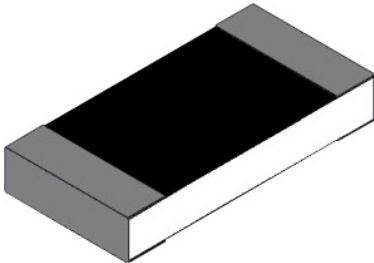


Automotive Thick Film Chip Resistors

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**RoHS
Compliant**



1. Scope

This specification for approve relates to the Automotive Thick Film Chip Resistors. Used in automobile. The test items follow the test standard of AEC-Q200.

2. Type designation

The type designation shall be in the following form:

Type	Power Rating	Resistance tolerance	Nominal Resistance
0603	0.1W (1/10W)	F	10K Ω

3. Ratings:

Type	0402	0603	0805	1206	1210	2010	2512
Power Rating	1/16W	1/10W	1/8W	1/4W	1/2W	1/2W	1W
Jumper Rated Current	1A	1A	2A	2A	2A	2A	2A
Max. Jumper Rated Current	2A	2A	5A	10A	10A	10A	10A
Max. Working Voltage	50V	75V	150V	200V	200V	200V	200V
Max. Overload Voltage	100V	150V	300V	400V	500V	500V	500V
Dielectric Withstanding Voltage	100V	300V	500V	500V			
Temperature Range	-55°C to +155°C						
Ambient Temperature	70°C						

3.1 Power rating:

Resistors shall have a power rating based on continuous load operation at an ambient temperature from -55°C to 70°C. For temperature in excess of 70°C, the load shall be derate as shown in figure 1

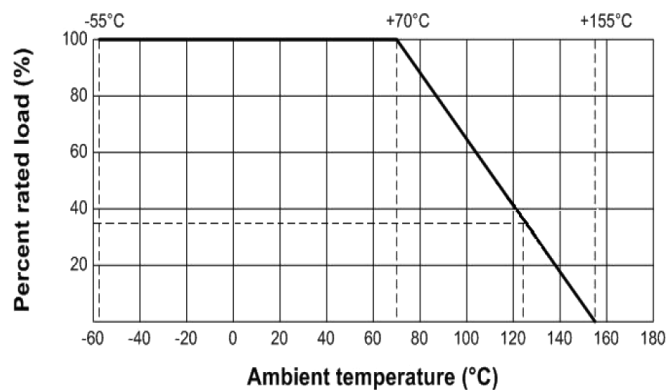


Figure 1

Automotive Thick Film Chip Resistors

3.2 Voltage rating:

Resistors shall have a rated direct-current (DC) continuous working voltage or an approximate sine-wave root-mean-square (RMS) alternating-current (AC) continuous working voltage at commercial line frequency and waveform corresponding to the power rating, as determined from the following formula:

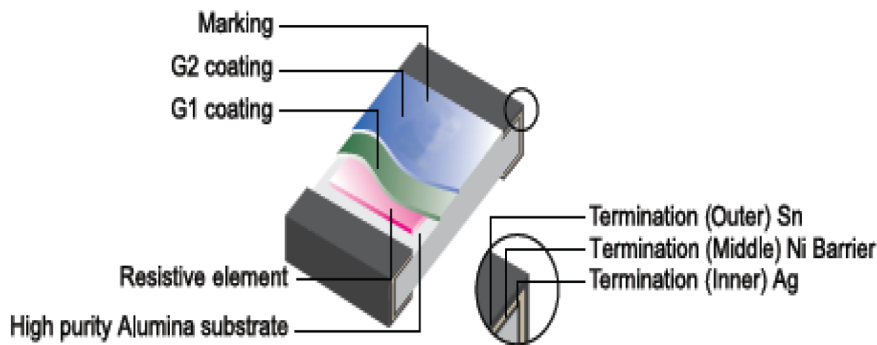
$$RCWV = \sqrt{P \times R}$$

Where: RCWV = Rated DC or RMS AC continuous working voltage at commercial-line frequency and waveform (volt)

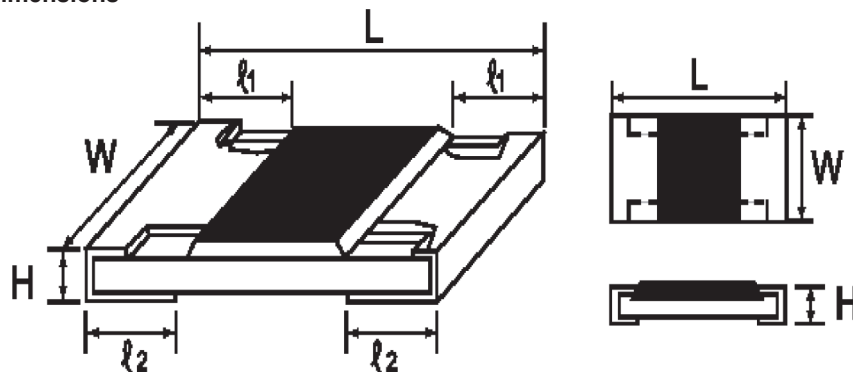
P = Power Rating (watt)

R = Nominal Resistance (ohm)

4. Construction :



5. Power rating and dimensions



Dimension

Type	Dimension (mm)				
	L	W	H	l1	l2
0402	1 ±0.1	0.5 ±0.05	0.35 ±0.05	0.2 ±0.1	0.25 ±0.1
0603	1.6 ±0.1	0.8 ±0.1	0.45 ±0.1	0.3 ±0.2	0.3 ±0.2
0805	2 ±0.15	1.25 ±0.15 -0.1	0.55 ±0.1	0.4 ±0.2	0.4 ±0.2
1206	3.1 ±0.15	1.55 ±0.15 -0.1		0.45 ±0.2	0.45 ±0.2
1210	3.1 ±0.1	2.6 ±0.2		0.5 ±0.25	0.5 ±0.2
2010	5 ±0.1	2.5 ±0.2		0.6 ±0.25	0.5 ±0.2
2512	6.35 ±0.1	3.2 ±0.2		0.6 ±0.25	0.5 ±0.2

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Power Rating :

Type	Power Rating at 70	Tolerance	Resistance Range	Standard Series
		Jumper	< 50mΩ	E-96
0402	1/16W	±1%	1Ω to 1MΩ	
0603	1/10W			
0805	1/8W			
1206	1/4W			
1210	1/2W			
2010	3/4W			
2512	1W			

6. Marking :

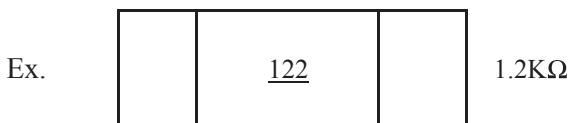
6.1 Resistors

A. Chip Resistors type 0402 No marking

B. Standard E-96 series values(±1% tolerance) of 0603 size. Due the small size of the resistor's body, 3 digits marking will be used to indicate the accurate resistance value by using the following multiplier & resistance code

Marking for 0603 E-96 series, the resistance value that no have multiplier code indicate marking follow this:

The first two digits are significant figures of resistance and the third one denoted number of zeros and under line the marking letters.

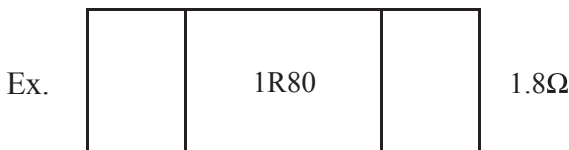


C. Marking for E-96 series in 0805, 1206, 1210, 2010 , 2512 size : 4 Digits

*The first 3 digits are significant figures of resistance and the 4th digit denotes number of zeros.



*For ohmic values below 100 Ω, letter "R" is for decimal point.



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*The first 2 digits are significant figures of resistance and the 3rd digit denotes number of zeros.



*For ohmic values below 10 Ω , letter "R" is for decimal point.



7. Performance specification :

Characteristics	Limits	Test Methods
Load life	$\pm 1\%$: $\pm(1\% + 0.1\Omega)$ Max.	125°C, 35% power, at RCWV or Max.Working Voltage whichever less, 1,000 hours (1.5 hours "ON", 0.5hours "OFF"), Measurement at 24 \pm 2 hours after test conclusion. (MIL-STD-202 Method 108)
Temperature Coefficient	1 Ω \leq R \leq 10 Ω : ± 200 PPM/ $^{\circ}$ C \geq 10 Ω : ± 100 PPM/ $^{\circ}$ C	Measure between -55°C to +125°C
Short time overload	$\pm 1\%$: $\pm(1\% + 0.1\Omega)$ Max.	2.5x Rated voltage or Max. Overload Voltage whichever is lower for 5 seconds, then check the resistance.
Terminal Bending	$\pm(1\% + 0.05\Omega)$ Max	Bending Distance 3mm, Duration: 60s \pm 5s, then check the resistance.
Solderability	95% coverage Min.	245 \pm 3°C; 2s to 3s
Soldering heat	$\pm(1\% + 0.05\Omega)$ Max	260 \pm 5°C; 10 \pm 1s
Biased Humidity	1%: $\pm(1\% + 0.05\Omega)$ Max.	10% rated power, 85°C/85%RH, 1000Hr, Measurement at 24 hours after test conclusion. (MIL-STD-202 Method 103)
Dielectric withstanding voltage	No evidence of flashover, mechanical damage, arcing or insulation breakdown	Resistor shall be clamped in the trough of 90° metallic V-block and shall be tested at AC potential respectively specified in the given list of each product type for 60s to 70s.
Temperature cycling	1%: $\pm(0.5\% + 0.1\Omega)$ Max.	-55 \pm 3°C 30min ~normal temperature 10min-15min~155 \pm 2°C 30min~normal temperature 10min-15min 100 cycles, Measurement at 24 hours after test conclusion. (JESD22 Method JA-104)
ESD	$\pm(1\% + 0.05\Omega)$ Max	With the electrometer in direct contact with the discharge tip, verify the voltage setting at levels of ± 500 V, ± 1 KV, ± 2 KV, ± 4 KV, ± 8 KV, The electrometer reading shall be within $\pm 10\%$ for voltages from 500V to ≤ 800 V. (AEC-Q200-002)
Sulfuration test	1%: $\pm(1\% + 0.05\Omega)$ Max.	H2S 3 to 5PPM 50°C $\pm 2^{\circ}$ C 91% to 93% RH 1000H

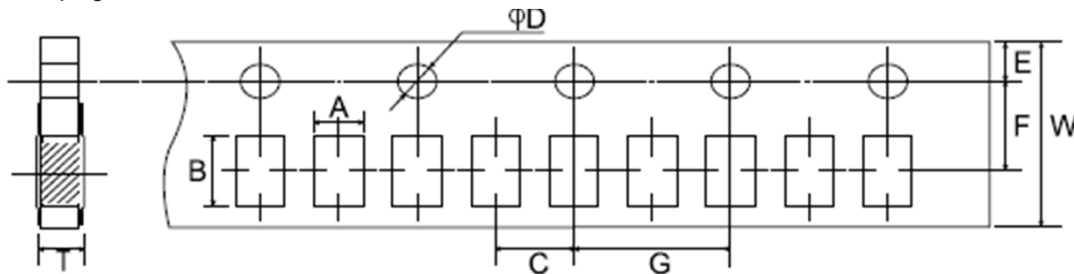
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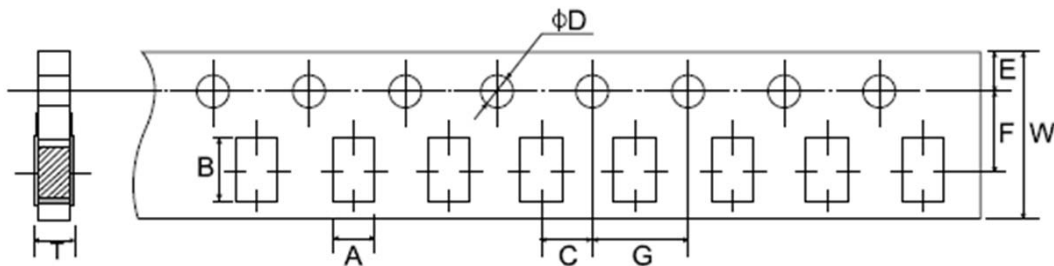
8. Packing specification

* Taping Dimension (mm)

a. Paper Taping

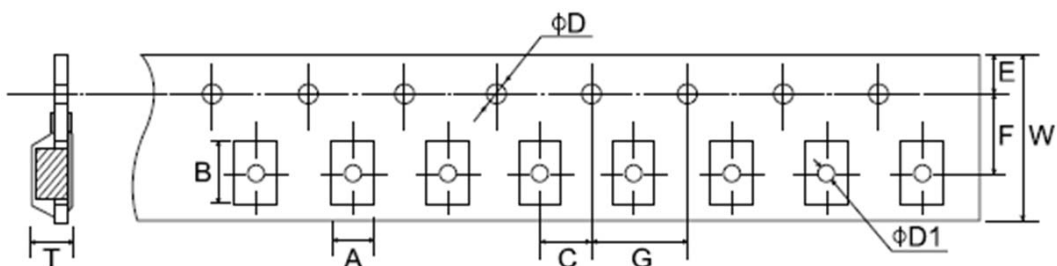


Type	A ±0.2	B ±0.2	C ±0.05	ØD+0.1- 0	E ±0.1	F ±0.05	G ±0.1	W ±0.2	T ±0.1
0402	0.65	1.15	2	1.5	1.75	3.5	4	8	0.42 ±0.05



Type	A ±0.2	B ±0.2	C ±0.05	ØD+0.1- 0	E ±0.1	F ±0.05	G ±0.1	W ±0.2	T ±0.1
0603	1.1	1.9	2	1.5	1.75	3.5	4	8	0.67
0805	1.65	2.4							0.81
1206	2	3.6							0.75
1210	2.8	3.5							

b.) Embossed Taping



Type	A ±0.2	B ±0.2	C ±0.05	ØD+0.1- 0	ØD ₁ +0.1- 0	E ±0.1	F ±0.05	G ±0.1	W ±0.2	T ±0.1
2010	2.9	5.6	2	1.5	1.5	1.75	5.5	4	12	1
2512	3.5	6.7								

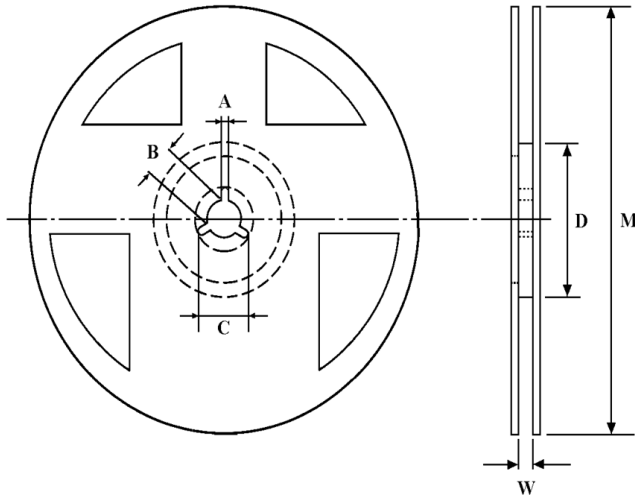
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* Reel Dimension (mm)



Type	Taping	Qty/Reel	A ±0.5	B ±0.5	C ±0.5	D ±1	M ±2	W ±1
0402	Paper	10,000pcs	2	13	21	60	178	10
0603								
0805								
1206								
1210								
2010	Embossed	4,000pcs	2	13	21	60	178	13.8
2512								

Environment Related Substance

This product complies to EU RoHS directive, EU PAHs directive, EU PFOS directive and Halogen free.

Ozone layer depleting substances.

Ozone depleting substances are not used in our manufacturing process of this product.

This product is not manufactured using Chloro fluorocarbons (CFCs), Hydrochlorofluorocarbons (HCFCs), Hydrobromofluorocarbons (HBFCs) or other ozone depleting substances in any phase of the manufacturing process.

Storage Condition (MSL1)

The performance of these products, including the solderability, is guaranteed for a year from the date of arrival at your company, provided that they remain packed as they were when delivered and stored at a temperature of 25°C ±10°C and a relative humidity of 60%RH ±10%RH, chemical and dust free atmosphere

Even within the above guarantee periods, do not store these products in the following conditions.

Otherwise, their electrical performance and/or solderability may be deteriorated, and the packaging materials (e.g. taping materials) may be deformed or deteriorated, resulting in mounting failures.

1. In salty air or in air with a high concentration of corrosive gas, such as Cl₂, H₂S, NH₃, SO₂, or NO₂
2. In direct sunlight

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Automotive Thick Film Chip Resistors

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Part Number Table

Description	Part Number	Description	Part Number
Chip Resistor, Thick Film, 1/2W, 3R3, ±1%, 1210	MP003369	Chip Resistor, Thick Film, 1/2W, 15k, ±1%, 1210	MP003409
Chip Resistor, Thick Film, 1/2W, 10R, ±1%, 1210	MP003370	Chip Resistor, Thick Film, 1/2W, 18k, ±1%, 1210	MP003410
Chip Resistor, Thick Film, 1/2W, 12R, ±1%, 1210	MP003371	Chip Resistor, Thick Film, 1/2W, 22k, ±1%, 1210	MP003411
Chip Resistor, Thick Film, 1/2W, 15R, ±1%, 1210	MP003372	Chip Resistor, Thick Film, 1/2W, 27k, ±1%, 1210	MP003412
Chip Resistor, Thick Film, 1/2W, 18R, ±1%, 1210	MP003373	Chip Resistor, Thick Film, 1/2W, 33k, ±1%, 1210	MP003413
Chip Resistor, Thick Film, 1/2W, 22R, ±1%, 1210	MP003374	Chip Resistor, Thick Film, 1/2W, 39k, ±1%, 1210	MP003414
Chip Resistor, Thick Film, 1/2W, 27R, ±1%, 1210	MP003375	Chip Resistor, Thick Film, 1/2W, 47k, ±1%, 1210	MP003415
Chip Resistor, Thick Film, 1/2W, 33R, ±1%, 1210	MP003376	Chip Resistor, Thick Film, 1/2W, 56k, ±1%, 1210	MP003416
Chip Resistor, Thick Film, 1/2W, 39R, ±1%, 1210	MP003377	Chip Resistor, Thick Film, 1/2W, 68k, ±1%, 1210	MP003417
Chip Resistor, Thick Film, 1/2W, 47R, ±1%, 1210	MP003378	Chip Resistor, Thick Film, 1/2W, 82k, ±1%, 1210	MP003418
Chip Resistor, Thick Film, 1/2W, 56R, ±1%, 1210	MP003379	Chip Resistor, Thick Film, 1/2W, 100k, ±1%, 1210	MP003419
Chip Resistor, Thick Film, 1/2W, 68R, ±1%, 1210	MP003380	Chip Resistor, Thick Film, 1/2W, 120k, ±1%, 1210	MP003420
Chip Resistor, Thick Film, 1/2W, 82R, ±1%, 1210	MP003381	Chip Resistor, Thick Film, 1/2W, 150k, ±1%, 1210	MP003421
Chip Resistor, Thick Film, 1/2W, 100R, ±1%, 1210	MP003382	Chip Resistor, Thick Film, 1/2W, 180k, ±1%, 1210	MP003422
Chip Resistor, Thick Film, 1/2W, 110R, ±1%, 1210	MP003383	Chip Resistor, Thick Film, 1/2W, 220k, ±1%, 1210	MP003423
Chip Resistor, Thick Film, 1/2W, 120R, ±1%, 1210	MP003384	Chip Resistor, Thick Film, 1/2W, 270k, ±1%, 1210	MP003424
Chip Resistor, Thick Film, 1/2W, 150R, ±1%, 1210	MP003385	Chip Resistor, Thick Film, 1/2W, 330k, ±1%, 1210	MP003425
Chip Resistor, Thick Film, 1/2W, 180R, ±1%, 1210	MP003386	Chip Resistor, Thick Film, 1/2W, 390k, ±1%, 1210	MP003426
Chip Resistor, Thick Film, 1/2W, 220R, ±1%, 1210	MP003387	Chip Resistor, Thick Film, 1/2W, 470k, ±1%, 1210	MP003427
Chip Resistor, Thick Film, 1/2W, 270R, ±1%, 1210	MP003388	Chip Resistor, Thick Film, 1/2W, 560k, ±1%, 1210	MP003428
Chip Resistor, Thick Film, 1/2W, 330R, ±1%, 1210	MP003389	Chip Resistor, Thick Film, 1/2W, 680k, ±1%, 1210	MP003429
Chip Resistor, Thick Film, 1/2W, 390R, ±1%, 1210	MP003390	Chip Resistor, Thick Film, 1/2W, 820k, ±1%, 1210	MP003430
Chip Resistor, Thick Film, 1/2W, 470R, ±1%, 1210	MP003391	Chip Resistor, Thick Film, 1/2W, 1M, ±1%, 1210	MP003431
Chip Resistor, Thick Film, 1/2W, 560R, ±1%, 1210	MP003392	Chip Resistor, Thick Film, 1/16W, 0R, ±1%, 0402	MP003432
Chip Resistor, Thick Film, 1/2W, 680R, ±1%, 1210	MP003393	Chip Resistor, Thick Film, 1/16W, 1R, ±1%, 0402	MP003433
Chip Resistor, Thick Film, 1/2W, 820R, ±1%, 1210	MP003394	Chip Resistor, Thick Film, 1/16W, 2R2, ±1%, 0402	MP003434
Chip Resistor, Thick Film, 1/2W, 1k, ±1%, 1210	MP003395	Chip Resistor, Thick Film, 1/16W, 4R7, ±1%, 0402	MP003435
Chip Resistor, Thick Film, 1/2W, 1k2, ±1%, 1210	MP003396	Chip Resistor, Thick Film, 1/16W, 10R, ±1%, 0402	MP003436
Chip Resistor, Thick Film, 1/2W, 1k5, ±1%, 1210	MP003397	Chip Resistor, Thick Film, 1/16W, 12R, ±1%, 0402	MP003437
Chip Resistor, Thick Film, 1/2W, 1k8, ±1%, 1210	MP003398	Chip Resistor, Thick Film, 1/16W, 15R, ±1%, 0402	MP003438
Chip Resistor, Thick Film, 1/2W, 2k2, ±1%, 1210	MP003399	Chip Resistor, Thick Film, 1/16W, 18R, ±1%, 0402	MP003439
Chip Resistor, Thick Film, 1/2W, 2k7, ±1%, 1210	MP003400	Chip Resistor, Thick Film, 1/16W, 22R, ±1%, 0402	MP003440
Chip Resistor, Thick Film, 1/2W, 3k3, ±1%, 1210	MP003401	Chip Resistor, Thick Film, 1/16W, 27R, ±1%, 0402	MP003441
Chip Resistor, Thick Film, 1/2W, 3k9, ±1%, 1210	MP003402	Chip Resistor, Thick Film, 1/16W, 33R, ±1%, 0402	MP003442
Chip Resistor, Thick Film, 1/2W, 4k7, ±1%, 1210	MP003403	Chip Resistor, Thick Film, 1/16W, 39R, ±1%, 0402	MP003443
Chip Resistor, Thick Film, 1/2W, 5k6, ±1%, 1210	MP003404	Chip Resistor, Thick Film, 1/16W, 47R, ±1%, 0402	MP003444
Chip Resistor, Thick Film, 1/2W, 6k8, ±1%, 1210	MP003405	Chip Resistor, Thick Film, 1/16W, 56R, ±1%, 0402	MP003445
Chip Resistor, Thick Film, 1/2W, 8k2, ±1%, 1210	MP003406	Chip Resistor, Thick Film, 1/16W, 68R, ±1%, 0402	MP003446
Chip Resistor, Thick Film, 1/2W, 10k, ±1%, 1210	MP003407	Chip Resistor, Thick Film, 1/16W, 82R, ±1%, 0402	MP003447
Chip Resistor, Thick Film, 1/2W, 12k, ±1%, 1210	MP003408	Chip Resistor, Thick Film, 1/16W, 100R, ±1%, 0402	MP003448

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Description	Part Number	Description	Part Number
Chip Resistor, Thick Film, 1/16W, 120R, ±1%, 0402	MP003449	Chip Resistor, Thick Film, 1/16W, 39k, ±1%, 0402	MP003491
Chip Resistor, Thick Film, 1/16W, 130R, ±1%, 0402	MP003450	Chip Resistor, Thick Film, 1/16W, 47k, ±1%, 0402	MP003492
Chip Resistor, Thick Film, 1/16W, 150R, ±1%, 0402	MP003451	Chip Resistor, Thick Film, 1/16W, 51k, ±1%, 0402	MP003493
Chip Resistor, Thick Film, 1/16W, 160R, ±1%, 0402	MP003452	Chip Resistor, Thick Film, 1/16W, 56k, ±1%, 0402	MP003494
Chip Resistor, Thick Film, 1/16W, 180R, ±1%, 0402	MP003453	Chip Resistor, Thick Film, 1/16W, 68k, ±1%, 0402	MP003495
Chip Resistor, Thick Film, 1/16W, 200R, ±1%, 0402	MP003454	Chip Resistor, Thick Film, 1/16W, 82k, ±1%, 0402	MP003496
Chip Resistor, Thick Film, 1/16W, 220R, ±1%, 0402	MP003455	Chip Resistor, Thick Film, 1/16W, 91k, ±1%, 0402	MP003497
Chip Resistor, Thick Film, 1/16W, 270R, ±1%, 0402	MP003456	Chip Resistor, Thick Film, 1/16W, 100k, ±1%, 0402	MP003498
Chip Resistor, Thick Film, 1/16W, 330R, ±1%, 0402	MP003457	Chip Resistor, Thick Film, 1/16W, 120k, ±1%, 0402	MP003499
Chip Resistor, Thick Film, 1/16W, 390R, ±1%, 0402	MP003458	Chip Resistor, Thick Film, 1/16W, 150k, ±1%, 0402	MP003500
Chip Resistor, Thick Film, 1/16W, 470R, ±1%, 0402	MP003459	Chip Resistor, Thick Film, 1/16W, 180k, ±1%, 0402	MP003501
Chip Resistor, Thick Film, 1/16W, 510R, ±1%, 0402	MP003460	Chip Resistor, Thick Film, 1/16W, 220k, ±1%, 0402	MP003502
Chip Resistor, Thick Film, 1/16W, 560R, ±1%, 0402	MP003461	Chip Resistor, Thick Film, 1/16W, 270k, ±1%, 0402	MP003503
Chip Resistor, Thick Film, 1/16W, 620R, ±1%, 0402	MP003462	Chip Resistor, Thick Film, 1/16W, 300k, ±1%, 0402	MP003504
Chip Resistor, Thick Film, 1/16W, 680R, ±1%, 0402	MP003463	Chip Resistor, Thick Film, 1/16W, 330k, ±1%, 0402	MP003505
Chip Resistor, Thick Film, 1/16W, 820R, ±1%, 0402	MP003464	Chip Resistor, Thick Film, 1/16W, 390k, ±1%, 0402	MP003506
Chip Resistor, Thick Film, 1/16W, 1k, ±1%, 0402	MP003465	Chip Resistor, Thick Film, 1/16W, 470k, ±1%, 0402	MP003507
Chip Resistor, Thick Film, 1/16W, 1k2, ±1%, 0402	MP003466	Chip Resistor, Thick Film, 1/16W, 560k, ±1%, 0402	MP003508
Chip Resistor, Thick Film, 1/16W, 1k5, ±1%, 0402	MP003467	Chip Resistor, Thick Film, 1/16W, 680k, ±1%, 0402	MP003509
Chip Resistor, Thick Film, 1/16W, 1k8, ±1%, 0402	MP003468	Chip Resistor, Thick Film, 1/16W, 820k, ±1%, 0402	MP003510
Chip Resistor, Thick Film, 1/16W, 2k, ±1%, 0402	MP003469	Chip Resistor, Thick Film, 1/16W, 1M, ±1%, 0402	MP003511
Chip Resistor, Thick Film, 1/16W, 2k2, ±1%, 0402	MP003470	Chip Resistor, Thick Film, 1/10W, 0R, ±1%, 0603	MP003512
Chip Resistor, Thick Film, 1/16W, 2k7, ±1%, 0402	MP003471	Chip Resistor, Thick Film, 1/10W, 1R, ±1%, 0603	MP003513
Chip Resistor, Thick Film, 1/16W, 3k, ±1%, 0402	MP003472	Chip Resistor, Thick Film, 1/10W, 2R2, ±1%, 0603	MP003514
Chip Resistor, Thick Film, 1/16W, 3k3, ±1%, 0402	MP003473	Chip Resistor, Thick Film, 1/10W, 4R7, ±1%, 0603	MP003515
Chip Resistor, Thick Film, 1/16W, 3k6, ±1%, 0402	MP003474	Chip Resistor, Thick Film, 1/10W, 10R, ±1%, 0603	MP003516
Chip Resistor, Thick Film, 1/16W, 3k9, ±1%, 0402	MP003475	Chip Resistor, Thick Film, 1/10W, 12R, ±1%, 0603	MP003517
Chip Resistor, Thick Film, 1/16W, 4k7, ±1%, 0402	MP003476	Chip Resistor, Thick Film, 1/10W, 15R, ±1%, 0603	MP003518
Chip Resistor, Thick Film, 1/16W, 5k1, ±1%, 0402	MP003477	Chip Resistor, Thick Film, 1/10W, 18R, ±1%, 0603	MP003519
Chip Resistor, Thick Film, 1/16W, 5k6, ±1%, 0402	MP003478	Chip Resistor, Thick Film, 1/10W, 22R, ±1%, 0603	MP003520
Chip Resistor, Thick Film, 1/16W, 6k8, ±1%, 0402	MP003479	Chip Resistor, Thick Film, 1/10W, 27R, ±1%, 0603	MP003521
Chip Resistor, Thick Film, 1/16W, 8k2, ±1%, 0402	MP003480	Chip Resistor, Thick Film, 1/10W, 33R, ±1%, 0603	MP003522
Chip Resistor, Thick Film, 1/16W, 10k, ±1%, 0402	MP003481	Chip Resistor, Thick Film, 1/10W, 39R, ±1%, 0603	MP003523
Chip Resistor, Thick Film, 1/16W, 12k, ±1%, 0402	MP003482	Chip Resistor, Thick Film, 1/10W, 47R, ±1%, 0603	MP003524
Chip Resistor, Thick Film, 1/16W, 15k, ±1%, 0402	MP003483	Chip Resistor, Thick Film, 1/10W, 56R, ±1%, 0603	MP003525
Chip Resistor, Thick Film, 1/16W, 18k, ±1%, 0402	MP003484	Chip Resistor, Thick Film, 1/10W, 68R, ±1%, 0603	MP003526
Chip Resistor, Thick Film, 1/16W, 20k, ±1%, 0402	MP003485	Chip Resistor, Thick Film, 1/10W, 82R, ±1%, 0603	MP003527
Chip Resistor, Thick Film, 1/16W, 22k, ±1%, 0402	MP003486	Chip Resistor, Thick Film, 1/10W, 100R, ±1%, 0603	MP003528
Chip Resistor, Thick Film, 1/16W, 27k, ±1%, 0402	MP003487	Chip Resistor, Thick Film, 1/10W, 120R, ±1%, 0603	MP003529
Chip Resistor, Thick Film, 1/16W, 30k, ±1%, 0402	MP003488	Chip Resistor, Thick Film, 1/10W, 130R, ±1%, 0603	MP003530
Chip Resistor, Thick Film, 1/16W, 33k, ±1%, 0402	MP003489	Chip Resistor, Thick Film, 1/10W, 150R, ±1%, 0603	MP003531
Chip Resistor, Thick Film, 1/16W, 36k, ±1%, 0402	MP003490	Chip Resistor, Thick Film, 1/10W, 160R, ±1%, 0603	MP003532

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Automotive Thick Film Chip Resistors

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Description	Part Number	Description	Part Number
Chip Resistor, Thick Film, 1/10W, 180R, $\pm 1\%$, 0603	MP003533	Chip Resistor, Thick Film, 1/10W, 56k, $\pm 1\%$, 0603	MP003574
Chip Resistor, Thick Film, 1/10W, 200R, $\pm 1\%$, 0603	MP003534	Chip Resistor, Thick Film, 1/10W, 68k, $\pm 1\%$, 0603	MP003575
Chip Resistor, Thick Film, 1/10W, 220R, $\pm 1\%$, 0603	MP003535	Chip Resistor, Thick Film, 1/10W, 82k, $\pm 1\%$, 0603	MP003576
Chip Resistor, Thick Film, 1/10W, 270R, $\pm 1\%$, 0603	MP003536	Chip Resistor, Thick Film, 1/10W, 91k, $\pm 1\%$, 0603	MP003577
Chip Resistor, Thick Film, 1/10W, 330R, $\pm 1\%$, 0603	MP003537	Chip Resistor, Thick Film, 1/10W, 100k, $\pm 1\%$, 0603	MP003578
Chip Resistor, Thick Film, 1/10W, 390R, $\pm 1\%$, 0603	MP003538	Chip Resistor, Thick Film, 1/10W, 120k, $\pm 1\%$, 0603	MP003579
Chip Resistor, Thick Film, 1/10W, 470R, $\pm 1\%$, 0603	MP003539	Chip Resistor, Thick Film, 1/10W, 150k, $\pm 1\%$, 0603	MP003580
Chip Resistor, Thick Film, 1/10W, 510R, $\pm 1\%$, 0603	MP003540	Chip Resistor, Thick Film, 1/10W, 180k, $\pm 1\%$, 0603	MP003581
Chip Resistor, Thick Film, 1/10W, 560R, $\pm 1\%$, 0603	MP003541	Chip Resistor, Thick Film, 1/10W, 220k, $\pm 1\%$, 0603	MP003582
Chip Resistor, Thick Film, 1/10W, 620R, $\pm 1\%$, 0603	MP003542	Chip Resistor, Thick Film, 1/10W, 270k, $\pm 1\%$, 0603	MP003583
Chip Resistor, Thick Film, 1/10W, 680R, $\pm 1\%$, 0603	MP003543	Chip Resistor, Thick Film, 1/10W, 300k, $\pm 1\%$, 0603	MP003584
Chip Resistor, Thick Film, 1/10W, 820R, $\pm 1\%$, 0603	MP003544	Chip Resistor, Thick Film, 1/10W, 330k, $\pm 1\%$, 0603	MP003585
Chip Resistor, Thick Film, 1/10W, 1k, $\pm 1\%$, 0603	MP003545	Chip Resistor, Thick Film, 1/10W, 390k, $\pm 1\%$, 0603	MP003586
Chip Resistor, Thick Film, 1/10W, 1k2, $\pm 1\%$, 0603	MP003546	Chip Resistor, Thick Film, 1/10W, 470k, $\pm 1\%$, 0603	MP003587
Chip Resistor, Thick Film, 1/10W, 1k5, $\pm 1\%$, 0603	MP003547	Chip Resistor, Thick Film, 1/10W, 560k, $\pm 1\%$, 0603	MP003588
Chip Resistor, Thick Film, 1/10W, 1k8, $\pm 1\%$, 0603	MP003548	Chip Resistor, Thick Film, 1/10W, 680k, $\pm 1\%$, 0603	MP003589
Chip Resistor, Thick Film, 1/10W, 2k, $\pm 1\%$, 0603	MP003549	Chip Resistor, Thick Film, 1/10W, 820k, $\pm 1\%$, 0603	MP003590
Chip Resistor, Thick Film, 1/10W, 2k2, $\pm 1\%$, 0603	MP003550	Chip Resistor, Thick Film, 1/10W, 1M, $\pm 1\%$, 0603	MP003591
Chip Resistor, Thick Film, 1/10W, 2k7, $\pm 1\%$, 0603	MP003551	Chip Resistor, Thick Film, 1/8W, 0R, $\pm 1\%$, 0805	MP003592
Chip Resistor, Thick Film, 1/10W, 3k, $\pm 1\%$, 0603	MP003552	Chip Resistor, Thick Film, 1/8W, 1R, $\pm 1\%$, 0805	MP003593
Chip Resistor, Thick Film, 1/10W, 3k3, $\pm 1\%$, 0603	MP003553	Chip Resistor, Thick Film, 1/8W, 2R2, $\pm 1\%$, 0805	MP003594
Chip Resistor, Thick Film, 1/10W, 3k6, $\pm 1\%$, 0603	MP003554	Chip Resistor, Thick Film, 1/8W, 4R7, $\pm 1\%$, 0805	MP003595
Chip Resistor, Thick Film, 1/10W, 3k9, $\pm 1\%$, 0603	MP003555	Chip Resistor, Thick Film, 1/8W, 10R, $\pm 1\%$, 0805	MP003596
Chip Resistor, Thick Film, 1/10W, 4k7, $\pm 1\%$, 0603	MP003556	Chip Resistor, Thick Film, 1/8W, 12R, $\pm 1\%$, 0805	MP003597
Chip Resistor, Thick Film, 1/10W, 5k1, $\pm 1\%$, 0603	MP003557	Chip Resistor, Thick Film, 1/8W, 15R, $\pm 1\%$, 0805	MP003598
Chip Resistor, Thick Film, 1/10W, 5k6, $\pm 1\%$, 0603	MP003558	Chip Resistor, Thick Film, 1/8W, 18R, $\pm 1\%$, 0805	MP003599
Chip Resistor, Thick Film, 1/10W, 6k8, $\pm 1\%$, 0603	MP003559	Chip Resistor, Thick Film, 1/8W, 22R, $\pm 1\%$, 0805	MP003600
Chip Resistor, Thick Film, 1/10W, 8k2, $\pm 1\%$, 0603	MP003560	Chip Resistor, Thick Film, 1/8W, 27R, $\pm 1\%$, 0805	MP003601
Chip Resistor, Thick Film, 1/10W, 10k, $\pm 1\%$, 0603	MP003561	Chip Resistor, Thick Film, 1/8W, 33R, $\pm 1\%$, 0805	MP003602
Chip Resistor, Thick Film, 1/10W, 12k, $\pm 1\%$, 0603	MP003562	Chip Resistor, Thick Film, 1/8W, 39R, $\pm 1\%$, 0805	MP003603
Chip Resistor, Thick Film, 1/10W, 15k, $\pm 1\%$, 0603	MP003563	Chip Resistor, Thick Film, 1/8W, 47R, $\pm 1\%$, 0805	MP003604
Chip Resistor, Thick Film, 1/10W, 18k, $\pm 1\%$, 0603	MP003564	Chip Resistor, Thick Film, 1/8W, 56R, $\pm 1\%$, 0805	MP003605
Chip Resistor, Thick Film, 1/10W, 20k, $\pm 1\%$, 0603	MP003565	Chip Resistor, Thick Film, 1/8W, 68R, $\pm 1\%$, 0805	MP003606
Chip Resistor, Thick Film, 1/10W, 22k, $\pm 1\%$, 0603	MP003566	Chip Resistor, Thick Film, 1/8W, 82R, $\pm 1\%$, 0805	MP003607
Chip Resistor, Thick Film, 1/10W, 27k, $\pm 1\%$, 0603	MP003567	Chip Resistor, Thick Film, 1/8W, 100R, $\pm 1\%$, 0805	MP003608
Chip Resistor, Thick Film, 1/10W, 30k, $\pm 1\%$, 0603	MP003568	Chip Resistor, Thick Film, 1/8W, 120R, $\pm 1\%$, 0805	MP003609
Chip Resistor, Thick Film, 1/10W, 33k, $\pm 1\%$, 0603	MP003569	Chip Resistor, Thick Film, 1/8W, 130R, $\pm 1\%$, 0805	MP003610
Chip Resistor, Thick Film, 1/10W, 36k, $\pm 1\%$, 0603	MP003570	Chip Resistor, Thick Film, 1/8W, 150R, $\pm 1\%$, 0805	MP003611
Chip Resistor, Thick Film, 1/10W, 39k, $\pm 1\%$, 0603	MP003571	Chip Resistor, Thick Film, 1/8W, 160R, $\pm 1\%$, 0805	MP003612
Chip Resistor, Thick Film, 1/10W, 47k, $\pm 1\%$, 0603	MP003572	Chip Resistor, Thick Film, 1/8W, 180R, $\pm 1\%$, 0805	MP003613
Chip Resistor, Thick Film, 1/10W, 51k, $\pm 1\%$, 0603	MP003573	Chip Resistor, Thick Film, 1/8W, 200R, $\pm 1\%$, 0805	MP003614

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Description	Part Number	Description	Part Number
Chip Resistor, Thick Film, 1/8W, 220R, ±1%, 0805	MP003615	Chip Resistor, Thick Film, 1/8W, 91k, ±1%, 0805	MP003657
Chip Resistor, Thick Film, 1/8W, 270R, ±1%, 0805	MP003616	Chip Resistor, Thick Film, 1/8W, 100k, ±1%, 0805	MP003658
Chip Resistor, Thick Film, 1/8W, 330R, ±1%, 0805	MP003617	Chip Resistor, Thick Film, 1/8W, 120k, ±1%, 0805	MP003659
Chip Resistor, Thick Film, 1/8W, 390R, ±1%, 0805	MP003618	Chip Resistor, Thick Film, 1/8W, 150k, ±1%, 0805	MP003660
Chip Resistor, Thick Film, 1/8W, 470R, ±1%, 0805	MP003619	Chip Resistor, Thick Film, 1/8W, 180k, ±1%, 0805	MP003661
Chip Resistor, Thick Film, 1/8W, 510R, ±1%, 0805	MP003620	Chip Resistor, Thick Film, 1/8W, 220k, ±1%, 0805	MP003662
Chip Resistor, Thick Film, 1/8W, 560R, ±1%, 0805	MP003621	Chip Resistor, Thick Film, 1/8W, 270k, ±1%, 0805	MP003663
Chip Resistor, Thick Film, 1/8W, 620R, ±1%, 0805	MP003622	Chip Resistor, Thick Film, 1/8W, 300k, ±1%, 0805	MP003664
Chip Resistor, Thick Film, 1/8W, 680R, ±1%, 0805	MP003623	Chip Resistor, Thick Film, 1/8W, 330k, ±1%, 0805	MP003665
Chip Resistor, Thick Film, 1/8W, 820R, ±1%, 0805	MP003624	Chip Resistor, Thick Film, 1/8W, 390k, ±1%, 0805	MP003666
Chip Resistor, Thick Film, 1/8W, 1k, ±1%, 0805	MP003625	Chip Resistor, Thick Film, 1/8W, 470k, ±1%, 0805	MP003667
Chip Resistor, Thick Film, 1/8W, 1k2, ±1%, 0805	MP003626	Chip Resistor, Thick Film, 1/8W, 560k, ±1%, 0805	MP003668
Chip Resistor, Thick Film, 1/8W, 1k5, ±1%, 0805	MP003627	Chip Resistor, Thick Film, 1/8W, 680k, ±1%, 0805	MP003669
Chip Resistor, Thick Film, 1/8W, 1k8, ±1%, 0805	MP003628	Chip Resistor, Thick Film, 1/8W, 820k, ±1%, 0805	MP003670
Chip Resistor, Thick Film, 1/8W, 2k, ±1%, 0805	MP003629	Chip Resistor, Thick Film, 1/8W, 1M, ±1%, 0805	MP003671
Chip Resistor, Thick Film, 1/8W, 2k2, ±1%, 0805	MP003630	Chip Resistor, Thick Film, 1/4W, 0R, ±1%, 1206	MP003672
Chip Resistor, Thick Film, 1/8W, 2k7, ±1%, 0805	MP003631	Chip Resistor, Thick Film, 1/4W, 1R, ±1%, 1206	MP003673
Chip Resistor, Thick Film, 1/8W, 3k, ±1%, 0805	MP003632	Chip Resistor, Thick Film, 1/4W, 2R2, ±1%, 1206	MP003674
Chip Resistor, Thick Film, 1/8W, 3k3, ±1%, 0805	MP003633	Chip Resistor, Thick Film, 1/4W, 3R, ±1%, 1206	MP003675
Chip Resistor, Thick Film, 1/8W, 3k6, ±1%, 0805	MP003634	Chip Resistor, Thick Film, 1/4W, 3R3, ±1%, 1206	MP003676
Chip Resistor, Thick Film, 1/8W, 3k9, ±1%, 0805	MP003635	Chip Resistor, Thick Film, 1/4W, 4R7, ±1%, 1206	MP003677
Chip Resistor, Thick Film, 1/8W, 4k7, ±1%, 0805	MP003636	Chip Resistor, Thick Film, 1/4W, 9R1, ±1%, 1206	MP003678
Chip Resistor, Thick Film, 1/8W, 5k1, ±1%, 0805	MP003637	Chip Resistor, Thick Film, 1/4W, 10R, ±1%, 1206	MP003679
Chip Resistor, Thick Film, 1/8W, 5k6, ±1%, 0805	MP003638	Chip Resistor, Thick Film, 1/4W, 12R, ±1%, 1206	MP003680
Chip Resistor, Thick Film, 1/8W, 6k8, ±1%, 0805	MP003639	Chip Resistor, Thick Film, 1/4W, 15R, ±1%, 1206	MP003681
Chip Resistor, Thick Film, 1/8W, 8k2, ±1%, 0805	MP003640	Chip Resistor, Thick Film, 1/4W, 18R, ±1%, 1206	MP003682
Chip Resistor, Thick Film, 1/8W, 10k, ±1%, 0805	MP003641	Chip Resistor, Thick Film, 1/4W, 22R, ±1%, 1206	MP003683
Chip Resistor, Thick Film, 1/8W, 12k, ±1%, 0805	MP003642	Chip Resistor, Thick Film, 1/4W, 27R, ±1%, 1206	MP003684
Chip Resistor, Thick Film, 1/8W, 15k, ±1%, 0805	MP003643	Chip Resistor, Thick Film, 1/4W, 30R, ±1%, 1206	MP003685
Chip Resistor, Thick Film, 1/8W, 18k, ±1%, 0805	MP003644	Chip Resistor, Thick Film, 1/4W, 33R, ±1%, 1206	MP003686
Chip Resistor, Thick Film, 1/8W, 20k, ±1%, 0805	MP003645	Chip Resistor, Thick Film, 1/4W, 39R, ±1%, 1206	MP003687
Chip Resistor, Thick Film, 1/8W, 22k, ±1%, 0805	MP003646	Chip Resistor, Thick Film, 1/4W, 47R, ±1%, 1206	MP003688
Chip Resistor, Thick Film, 1/8W, 27k, ±1%, 0805	MP003647	Chip Resistor, Thick Film, 1/4W, 56R, ±1%, 1206	MP003689
Chip Resistor, Thick Film, 1/8W, 30k, ±1%, 0805	MP003648	Chip Resistor, Thick Film, 1/4W, 68R, ±1%, 1206	MP003690
Chip Resistor, Thick Film, 1/8W, 33k, ±1%, 0805	MP003649	Chip Resistor, Thick Film, 1/4W, 75R, ±1%, 1206	MP003691
Chip Resistor, Thick Film, 1/8W, 36k, ±1%, 0805	MP003650	Chip Resistor, Thick Film, 1/4W, 82R, ±1%, 1206	MP003692
Chip Resistor, Thick Film, 1/8W, 39k, ±1%, 0805	MP003651	Chip Resistor, Thick Film, 1/4W, 91R, ±1%, 1206	MP003693
Chip Resistor, Thick Film, 1/8W, 47k, ±1%, 0805	MP003652	Chip Resistor, Thick Film, 1/4W, 100R, ±1%, 1206	MP003694
Chip Resistor, Thick Film, 1/8W, 51k, ±1%, 0805	MP003653	Chip Resistor, Thick Film, 1/4W, 120R, ±1%, 1206	MP003695
Chip Resistor, Thick Film, 1/8W, 56k, ±1%, 0805	MP003654	Chip Resistor, Thick Film, 1/4W, 130R, ±1%, 1206	MP003696
Chip Resistor, Thick Film, 1/8W, 68k, ±1%, 0805	MP003655	Chip Resistor, Thick Film, 1/4W, 140R, ±1%, 1206	MP003697
Chip Resistor, Thick Film, 1/8W, 82k, ±1%, 0805	MP003656	Chip Resistor, Thick Film, 1/4W, 150R, ±1%, 1206	MP003698

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Description	Part Number	Description	Part Number
Chip Resistor, Thick Film, 1/4W, 160R, ±1%, 1206	MP003699	Chip Resistor, Thick Film, 1/4W, 12k, ±1%, 1206	MP003741
Chip Resistor, Thick Film, 1/4W, 180R, ±1%, 1206	MP003700	Chip Resistor, Thick Film, 1/4W, 13k, ±1%, 1206	MP003742
Chip Resistor, Thick Film, 1/4W, 200R, ±1%, 1206	MP003701	Chip Resistor, Thick Film, 1/4W, 15k, ±1%, 1206	MP003743
Chip Resistor, Thick Film, 1/4W, 220R, ±1%, 1206	MP003702	Chip Resistor, Thick Film, 1/4W, 18k, ±1%, 1206	MP003744
Chip Resistor, Thick Film, 1/4W, 240R, ±1%, 1206	MP003703	Chip Resistor, Thick Film, 1/4W, 22k, ±1%, 1206	MP003745
Chip Resistor, Thick Film, 1/4W, 270R, ±1%, 1206	MP003704	Chip Resistor, Thick Film, 1/4W, 24k, ±1%, 1206	MP003746
Chip Resistor, Thick Film, 1/4W, 300R, ±1%, 1206	MP003705	Chip Resistor, Thick Film, 1/4W, 27k, ±1%, 1206	MP003747
Chip Resistor, Thick Film, 1/4W, 330R, ±1%, 1206	MP003706	Chip Resistor, Thick Film, 1/4W, 33k, ±1%, 1206	MP003748
Chip Resistor, Thick Film, 1/4W, 360R, ±1%, 1206	MP003707	Chip Resistor, Thick Film, 1/4W, 36k, ±1%, 1206	MP003749
Chip Resistor, Thick Film, 1/4W, 390R, ±1%, 1206	MP003708	Chip Resistor, Thick Film, 1/4W, 39k, ±1%, 1206	MP003750
Chip Resistor, Thick Film, 1/4W, 430R, ±1%, 1206	MP003709	Chip Resistor, Thick Film, 1/4W, 43k, ±1%, 1206	MP003751
Chip Resistor, Thick Film, 1/4W, 470R, ±1%, 1206	MP003710	Chip Resistor, Thick Film, 1/4W, 47k, ±1%, 1206	MP003752
Chip Resistor, Thick Film, 1/4W, 510R, ±1%, 1206	MP003711	Chip Resistor, Thick Film, 1/4W, 51k, ±1%, 1206	MP003753
Chip Resistor, Thick Film, 1/4W, 560R, ±1%, 1206	MP003712	Chip Resistor, Thick Film, 1/4W, 56k, ±1%, 1206	MP003754
Chip Resistor, Thick Film, 1/4W, 604R, ±1%, 1206	MP003713	Chip Resistor, Thick Film, 1/4W, 68k, ±1%, 1206	MP003755
Chip Resistor, Thick Film, 1/4W, 620R, ±1%, 1206	MP003714	Chip Resistor, Thick Film, 1/4W, 82k, ±1%, 1206	MP003756
Chip Resistor, Thick Film, 1/4W, 680R, ±1%, 1206	MP003715	Chip Resistor, Thick Film, 1/4W, 100k, ±1%, 1206	MP003757
Chip Resistor, Thick Film, 1/4W, 750R, ±1%, 1206	MP003716	Chip Resistor, Thick Film, 1/4W, 120k, ±1%, 1206	MP003758
Chip Resistor, Thick Film, 1/4W, 820R, ±1%, 1206	MP003717	Chip Resistor, Thick Film, 1/4W, 150k, ±1%, 1206	MP003759
Chip Resistor, Thick Film, 1/4W, 910R, ±1%, 1206	MP003718	Chip Resistor, Thick Film, 1/4W, 180k, ±1%, 1206	MP003760
Chip Resistor, Thick Film, 1/4W, 1k, ±1%, 1206	MP003719	Chip Resistor, Thick Film, 1/4W, 200k, ±1%, 1206	MP003761
Chip Resistor, Thick Film, 1/4W, 1k1, ±1%, 1206	MP003720	Chip Resistor, Thick Film, 1/4W, 220k, ±1%, 1206	MP003762
Chip Resistor, Thick Film, 1/4W, 1k2, ±1%, 1206	MP003721	Chip Resistor, Thick Film, 1/4W, 270k, ±1%, 1206	MP003763
Chip Resistor, Thick Film, 1/4W, 1k3, ±1%, 1206	MP003722	Chip Resistor, Thick Film, 1/4W, 330k, ±1%, 1206	MP003764
Chip Resistor, Thick Film, 1/4W, 1k5, ±1%, 1206	MP003723	Chip Resistor, Thick Film, 1/4W, 390k, ±1%, 1206	MP003765
Chip Resistor, Thick Film, 1/4W, 1k6, ±1%, 1206	MP003724	Chip Resistor, Thick Film, 1/4W, 470k, ±1%, 1206	MP003766
Chip Resistor, Thick Film, 1/4W, 1k8, ±1%, 1206	MP003725	Chip Resistor, Thick Film, 1/4W, 560k, ±1%, 1206	MP003767
Chip Resistor, Thick Film, 1/4W, 2k, ±1%, 1206	MP003726	Chip Resistor, Thick Film, 1/4W, 680k, ±1%, 1206	MP003768
Chip Resistor, Thick Film, 1/4W, 2k2, ±1%, 1206	MP003727	Chip Resistor, Thick Film, 1/4W, 820k, ±1%, 1206	MP003769
Chip Resistor, Thick Film, 1/4W, 2k4, ±1%, 1206	MP003728	Chip Resistor, Thick Film, 1/4W, 1M, ±1%, 1206	MP003770
Chip Resistor, Thick Film, 1/4W, 2k7, ±1%, 1206	MP003729	Chip Resistor, Thick Film, 3/4W, 0R, ±1%, 2010	MP003771
Chip Resistor, Thick Film, 1/4W, 3k, ±1%, 1206	MP003730	Chip Resistor, Thick Film, 3/4W, 1R, ±1%, 2010	MP003772
Chip Resistor, Thick Film, 1/4W, 3k3, ±1%, 1206	MP003731	Chip Resistor, Thick Film, 3/4W, 2R2, ±1%, 2010	MP003773
Chip Resistor, Thick Film, 1/4W, 3k6, ±1%, 1206	MP003732	Chip Resistor, Thick Film, 3/4W, 10R, ±1%, 2010	MP003774
Chip Resistor, Thick Film, 1/4W, 3k9, ±1%, 1206	MP003733	Chip Resistor, Thick Film, 3/4W, 12R, ±1%, 2010	MP003775
Chip Resistor, Thick Film, 1/4W, 4k7, ±1%, 1206	MP003734	Chip Resistor, Thick Film, 3/4W, 15R, ±1%, 2010	MP003776
Chip Resistor, Thick Film, 1/4W, 5k6, ±1%, 1206	MP003735	Chip Resistor, Thick Film, 3/4W, 16R, ±1%, 2010	MP003777
Chip Resistor, Thick Film, 1/4W, 6k8, ±1%, 1206	MP003736	Chip Resistor, Thick Film, 3/4W, 18R, ±1%, 2010	MP003778
Chip Resistor, Thick Film, 1/4W, 7k5, ±1%, 1206	MP003737	Chip Resistor, Thick Film, 3/4W, 20R, ±1%, 2010	MP003779
Chip Resistor, Thick Film, 1/4W, 8k2, ±1%, 1206	MP003738	Chip Resistor, Thick Film, 3/4W, 22R, ±1%, 2010	MP003780
Chip Resistor, Thick Film, 1/4W, 10k, ±1%, 1206	MP003739	Chip Resistor, Thick Film, 3/4W, 24R, ±1%, 2010	MP003781
Chip Resistor, Thick Film, 1/4W, 11k, ±1%, 1206	MP003740	Chip Resistor, Thick Film, 3/4W, 27R, ±1%, 2010	MP003782

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Description	Part Number	Description	Part Number
Chip Resistor, Thick Film, 3/4W, 28R, ±1%, 2010	MP003783	Chip Resistor, Thick Film, 3/4W, 3k9, ±1%, 2010	MP003825
Chip Resistor, Thick Film, 3/4W, 30R, ±1%, 2010	MP003784	Chip Resistor, Thick Film, 3/4W, 4k7, ±1%, 2010	MP003826
Chip Resistor, Thick Film, 3/4W, 33R, ±1%, 2010	MP003785	Chip Resistor, Thick Film, 3/4W, 5k1, ±1%, 2010	MP003827
Chip Resistor, Thick Film, 3/4W, 36R, ±1%, 2010	MP003786	Chip Resistor, Thick Film, 3/4W, 5k6, ±1%, 2010	MP003828
Chip Resistor, Thick Film, 3/4W, 39R, ±1%, 2010	MP003787	Chip Resistor, Thick Film, 3/4W, 6k8, ±1%, 2010	MP003829
Chip Resistor, Thick Film, 3/4W, 43R, ±1%, 2010	MP003788	Chip Resistor, Thick Film, 3/4W, 8k2, ±1%, 2010	MP003830
Chip Resistor, Thick Film, 3/4W, 47R, ±1%, 2010	MP003789	Chip Resistor, Thick Film, 3/4W, 10k, ±1%, 2010	MP003831
Chip Resistor, Thick Film, 3/4W, 56R, ±1%, 2010	MP003790	Chip Resistor, Thick Film, 3/4W, 12k, ±1%, 2010	MP003832
Chip Resistor, Thick Film, 3/4W, 62R, ±1%, 2010	MP003791	Chip Resistor, Thick Film, 3/4W, 15k, ±1%, 2010	MP003833
Chip Resistor, Thick Film, 3/4W, 68R, ±1%, 2010	MP003792	Chip Resistor, Thick Film, 3/4W, 18k, ±1%, 2010	MP003834
Chip Resistor, Thick Film, 3/4W, 82R, ±1%, 2010	MP003793	Chip Resistor, Thick Film, 3/4W, 22k, ±1%, 2010	MP003835
Chip Resistor, Thick Film, 3/4W, 91R, ±1%, 2010	MP003794	Chip Resistor, Thick Film, 3/4W, 27k, ±1%, 2010	MP003836
Chip Resistor, Thick Film, 3/4W, 100R, ±1%, 2010	MP003795	Chip Resistor, Thick Film, 3/4W, 33k, ±1%, 2010	MP003837
Chip Resistor, Thick Film, 3/4W, 110R, ±1%, 2010	MP003796	Chip Resistor, Thick Film, 3/4W, 39k, ±1%, 2010	MP003838
Chip Resistor, Thick Film, 3/4W, 120R, ±1%, 2010	MP003797	Chip Resistor, Thick Film, 3/4W, 47k, ±1%, 2010	MP003839
Chip Resistor, Thick Film, 3/4W, 130R, ±1%, 2010	MP003798	Chip Resistor, Thick Film, 3/4W, 56k, ±1%, 2010	MP003840
Chip Resistor, Thick Film, 3/4W, 140R, ±1%, 2010	MP003799	Chip Resistor, Thick Film, 3/4W, 68k, ±1%, 2010	MP003841
Chip Resistor, Thick Film, 3/4W, 150R, ±1%, 2010	MP003800	Chip Resistor, Thick Film, 3/4W, 82k, ±1%, 2010	MP003842
Chip Resistor, Thick Film, 3/4W, 160R, ±1%, 2010	MP003801	Chip Resistor, Thick Film, 3/4W, 100k, ±1%, 2010	MP003843
Chip Resistor, Thick Film, 3/4W, 180R, ±1%, 2010	MP003802	Chip Resistor, Thick Film, 3/4W, 120k, ±1%, 2010	MP003844
Chip Resistor, Thick Film, 3/4W, 200R, ±1%, 2010	MP003803	Chip Resistor, Thick Film, 3/4W, 150k, ±1%, 2010	MP003845
Chip Resistor, Thick Film, 3/4W, 220R, ±1%, 2010	MP003804	Chip Resistor, Thick Film, 3/4W, 180k, ±1%, 2010	MP003846
Chip Resistor, Thick Film, 3/4W, 240R, ±1%, 2010	MP003805	Chip Resistor, Thick Film, 3/4W, 220k, ±1%, 2010	MP003847
Chip Resistor, Thick Film, 3/4W, 270R, ±1%, 2010	MP003806	Chip Resistor, Thick Film, 3/4W, 270k, ±1%, 2010	MP003848
Chip Resistor, Thick Film, 3/4W, 316R, ±1%, 2010	MP003807	Chip Resistor, Thick Film, 3/4W, 330k, ±1%, 2010	MP003849
Chip Resistor, Thick Film, 3/4W, 330R, ±1%, 2010	MP003808	Chip Resistor, Thick Film, 3/4W, 390k, ±1%, 2010	MP003850
Chip Resistor, Thick Film, 3/4W, 360R, ±1%, 2010	MP003809	Chip Resistor, Thick Film, 3/4W, 470k, ±1%, 2010	MP003851
Chip Resistor, Thick Film, 3/4W, 390R, ±1%, 2010	MP003810	Chip Resistor, Thick Film, 3/4W, 560k, ±1%, 2010	MP003852
Chip Resistor, Thick Film, 3/4W, 470R, ±1%, 2010	MP003811	Chip Resistor, Thick Film, 3/4W, 680k, ±1%, 2010	MP003853
Chip Resistor, Thick Film, 3/4W, 510R, ±1%, 2010	MP003812	Chip Resistor, Thick Film, 3/4W, 820k, ±1%, 2010	MP003854
Chip Resistor, Thick Film, 3/4W, 560R, ±1%, 2010	MP003813	Chip Resistor, Thick Film, 3/4W, 1M, ±1%, 2010	MP003855
Chip Resistor, Thick Film, 3/4W, 620R, ±1%, 2010	MP003814	Chip Resistor, Thick Film, 1W, 0R, ±1%, 2512	MP003856
Chip Resistor, Thick Film, 3/4W, 680R, ±1%, 2010	MP003815	Chip Resistor, Thick Film, 1W, 1R, ±1%, 2512	MP003857
Chip Resistor, Thick Film, 3/4W, 750R, ±1%, 2010	MP003816	Chip Resistor, Thick Film, 1W, 1R5, ±1%, 2512	MP003858
Chip Resistor, Thick Film, 3/4W, 820R, ±1%, 2010	MP003817	Chip Resistor, Thick Film, 1W, 2R2, ±1%, 2512	MP003859
Chip Resistor, Thick Film, 3/4W, 1k, ±1%, 2010	MP003818	Chip Resistor, Thick Film, 1W, 6R8, ±1%, 2512	MP003860
Chip Resistor, Thick Film, 3/4W, 1k2, ±1%, 2010	MP003819	Chip Resistor, Thick Film, 1W, 10R, ±1%, 2512	MP003861
Chip Resistor, Thick Film, 3/4W, 1k5, ±1%, 2010	MP003820	Chip Resistor, Thick Film, 1W, 12R, ±1%, 2512	MP003862
Chip Resistor, Thick Film, 3/4W, 1k8, ±1%, 2010	MP003821	Chip Resistor, Thick Film, 1W, 15R, ±1%, 2512	MP003863
Chip Resistor, Thick Film, 3/4W, 2k2, ±1%, 2010	MP003822	Chip Resistor, Thick Film, 1W, 18R, ±1%, 2512	MP003864
Chip Resistor, Thick Film, 3/4W, 2k7, ±1%, 2010	MP003823	Chip Resistor, Thick Film, 1W, 22R, ±1%, 2512	MP003865
Chip Resistor, Thick Film, 3/4W, 3k3, ±1%, 2010	MP003824	Chip Resistor, Thick Film, 1W, 27R, ±1%, 2512	MP003866

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Automotive Thick Film Chip Resistors

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Description	Part Number	Description	Part Number
Chip Resistor, Thick Film, 1W, 33R, $\pm 1\%$, 2512	MP003867	Chip Resistor, Thick Film, 1W, 5k6, $\pm 1\%$, 2512	MP003896
Chip Resistor, Thick Film, 1W, 39R, $\pm 1\%$, 2512	MP003868	Chip Resistor, Thick Film, 1W, 6k8, $\pm 1\%$, 2512	MP003897
Chip Resistor, Thick Film, 1W, 47R, $\pm 1\%$, 2512	MP003869	Chip Resistor, Thick Film, 1W, 8k2, $\pm 1\%$, 2512	MP003898
Chip Resistor, Thick Film, 1W, 56R, $\pm 1\%$, 2512	MP003870	Chip Resistor, Thick Film, 1W, 10k, $\pm 1\%$, 2512	MP003899
Chip Resistor, Thick Film, 1W, 68R, $\pm 1\%$, 2512	MP003871	Chip Resistor, Thick Film, 1W, 12k, $\pm 1\%$, 2512	MP003900
Chip Resistor, Thick Film, 1W, 82R, $\pm 1\%$, 2512	MP003872	Chip Resistor, Thick Film, 1W, 15k, $\pm 1\%$, 2512	MP003901
Chip Resistor, Thick Film, 1W, 91R, $\pm 1\%$, 2512	MP003873	Chip Resistor, Thick Film, 1W, 18k, $\pm 1\%$, 2512	MP003902
Chip Resistor, Thick Film, 1W, 100R, $\pm 1\%$, 2512	MP003874	Chip Resistor, Thick Film, 1W, 22k, $\pm 1\%$, 2512	MP003903
Chip Resistor, Thick Film, 1W, 120R, $\pm 1\%$, 2512	MP003875	Chip Resistor, Thick Film, 1W, 27k, $\pm 1\%$, 2512	MP003904
Chip Resistor, Thick Film, 1W, 150R, $\pm 1\%$, 2512	MP003876	Chip Resistor, Thick Film, 1W, 33k, $\pm 1\%$, 2512	MP003905
Chip Resistor, Thick Film, 1W, 180R, $\pm 1\%$, 2512	MP003877	Chip Resistor, Thick Film, 1W, 39k, $\pm 1\%$, 2512	MP003906
Chip Resistor, Thick Film, 1W, 220R, $\pm 1\%$, 2512	MP003878	Chip Resistor, Thick Film, 1W, 47k, $\pm 1\%$, 2512	MP003907
Chip Resistor, Thick Film, 1W, 270R, $\pm 1\%$, 2512	MP003879	Chip Resistor, Thick Film, 1W, 56k, $\pm 1\%$, 2512	MP003908
Chip Resistor, Thick Film, 1W, 330R, $\pm 1\%$, 2512	MP003880	Chip Resistor, Thick Film, 1W, 68k, $\pm 1\%$, 2512	MP003909
Chip Resistor, Thick Film, 1W, 390R, $\pm 1\%$, 2512	MP003881	Chip Resistor, Thick Film, 1W, 82k, $\pm 1\%$, 2512	MP003910
Chip Resistor, Thick Film, 1W, 470R, $\pm 1\%$, 2512	MP003882	Chip Resistor, Thick Film, 1W, 100k, $\pm 1\%$, 2512	MP003911
Chip Resistor, Thick Film, 1W, 536R, $\pm 1\%$, 2512	MP003883	Chip Resistor, Thick Film, 1W, 120k, $\pm 1\%$, 2512	MP003912
Chip Resistor, Thick Film, 1W, 560R, $\pm 1\%$, 2512	MP003884	Chip Resistor, Thick Film, 1W, 150k, $\pm 1\%$, 2512	MP003913
Chip Resistor, Thick Film, 1W, 680R, $\pm 1\%$, 2512	MP003885	Chip Resistor, Thick Film, 1W, 180k, $\pm 1\%$, 2512	MP003914
Chip Resistor, Thick Film, 1W, 820R, $\pm 1\%$, 2512	MP003886	Chip Resistor, Thick Film, 1W, 220k, $\pm 1\%$, 2512	MP003915
Chip Resistor, Thick Film, 1W, 1k, $\pm 1\%$, 2512	MP003887	Chip Resistor, Thick Film, 1W, 270k, $\pm 1\%$, 2512	MP003916
Chip Resistor, Thick Film, 1W, 1k2, $\pm 1\%$, 2512	MP003888	Chip Resistor, Thick Film, 1W, 330k, $\pm 1\%$, 2512	MP003917
Chip Resistor, Thick Film, 1W, 1k5, $\pm 1\%$, 2512	MP003889	Chip Resistor, Thick Film, 1W, 390k, $\pm 1\%$, 2512	MP003918
Chip Resistor, Thick Film, 1W, 1k8, $\pm 1\%$, 2512	MP003890	Chip Resistor, Thick Film, 1W, 470k, $\pm 1\%$, 2512	MP003919
Chip Resistor, Thick Film, 1W, 2k2, $\pm 1\%$, 2512	MP003891	Chip Resistor, Thick Film, 1W, 560k, $\pm 1\%$, 2512	MP003920
Chip Resistor, Thick Film, 1W, 2k7, $\pm 1\%$, 2512	MP003892	Chip Resistor, Thick Film, 1W, 680k, $\pm 1\%$, 2512	MP003921
Chip Resistor, Thick Film, 1W, 3k3, $\pm 1\%$, 2512	MP003893	Chip Resistor, Thick Film, 1W, 820k, $\pm 1\%$, 2512	MP003922
Chip Resistor, Thick Film, 1W, 3k9, $\pm 1\%$, 2512	MP003894	Chip Resistor, Thick Film, 1W, 1M, $\pm 1\%$, 2512	MP003923
Chip Resistor, Thick Film, 1W, 4k7, $\pm 1\%$, 2512	MP003895		

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