

# Metal Film Leadless Fixed Resistors

## Performance Specification

Temperature Coefficient	±15, ±25, ±50, ±100 PPM/°C
Short Time Overload	±(0.5% + 0.05Ω)Max, with no evidence of mechanical damage.
Resistance to Soldering	±(0.5% + 0.05Ω)Max, with no evidence of mechanical damage.
Pulse Overload	±(1.0% + 0.05Ω)Max, with no evidence of mechanical damage.
Load Life	±(3.0% + 0.05Ω)Max, with no evidence of mechanical damage.
Load Life in Humidity	±(2.0% + 0.05Ω)Max, with no evidence of mechanical damage.
Solderability	95% Coverage Min.

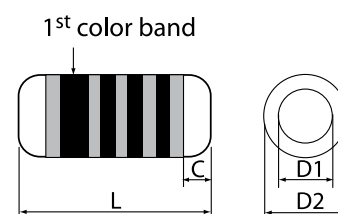
Ordering Procedure: Ex.: MELF Metal Film type 0204 1/4W-S +/-0.1% 15PPM 100Ω Tape/Reel 3000

M	2	4	S	4	B	B	1	0	0	0	T	3	0			
Type: M12 = Metal Film 0102 M24 = Metal Film 0204 M27 = Metal Film 0207 M39 = Metal Film 0309			Wattage: Normal size: W4 = 1/4W W2 = 1/2W Small size: S8 = 1/8W-S S4 = 1/4W-S S2 = 1/2W-S 1S = 1W-S Extra Small size: 1U = 1W-SS 2U = 2W-SS			Resistance Value: • E-24 series: 1 <sup>st</sup> digit is "0" 2 <sup>nd</sup> & 3 <sup>rd</sup> digits are the significant figures of the resistance 4 <sup>th</sup> indicates the number of zeros "J" ~0.1, "K" ~ 0.01 Ex. 4.7Ω ~ 47J, 4.7KΩ ~ 472 • E-96 series: 1 <sup>st</sup> to 3 <sup>rd</sup> digits are the significant figures of the resistance and the 4 <sup>th</sup> digit indicates the number of zeros. Ex.: 1.33KΩ = 1331			Tolerance: B = ±0.1% C = ±0.25% D = ±0.5% F = ±1% G = ±2% J = ±5%			Packing Type: T = Tape/Reel			Packing Qty: 2 = 2,000 pcs. 3 = 3,000 pcs. B = 2,500 pcs.	
						B = 15PPM C = 25PPM F = 50PPM G = 100PPM			Additional Information: 0 = NIL							

## Features

- SMD metal film resistor
- High terminal strength
- High stability and Low temperature coefficient
- Excellent solderability
- Suitable for Flow, Reflow and hand soldering

Part No.	Power Rating at 70°C	Dimension (mm)			
		D1	D2(Max)	L±0.2	C(Min)
<b>Normal size</b>					
M27W4	1/4W (0.25W)	2.2±0.2	2.4	5.9	0.5
M39W2	1/2W (0.50W)	3.2±0.2	3.4	8.5	0.5
<b>Small size</b>					
M12S8	1/8W(0.125W)	1.2±0.05	1.4	2±0.1	0.4
M24S4	1/4W (0.25W)	1.4±0.15	1.55	3.5	0.5
M27S2	1/2W (0.50W)	2.2±0.2	2.4	5.9	0.5
M271U	1W	2.2±0.1	2.4	5.9	0.5
M391S	1W	3.2±0.2	3.4	8.5	0.5
M392U	2W	3.2±0.2	3.4	8.5	0.5



## Metal Film Leadless Fixed Resistors

### General Specification

Part No.	Power Rating at 70°C	Tolerance %	T.C.R.	Resistance Range	Max Working Voltage	Max Overload Voltage	Std Packing (Reel)
<b>Normal size</b>							
M27W4	1/4W (0.25W)	± 1%	± 100PPM/°C	5.11MΩ ~ 10MΩ	250	500	2,000
		± 5%	± 100PPM/°C	0.1Ω ~ 0.99Ω			
		± 1%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 2%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 1%	± 25PPM/°C	100Ω ~ 560KΩ			
M39W2	1/2W (0.50W)	± 1%	± 100PPM/°C	5.11MΩ ~ 10MΩ	350	700	2,500
		± 5%	± 100PPM/°C	0.1Ω ~ 0.99Ω			
		± 1%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 2%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 1%	± 25PPM/°C	100Ω ~ 560KΩ			
<b>Small size</b>							
M12S8	1/8W(0.125W)	± 1%	± 100PPM/°C	1Ω ~ 3.9 Ω	150	300	3,000
		± 5%	± 100PPM/°C	0.22Ω ~ 0.91Ω			
		± 1%	± 50PPM/°C	4Ω ~ 560KΩ			
M24S4	1/4W (0.25W)	± 1%	± 100PPM/°C	5.11MΩ ~ 10MΩ	200	400	3,000
		± 5%	± 100PPM/°C	0.1Ω ~ 0.99Ω			
		± 1%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 2%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 1%	± 25PPM/°C	100Ω ~ 560KΩ			
M27S2	1/2W (0.50W)	± 1%	± 100PPM/°C	5.11MΩ ~ 10MΩ	250	500	3,000
		± 5%	± 100PPM/°C	0.1Ω ~ 0.99Ω			
		± 1%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 2%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 1%	± 25PPM/°C	100Ω ~ 560KΩ			
M271U	1W	± 1%	± 100PPM/°C	0.1Ω ~ 0.99Ω 5.11MΩ ~ 10MΩ	350	700	2,000
		± 5%	± 100PPM/°C	0.1Ω ~ 0.99Ω			
		± 1%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 2%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 1%	± 25PPM/°C	100Ω ~ 560KΩ			
M391S	1W	± 1%	± 100PPM/°C	5.11MΩ ~ 10MΩ	350	700	2,500
		± 5%	± 100PPM/°C	0.1Ω ~ 0.99Ω			
		± 1%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 2%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 1%	± 25PPM/°C	100Ω ~ 560KΩ			
M392U	2W	± 1%	± 100PPM/°C	5.11MΩ ~ 10MΩ	350	700	2,500
		± 5%	± 100PPM/°C	0.1Ω ~ 0.99Ω			
		± 1%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 2%	± 50PPM/°C	1Ω ~ 5.1MΩ			
		± 1%	± 25PPM/°C	100Ω ~ 560KΩ			

# Metal Film Leadless Fixed Resistors

**Special Tolerance & T.C.R.**

Part No.	Power Rating at 70°C	Tolerance %	T.C.R.	Resistance Range	Max Working Voltage	Max Overload Voltage	Std Packing (Reel)
<b>Normal size</b>							
M27W4	1/4W (0.25W)	± 0.1%	± 50PPM/°C	100Ω ~ 560KΩ	250	500	2,000
		± 0.25%	± 50PPM/°C	10Ω ~ 1MΩ			
		± 0.5%	± 50PPM/°C	10Ω ~ 1MΩ			
		± 0.1%	± 25PPM/°C	100Ω ~ 560KΩ			
		± 0.25%	± 25PPM/°C	100Ω ~ 560KΩ			
		± 0.5%	± 25PPM/°C	100Ω ~ 560KΩ			
		± 0.1%	± 15PPM/°C	100Ω ~ 100KΩ			
M39W2	1/2W (0.50W)	± 0.1%	± 50PPM/°C	100Ω ~ 560KΩ	350	700	2,500
		± 0.25%	± 50PPM/°C	10Ω ~ 1MΩ			
		± 0.5%	± 50PPM/°C	10Ω ~ 1MΩ			
		± 0.1%	± 25PPM/°C	100Ω ~ 560KΩ			
		± 0.25%	± 25PPM/°C	100Ω ~ 560KΩ			
		± 0.5%	± 25PPM/°C	100Ω ~ 560KΩ			
		± 0.1%	± 15PPM/°C	100Ω ~ 100KΩ			
M39W2	1/2W (0.50W)	± 0.25%	± 15PPM/°C	100Ω ~ 330KΩ	350	700	2,500
		± 0.1%	± 50PPM/°C	100Ω ~ 560KΩ			
		± 0.25%	± 50PPM/°C	10Ω ~ 1MΩ			
		± 0.5%	± 50PPM/°C	10Ω ~ 1MΩ			
		± 0.1%	± 25PPM/°C	100Ω ~ 560KΩ			
		± 0.25%	± 25PPM/°C	100Ω ~ 560KΩ			
		± 0.5%	± 25PPM/°C	100Ω ~ 560KΩ			
<b>Small size</b>							
M12S8	1/8W (0.125W)	± 0.1%	± 50PPM/°C	100Ω ~ 560KΩ	150	300	3,000
		± 0.1%	± 25PPM/°C	100Ω ~ 100KΩ			
		± 0.25%	± 25PPM/°C	100Ω ~ 300KΩ			
		± 0.5%	± 25PPM/°C	100Ω ~ 500KΩ			
M24S4	1/4W (0.25W)	± 0.1%	± 50PPM/°C	100Ω ~ 560KΩ	200	400	3,000
		± 0.25%	± 50PPM/°C	10Ω ~ 1MΩ			
		± 0.5%	± 50PPM/°C	10Ω ~ 1MΩ			
M27S2	1/2W (0.50W)	± 0.1%	± 25PPM/°C	100Ω ~ 560KΩ	250	500	2,000
		± 0.25%	± 25PPM/°C	100Ω ~ 560KΩ			
		± 0.5%	± 25PPM/°C	100Ω ~ 560KΩ			
M271U	1W	± 0.1%	± 15PPM/°C	100Ω ~ 100KΩ	350	700	2,500
		± 0.25%	± 15PPM/°C	100Ω ~ 330KΩ			

## Derating Curve

