

Metal Film Leaded Precision Resistor

RS Stock No.: 1742784

FEATURES

- Excellent overall stability
- Very tight tolerance down to $\pm 0.05\%$
- Extremely low TCR down to $\pm 5 \text{ PPM}/^\circ\text{C}$
- High power rating up to 3 Watts
- Excellent ohmic contact

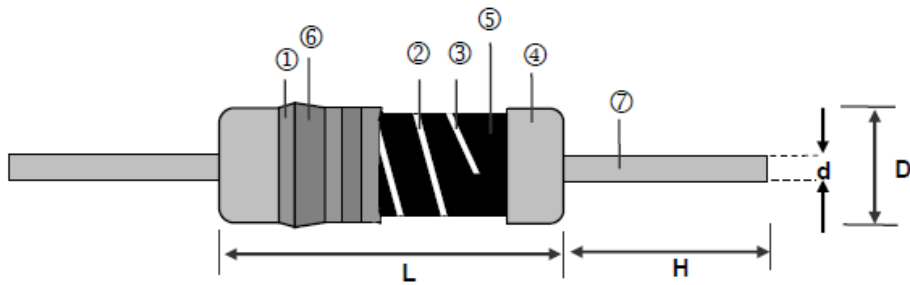


RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Applications

- Telecommunication
- Medical Equipment

Construction & Dimension

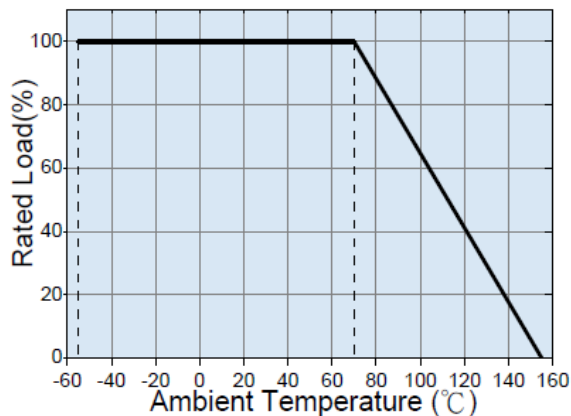


① Insulation Coating	⑤ Resistor Layer
② Trimming Line	⑥ Marking
③ Ceramic Core	⑦ Lead Wire
④ Electrode Cap	

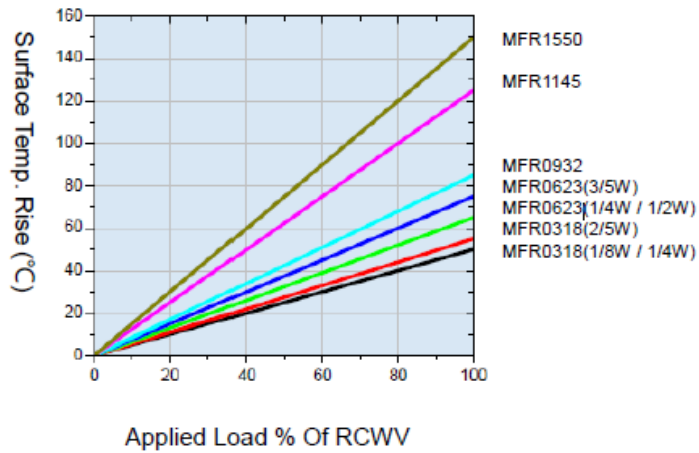
Unit: mm

Type	L	D	H	d	Weight (g) (1000pcs)
RS MOA0318	3.3+0.7/-0.2	1.8±0.3	29±2.0	0.45±0.03	90
RS MOA0623	6.3±0.5	2.3±0.3	28±2.0	0.55±0.03	150
RS MOA0932	9.0±0.5	3.2±0.5	26±2.0	0.65±0.03	350
RS MOA1145	11.5±1.0	4.5±0.5	35±2.0	0.78±0.03	770
RS MOA1550	15.5±1.0	5.0±0.5	32±2.0	0.78±0.03	1040

Derating Curve



Hot-Spot Temperature



Standard Electrical Specifications

Item Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Dielectric Withstanding Voltage	Resistance Range					TCR (PPM/°C)
						±0.05%	±0.1%	±0.25%	±0.5%	±1%	
0318	1/8W	-55 ~ +155°C	150V	300V	300V	-	10Ω-1MΩ	10Ω-4.99MΩ		±15	
						-	10Ω-1MΩ	10Ω-10MΩ		±25	
						-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±50	
0623	1/4W	-55 ~ +155°C	250V	500V	500V	-	10Ω-1MΩ	-		±5	
						-	10Ω-1MΩ	-		±10	
						-	10Ω-1MΩ	10Ω-10MΩ		±15	
						-	10Ω-1MΩ	10Ω-10MΩ		±25	
						-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±50	
0932	1/2W	-55 ~ +155°C	350V	500V	500V	-	10Ω-1MΩ	-		±100	
						-	10Ω-1MΩ	-		±5	
						-	10Ω-1MΩ	-		±10	
						-	10Ω-1MΩ	10Ω-10MΩ		±15	
						-	10Ω-1MΩ	10Ω-10MΩ		±25	
1145	1W	-55 ~ +155°C	500V	700V	700V	-	10Ω-1MΩ	10Ω-4.99MΩ		±15	
						-	10Ω-1MΩ	10Ω-10MΩ		±25	
						-	10Ω-1MΩ	10Ω-10MΩ		±50	
						-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±100	
1550	2W	-55 ~ +155°C	500V	1000V	1000V	-	10Ω-1MΩ	10Ω-4.99MΩ		±15	
						-	10Ω-1MΩ	10Ω-10MΩ		±25	
						-	10Ω-1MΩ	10Ω-10MΩ		±50	
						-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±100	

High Power & Ultra High Power Rating Electrical

Item Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Dielectric Withstanding Voltage	Resistance Range					TCR (PPM/°C)			
						±0.05%	±0.1%	±0.25%	±0.5%	±1%				
0318	1/4W	-55 ~ +155°C	200V	400V	300V	-	10Ω-1MΩ	10Ω-4.99MΩ		±15				
						-	10Ω-1MΩ	10Ω-10MΩ		±25 ±50				
						-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±100				
	2/5W		-	10Ω-1MΩ	10Ω-4.99MΩ		±15							
			-	10Ω-1MΩ	10Ω-10MΩ		±25 ±50							
			-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±100							
0623	1/2W	-55 ~ +155°C	300V	500V	500V	-	10Ω-1MΩ	10Ω-4.99MΩ		±5				
						-	10Ω-1MΩ	10Ω-10MΩ		±15				
						-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±100				
			3/5W	-	10Ω-1MΩ	10Ω-4.99MΩ		±15						
				-	10Ω-1MΩ	10Ω-10MΩ		±25 ±50						
				-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±100						
	0932	1W	-55 ~ +155°C	400V	600V	500V	-	10Ω-1MΩ	10Ω-4.99MΩ		±5			
							-	10Ω-1MΩ	10Ω-10MΩ		±10			
							-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±100			
				1145	2W	-55 ~ +155°C	500V	700V	700V	-	10Ω-1MΩ	10Ω-4.99MΩ		±15
										-	10Ω-1MΩ	10Ω-10MΩ		±25 ±50
										-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±100
1550	3W	-55 ~ +155°C	500V	1000V	1000V	-	10Ω-1MΩ	10Ω-4.99MΩ		±15				
						-	10Ω-1MΩ	10Ω-10MΩ		±25 ±50				
						-	1Ω-1MΩ	1Ω-10MΩ	0.1Ω-10MΩ	±100				

Operating Voltage= $\sqrt{P \cdot R}$ or Max. operating voltage listed above, whichever is lower.
 Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$ or Max. overload voltage listed above, whichever is lower.

Environmental Characteristics

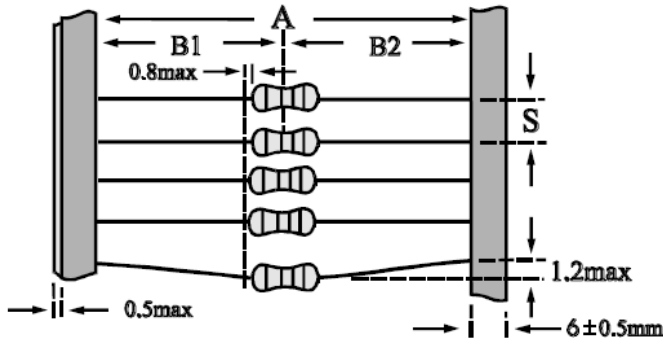
Item	Requirement	Test Method
Short Time Overload	±(0.25%+0.05Ω)	IEC-60115-1 4.13 2.5 times RCWV for 5 seconds
Insulation Resistance	> 10000MΩ	IEC-60115-1 4.6 In V-Block
Endurance	±(1.5%+0.05Ω)	IEC-60115-1 4.25 70±2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	±(1.5%+0.05Ω)	IEC-60115-1 4.24 40±2°C, 90-95% R.H., RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	95% min. Coverage	IEC-60115-1 4.17 260±5°C for 2±0.5 seconds
Voltage Proof	By Type	IEC-60115-1 4.7 In V-Block for 60 seconds
Temperature Coefficient	By Type	IEC-60115-1 4.8 Resistance value at room temperature and room Temperature+125°C
Pulse Overload	±(0.75%+0.05Ω)	IEC-60115-1 4.39 4 times RCWV for 10000 cycles with 1sec "ON" and 25 sec "OFF"
Resistance To Solvent	No deterioration of coatings and markings	IEC-60115-1 4.30 IPA for 5±0.5 min. with ultrasonic
Terminal Strength	Tensile: ≥ 2.5kg	IEC-60115-1 4.16 Direct Load for 10 sec. In the direction off the terminal leads
Resistance to Soldering Heat	0318: ±(0.75%+0.05Ω) 0623&0932: ±(0.5%+0.05Ω) 1145&1550: ±(0.25%+0.05Ω)	IEC-60115-1 4.18 The solder iron heated to 260°C±5°C and applied to the termination for a duration of 10±1 seconds
Temperature Cycling	±(0.75%+0.05Ω)	IEC-60115-1 4.19 -55°C/155°C with 5 cycles. (30min for both low and high temperature, transfer time less 30s)

RCWV(Rated continuous working voltage)= $\sqrt{P \cdot R}$ or Max. Operating voltage whichever is lower
Storage Temperature: 15~28°C; Humidity <80%RH

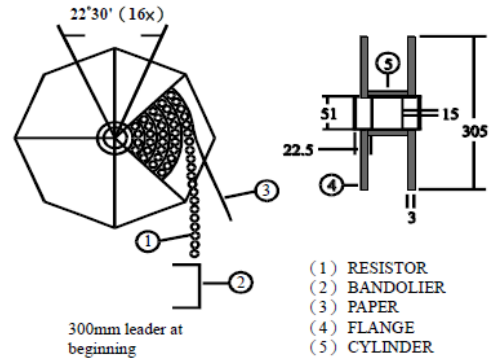
Taping/Packing Specifications

1. Standard Type (Reel & Ammo)

Packing Methods



Reel Packing

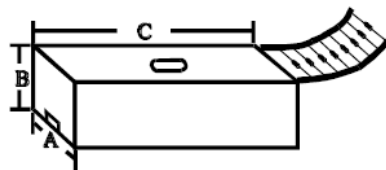


- (1) RESISTOR
- (2) BANDOLIER
- (3) PAPER
- (4) FLANGE
- (5) CYLINDER

Unit: mm

Packaging Type	Packing Methods			Reel Packing	
	A	B1-B2 Max	S	Across Flange (A)	Qty
0318	52+1/-0	1.2	5±0.3	72	5,000
	26+0.5/-0	1.0			
0623	52+1/-0	1.2	5±0.3	72	5,000
	26+0.5/-0	1.0			
0932	52+1/-0	1.2	5±0.3	72	2,500
1145	73+1/-0	1.5	5±0.3	95	2,000
	52+1/-0				
1550	73+1/-0	1.5	10±0.8	95	1,000
	52+1/-0				

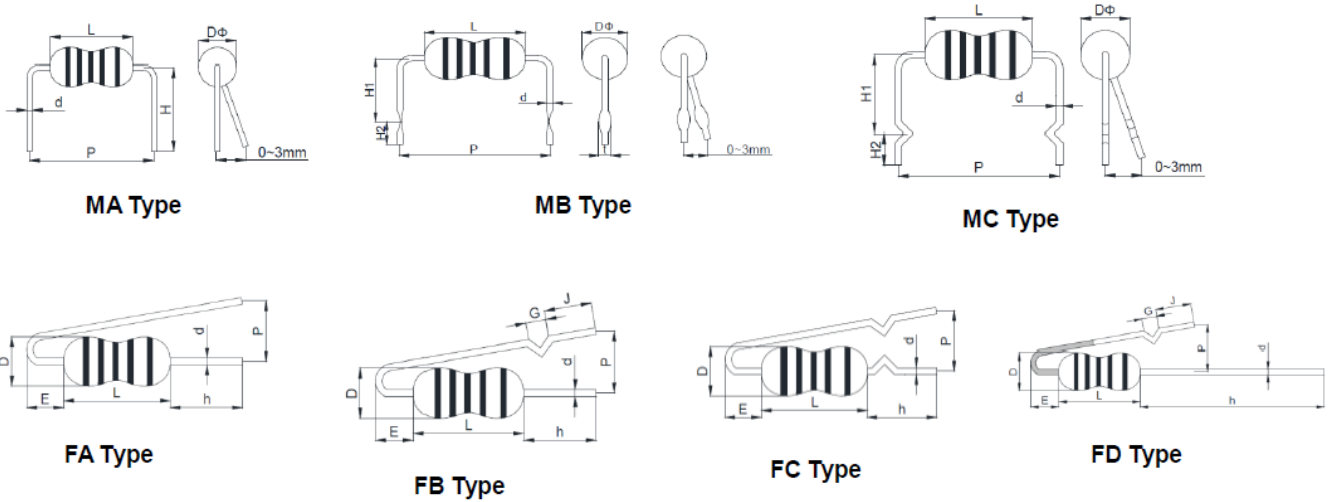
Ammo Packing



Unit: mm

Packaging Type	Packing Methods			Ammo Packing			
	A	B1-B2 Max	S	A	B	C	Qty
0318	52+1/-0	1.2	5±0.3	79±2	73±3	257±5	5,000
	26+0.5/-0	1.0		52±2	74±3	252±5	
0623	52+1/-0	1.2	5±0.3	79±2	100±3	257±5	5,000
	26+0.5/-0	1.0		52±2	109±3	252±5	
0932	52+1/-0	1.2	5±0.3	79±2	58±3	257±5	1,000
1145	73+1/-0	1.5	5±0.3	103±2	82±3	262±5	1,000
	52+1/-0			81±2	85±3	256±5	
1550	73+1/-0	1.5	10±0.8	103±2	96±3	265±5	1,000
	52+1/-0			82±2	108±3	258±5	

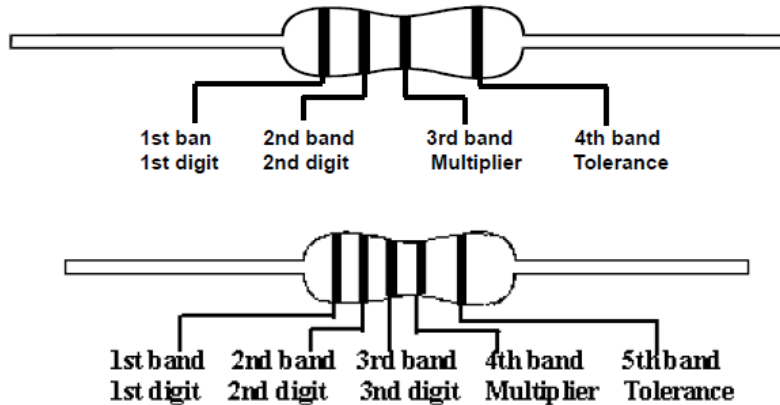
2. Special Type (Bulk)



Unit: mm

Codes	Type	P	H /H1/h	H2/G	J	t	D	L	d	E
0623	MA	10±1	10.0±1	-	-	-	2.3±0.3	6.3±0.5	0.55±0.03	-
	MC	10±1	6.0±1	5.0±2	-	-	2.3±0.3	6.3±0.5	0.55±0.03	-
	FA	5~15	5.0±2	-	-	-	2.3±0.3	6.3±0.5	0.55±0.03	3±1
	FB	5~15	4.0±2	3.0±1	3±2	-	2.3±0.3	6.3±0.5	0.55±0.03	3±1
	FD	5~15	27.0±2	3.0±1	12±2	-	2.3±0.3	6.3±0.5	0.55±0.03	3±1
0932	MA	12.5±1	10.0±1	-	-	-	3.2±0.5	9.0±0.5	0.65±0.03	-
	MC	12.5±1	5.0±1	4.0±2	-	-	3.2±0.5	9.0±0.5	0.65±0.03	-
	FA	5~15	5.0±2	-	-	-	3.2±0.5	9.0±0.5	0.65±0.03	3±1
	FB	5~15	4.0±2	3.0±1	3±2	-	3.2±0.5	9.0±0.5	0.65±0.03	3±1
	FC	5~15	10.0±3	-	-	-	3.2±0.5	9.0±0.5	0.65±0.03	-
1145	MA	15±1	12.5±1	-	-	-	4.5±0.5	11.5±1.0	0.78±0.03	-
	MC	15±1	8.0±1	6.0±1	-	-	4.5±0.5	11.5±1.0	0.78±0.03	-
	FA	5~15	5.0±2	-	-	-	4.5±0.5	11.5±1.0	0.78±0.03	3±1
	FB	5~15	4.0±2	3.0±1	3±2	-	4.5±0.5	11.5±1.0	0.78±0.03	3±1
	FC	5~15	10.0±3	-	-	-	4.5±0.5	11.5±1.0	0.78±0.03	-
1550	MA	20±1	15.0±1	-	-	-	5.0±0.5	15.5±1.0	0.78±0.03	-
	MC	20±1	12.0±1	5.0±1	-	-	5.0±0.5	15.5±1.0	0.78±0.03	-
	FA	5~15	5.0±2	-	-	-	5.0±0.5	15.5±1.0	0.78±0.03	3±1
	FB	5~15	4.0±2	3.0±1	3±2	-	5.0±0.5	15.5±1.0	0.78±0.03	3±1
	FC	5~15	10.0±3	-	-	-	5.0±0.5	15.5±1.0	0.78±0.03	-

Marking & Resistance Tolerance



Color	Digit	Multiplier	Tolerance	
Without	-	-	±20%	M
Silver	-	10 ⁻²	±10%	K
Gold	-	10 ⁻¹	±5.0%	J
Black	0	10 ⁰	-	-
Brown	1	10 ¹	±1.0%	F
Red	2	10 ²	±2.0%	G
Orange	3	10 ³	-	-
Yellow	4	10 ⁴	-	-
Green	5	10 ⁵	±0.50%	D
Blue	6	10 ⁶	±0.25%	C
Violet	7	10 ⁷	±0.10%	B
Grey	8	10 ⁸	±0.05%	A
White	9	10 ⁹	-	-

±10%	E-6	1.0	-	-	-	1.5	-	-	-	2.2	-	-	-	3.3	-	-	-	4.7	-	-	-	6.8	-	-	-
±5.0%	E-12	1.0	-	1.2	-	1.5	-	1.8	-	2.2	-	2.7	-	3.3	-	3.9	-	4.7	-	5.6	-	6.8	-	8.2	-
±2.0%	E-24	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	3.0	3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1
±2.0%	E-48	1.00	1.05	1.10	1.15	1.21	1.27	1.33	1.40	1.47	1.54	1.62	1.69	1.78	1.87	1.96	2.05	2.15	2.26	2.37	2.37	2.61	2.74	2.87	3.01
		3.16	3.32	3.48	3.65	3.83	4.02	4.22	4.22	4.64	4.87	5.11	5.36	5.62	5.90	6.19	6.49	6.81	7.15	7.50	7.87	8.25	8.66	9.09	9.53
±1.0%	E-96	1.00	1.02	1.05	1.07	1.10	1.13	1.15	1.18	1.21	1.24	1.27	1.30	1.33	1.37	1.40	1.43	1.47	1.50	1.54	1.58	1.62	1.65	1.69	1.74
		1.78	1.82	1.87	1.91	1.96	2.00	2.05	2.10	2.15	2.21	2.26	2.32	2.37	2.43	2.49	2.55	2.61	2.67	2.74	2.80	2.87	2.94	3.01	3.09
±1.00%	E-192	5.62	5.76	5.90	6.04	6.19	6.34	6.49	6.65	6.81	6.98	7.15	7.32	7.50	7.68	7.87	8.06	8.25	8.45	8.66	8.87	9.09	9.31	9.53	9.76
		10.0	10.1	10.2	10.4	10.5	10.6	10.7	10.9	11.0	11.1	11.3	11.4	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	13.0	13.2
±0.50%	E-192	13.3	13.5	13.7	13.8	14.0	14.2	14.3	14.5	14.7	14.9	15.0	15.2	15.4	15.6	15.8	16.0	16.2	16.4	16.5	16.7	16.9	17.2	17.4	17.6
		17.8	18.0	18.2	18.4	18.7	18.9	19.1	19.3	19.6	19.8	20.0	20.3	20.5	20.8	21.0	21.3	21.5	21.8	22.1	22.3	22.6	22.9	23.2	23.4
±0.25%	E-192	23.7	24.0	24.3	24.6	24.9	25.2	25.5	25.8	26.1	26.4	26.7	27.1	27.4	27.7	28.0	28.4	28.7	29.1	29.4	29.8	30.1	30.5	30.9	31.2
		31.6	32.0	32.4	32.8	33.2	33.6	34.0	34.4	34.8	35.2	35.7	36.1	36.5	37.0	37.4	37.9	38.3	38.8	39.2	39.7	40.2	40.7	41.2	41.7
±0.10%	E-192	42.2	42.7	43.2	43.7	44.2	44.8	45.3	45.9	46.4	47.0	47.5	48.1	48.7	49.3	49.9	50.5	51.1	51.7	52.3	53.0	53.6	54.2	54.9	55.6
		56.2	56.9	57.6	58.3	59.0	59.7	60.4	61.2	61.9	62.6	63.4	64.2	64.9	65.7	66.5	67.3	68.1	69.0	69.8	70.6	71.5	72.3	73.2	74.1
±0.10%	E-192	75.0	75.9	76.8	77.7	78.7	79.6	80.6	81.6	82.5	83.5	84.5	85.6	86.6	87.6	88.7	89.8	90.9	92.0	93.1	94.2	95.3	96.5	97.6	98.8