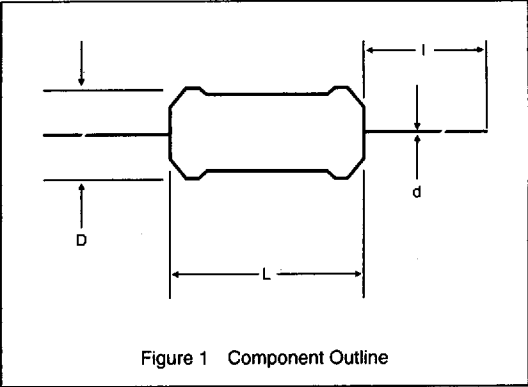


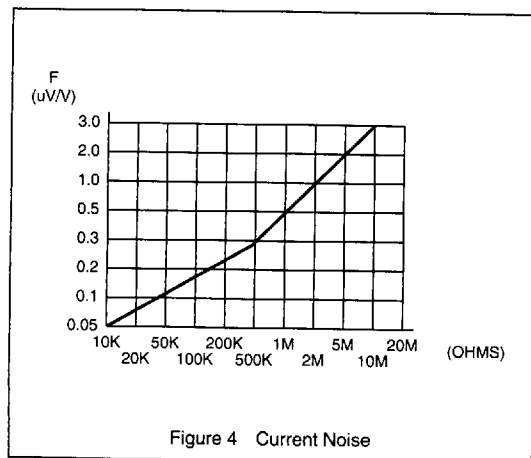
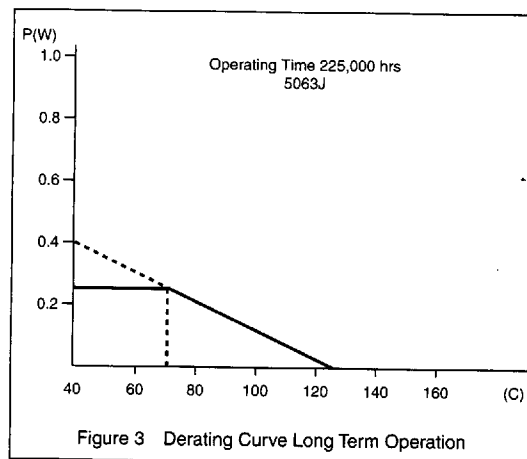
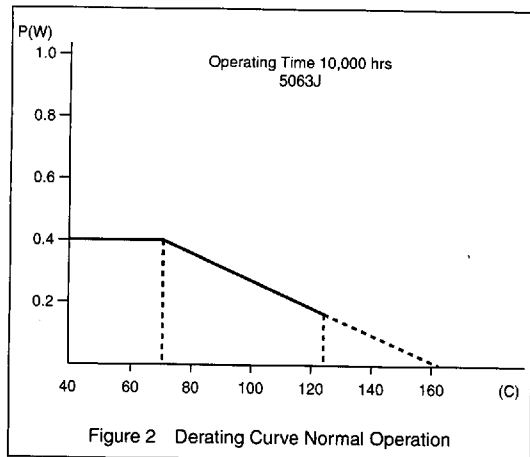
Table I Components Dimensions
Value in inches (mm)

TYPE	D Max	L Max	d Nom	l Min
5063J	0.063 (1.6)	0.142 (3.6)	0.020 (0.5)	1.14 (29)

Metal Film Resistor

.25 to .40 Watt
1% & 5%

5063J Series



Metal Film Resistor
.25 to .40 Watt
1% & 5%

5063J Series

ELECTRICAL DATA

Table II Resistance Ranges and TCR

Type	TCR ppm/°C	Tolerance 5%	Tolerance 1%
5063J	100	.22 Ω - 10 M Ω	1 Ω - 10 M Ω
Series		E24	E24/E96

Table III Electrical Data

Type	Operation	Rated Power	Surface Temp C	Max at P70	Resistance R/R	Change in %	Permissible against	Voltage ambient
				1,000 hr	8,000 hr	225,000 hr	1 min	Constant
5063J	Normal	.40W	155	0.50	1.0	—	300	75
	Long Term	.23W	125	0.25	0.50	1.5		

Jumpers

A "0 ohm, Jumper" is available in the 5063J Series. This jumper has a maximum resistance value of $\leq 20\text{m}\Omega$ and has a maximum current rating of 2 A.

Metal Film Resistor

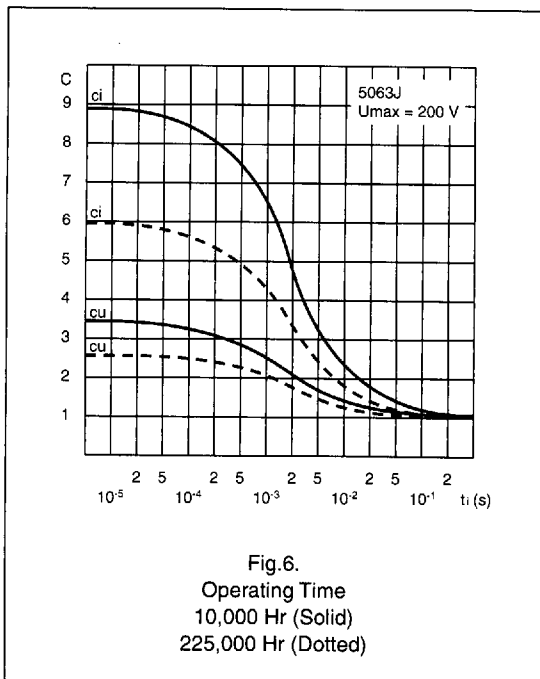
.25 to .40 Watt

1% & 5%

5063J Series

PULSE LOAD BEHAVIOR

The Pulse Load Behavior must meet the requirements of Equations, 1, 2, and 3 for the pulse load to be permissible for this series. The needed graph and wave form definitions are found in Figs. 5 and 6.



Definitions:

P_U : Permissible constant load at a given ambient temp.

U_a

t_p : Period Time

R : Resistance Value

U_i : Peak Voltage of the pulse

t_i : Pulse Duration

U_{ig} : DC Voltage between pulses

t_a : Time at the beginning of the pulse period

t_e : Time at the end of the pulse period

U_{max} : Limiting voltage for continuous operation of the resistor

c_i : Factor independent on time for exceeding the rated dissipation.

(1)

$$\frac{1}{t_p R} \int_{t_a}^{t_e} U_i^2 dt \leq P_v$$

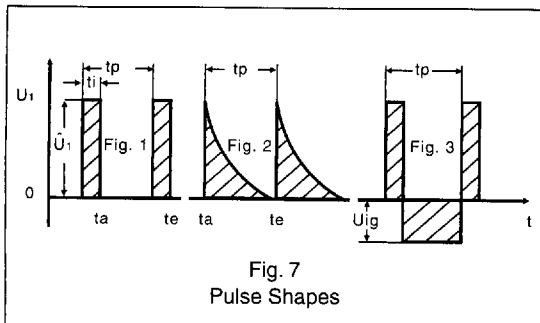
(2)

$$|U_i| \leq c_i \cdot \sqrt{P_v \cdot R}$$

(3)

$$|U_i| \leq C_u \cdot U_{max}$$

Example: See Pulse Loading under "B0207," page 209



Metal Film Resistor
.25 to .40 Watt
1% & 5%

5063J Series**ORDERING INFORMATION**

North American Part Number

Type	Tol	TCR	Resistance Range	Part Number
5063J	5%	100	.22Ω - 10MΩ	5063JD.....J
	1%	100	1Ω - 10MΩ	5063JD.....F

The "....." in the part number represents the value of the resistor. The format for the value is composed of five digits. Place the significant figures, separated by a "R", "K", or "M" as the decimal place, and finish out the remainder of the five digits with "0's" if required. For example: 100Ω is 100R0, 51.1KΩ is 51K10, etc.

PACKAGING

The 5063J Series is available in 5000 reels, 5000 ammo, and 1000 ammo.