



*42 Years
Resistor Specialist*



Product List

Series	Power Rating	Value Range	Tol	T.C.R. ppm/°C
CHIP RESISTORS				

General Purpose

01005, 0201, 0402, 0603,
0805, 1206, 1210, 1812,
2010, 2512



RMC

1/32W
~
1W

0Ω/0.01 Ω
~
100MΩ

±1%
±2%
±5%

0.01Ω~0.015Ω: ±1500PPM/°C
0.0154Ω~0.03Ω: ±1000PPM/°C
0.033Ω~0.976Ω: ±800PPM/°C
1Ω~10Ω: ±200PPM/°C
>10Ω: ±100PPM/°C

Wide Terminal

(** is AEC-Q200 Compliant)

WR08, **WR12, WR20, WR18, **WR25



WR

1/3W
~
3W

0Ω/10mΩ
~
1MΩ

Depends on Size and value
range

Anti Surge (AEC-Q200 Compliant)

AS02, AS03, AS05, AS06, AS07,
AS10, AS12



AS

1/8W
~
2W

1Ω
~
10MΩ

±5%
±10%
±20%

1Ω~10Ω: ±400PPM/°C
10.2Ω~10MΩ: ±100PPM/°C

High Precision Anti Surge

(AEC-Q200 Compliant)

PS02, PS03, PS05, PS06, PS07,
PS10, PS12



PS

1/8W
~
2W

0.1Ω
~
10MΩ

±1%
±5%

PS02: 1Ω~10Ω: ±400PPM/°C
10.2Ω~100Ω: ±200PPM/°C
>100Ω: ±100PPM/°C
Other size: ±100PPM/°C

Anti-Electrostatic Discharge

(AEC-Q200 Compliant)

ES01, ES02, ES03, ES05,
ES06, ES07



ES

1/20W
~
1/2W

1Ω
~
10MΩ

±1%
±5%

1Ω~10Ω: ±200PPM/°C
10.2Ω~10MΩ: ±100PPM/°C
(ES01 refer catalog)

High Power (AEC-Q200 Compliant)

HP02, HP03, HP05, HP06, HP07,
HP10, HP11, HP12



HP

1/10W
~
2W

0Ω/0.01Ω
~
10MΩ

±1%
±5%

Depends on Size and value
range

Ultra High Power

(AEC-Q200 Compliant)

SP06, SP10, SP12, SP17, SP20, SP27
(Product design Patent no.: I566261)



SP

1W
~
6W

1Ω
~
10MΩ

±1%
±5%

1Ω~10Ω: ±200PPM/°C
10.1Ω~10MΩ: ±100PPM/°C

High Voltage (AEC-Q200 Compliant)

HV03, HV05, HV06, HV07, HV10, HV12



HV

1/10W
~
1W

36KΩ
~
10MΩ

±1%
±5%

±100PPM/°C

Anti Sulfurized (AEC-Q200 Compliant)

NQ01, NQ02, NQ03, NQ05, NQ06,
NQ07, NQ10, NQ12
NS01, NS02, NS03, NS05, NS06,
NS07, NS10, NS12



NQ
NS

1/20W
~
1W

0Ω/1Ω
~
10MΩ

±1%
±5%

1Ω~10Ω: ±200PPM/°C
>10Ω: ±100PPM/°C
(NQ01 refer to catalog)

Chip Array-Convex Terminal

2D02, 4D02, 4D03, 4DP3, 16P8



Array

1/16W
~
1/10W

0Ω/1Ω
~
1MΩ

±1%
±5%

±200PPM/°C
±400PPM/°C
(4D03, 4DP3 refer to catalog)

Anti-Sulfurized Chip Array-Convex

(AEC-Q200 Compliant)

2S02, 4S02, 4S03



Array

1/16W

0Ω/10Ω
~
1MΩ

±1%
±5%

±200PPM/°C
(4S03 refer to catalog)

Chip Array-Concave Terminal

2C02, 4C02, 4C03, 2F01, 4F01



Array

1/20W
~
1/16W

0Ω/1Ω
~
1MΩ

±1%
±5%

±200PPM/°C
±400PPM/°C
(4C03 refer to catalog)

Automotive Grade SMD

(AEC-Q200 Compliant)

0402, 0603, 0805, 1206, 1210, 2010,
2512



HQ
CQ

1/16W
~
1W

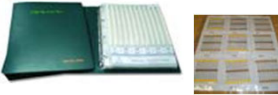
0Ω/1Ω
~
10MΩ

±1%
±5%

1Ω~10Ω: ±200PPM/°C
>10Ω: ±100PPM/°C



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Current Sense (AEC-Q200 Compliant) CS02, CS03, CS05, CS06, CS07, CS10, CS11,CS12		CS	1/8W ~ 1W	10mΩ ~ 1Ω	±1% ~ ±5%	Depends on Size and value range
Metal Strip - Current Sensing MS05, MS06, MS07, MS10, MS12 MS12 will be EOL Dec 2020		MS	1/2W ~ 2W	1mΩ ~ 200mΩ	±1% ±2% ±5%	Depends on Size and value range
Metal Strip - Ultra Low LR06, LR12		LR	1W ~ 3W	1mΩ ~ 150mΩ	±1% ±5%	±50PPM/°C
Precision Thin Film TC02, TC03, TC05, TC06, TC07, TC10, TC12		TC	1/16W ~ 3/4 W	1Ω ~ 3MΩ	±0.01% ±0.1% ±0.25% ±0.5% ±1%	±5PPM/°C ±10PPM/°C ±15PPM/°C ±25PPM/°C ±50PPM/°C
CHIP / LEADED RESISTORS KIT						
Album Type Std SMD, HP, SP Series CFR, MFR, MOR		Album	1/16W ~ 3W	E6 E12 E24	±1% ±2% ±5%	Depends on Size and value range
Plastic Bag Type CFR , MFR, MOR		Plastic Bag	1/16W ~ 1W	E6 E12 E24	±1% ±2% ±5%	Depends on Size and value range
NETWORK RESISTORS						
SIL (Single In Line) 4-14 Pins		RNL /RPL	1/8W ~ 1/5W	10Ω ~ 1MΩ	±2% ~ ±5%	<50Ω: ±250PPM/°C 50Ω~1MΩ: ±200PPM/°C >1MΩ: ±250PPM/°C (RPL refer to catalog)
MELF Resistor & Jumper						
Carbon Film (Leadless) 0102, 0204, 0207, 0309		MCxx	1/8W ~ 2W	1Ω ~ 10MΩ	±2% ~ ±5%	1Ω~100KΩ: ±350PPM/°C 101KΩ~500KΩ: ±700PPM/°C 501KΩ~1MΩ: ±1000PPM/°C 1MΩ~10MΩ: ±1500PPM/°C
Metal Film (Leadless) 0102, 0204, 0207, 0309		Mxx	1/8W ~ 2W	0.1Ω ~ 10MΩ	±0.25% ±0.5% ±1% ±2% ±5%	±15PPM/°C ±25PPM/°C ±50PPM/°C ±100PPM/°C ±200PPM/°C
Moulded MELF (High Precision Metal Film) 0204, 0207		D24 D27	1/4W 1/2W	10Ω ~ 1MΩ	±1% ±5%	±15PPM/°C ±25PPM/°C ±50PPM/°C ±100PPM/°C
Jumper Wire		ZW	φ0.45mm ~ φ1.20mm	0Ω	N/A	N/A

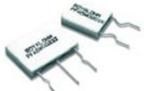


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		Series	Power Rating	Value Range	Tol	T.C.R. ppm/°C
Zero Ohm		ZOC ZOT	1/8W ~ 1/4W	0Ω	N/A	ZOC (ceramic rod) ZOT (steel rod)
COATED TYPE RESISTORS						
Carbon Film		CFR	1/8W ~ 3W	1Ω ~ 10MΩ	±2% ±5% ±10%	≤10Ω:±300PPM/°C 11Ω~99KΩ:0~-450PPM/°C 100KΩ~1MΩ:0~-700PPM/°C 1.1MΩ~10MΩ:0~-1500PPM/°C
Metal Film		MFR	1/8W ~ 3W	1Ω ~ 10MΩ	±0.1% ±0.25% ±0.5% ±1% ±2% ±5%	±15PPM/°C ±25PPM/°C ±50PPM/°C ±100PPM/°C ±200PPM/°C
Metal Oxide Film		MOR	1/4W ~ 9W	0.1Ω ~ 680KΩ	±2% ±5% ±10%	±350PPM/°C
Fusible Film (UL Approved) 		FRN	1/4W ~ 3W	0.22Ω ~ 10kΩ	±2% ±5% ±10%	±350PPM/°C
Metal Glaze Film   		MGR	1/4W ~ 3W	1KΩ ~ 100MΩ	±1% ±5%	±200PPM/°C
Power Metal		PMR	1W ~ 3W	0.56Ω ~ 10MΩ	±1% ±2% ±5%	±200PPM/°C ±350PPM/°C ±400PPM/°C
Wire-Wound (Standard)		KNP	1/4W ~ 10W	0.01Ω ~ 60KΩ	±1% ±2% ±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Wire-Wound E306074 (UL Approved) 		KNPU	1W ~ 7W	0.47Ω ~ 240Ω	±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Wire-Wound (Anti-Surge)		KNPA	1/2W ~ 10W	10Ω ~ 15KΩ	±1% ±2% ±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Fusible Wire-Wound E306074 		FWR	1W ~ 3W	0.47Ω ~ 470Ω	±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Fusible Wire-Wound E306074 (Anti-Surge & UL Approved) 		FWRA	1W ~ 3W	0.47Ω ~ 470Ω	±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Wire-Wound (Terminal Type)		KNH KNHA KNS	2W ~ 100W	0.4Ω ~ 50KΩ	±5% ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C



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Thermal Fusing Wire-Wound		TFR	1W	2.2Ω ~ 4.7Ω	±5% ±10%	±400PPM/°C
Terminal Type Metal Oxide		TMOR TMOV	3W ~ 7W	10Ω ~ 43KΩ	±5%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
CEMENT TYPE RESISTORS						
Axial Type		PRW PRWA PRWC PRWC-1	1W ~ 25W	0.1Ω ~ 200KΩ	±5% ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Radial Type		PRM PRMA PRMB PRS	2W ~ 25W	0.1Ω ~ 200KΩ	±5% ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Radial Terminal		PRZ PRV PRT PRU	5W ~ 50W	0.1Ω ~ 200KΩ	±5% ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Lead Type		PRWI	4W ~ 17W	0.1Ω ~ 39KΩ	±5% ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
Cement Thermal Fusible		FTR	1.4W ~ 5.2W	0.22Ω ~ 1.8KΩ	±5% ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
Power Flat Alloy		PFA	2W ~ 10W	0.01Ω ~ 3.3Ω	±5% ±10%	±350PPM/°C
SHUNT & COIL RESISTORS						
Shunt		CSR	4.5A ~ 50A	3mΩ ~ 50mΩ	±2% ±5% ±10%	±400PPM/°C
Coil		CSC	4A ~ 12A	3mΩ ~ 50mΩ	±5% ±10%	±200PPM/°C
INDUSTRIAL POWER RESISTORS						
Aluminum Power Dissipation		PDMS PDM	5W ~ 100W	0.01Ω ~ 35KΩ	±5% ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
Flat / Ribbon Wire-Wound		QH QL QR QRZG	20W ~ 2500W	0.2Ω ~ 200KΩ	±5% ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
Aluminum Case Wire-Wound		HEWR HBWR	60W ~ 2000W	0.5Ω ~ 15KΩ	±5% ±10%	±350PPM/°C



Product List

		Series	Power Rating	Value Range	Tol	T.C.R. ppm/°C
Thermal Fuse Wire-Wound (Blower Fan Resistor)		ASSY	12V	0.1Ω ~ 10Ω	±10%	±350PPM/°C
SURFACE MOUNT RESISTORS						
Surface Mount Wirewound Power Resistors		PWR	1W	0.1Ω ~ 200Ω	±5%	1Ω≤R≤10 Ω: ≤±50ppm/°C 10Ω<R≤200 Ω: ≤±20ppm/°C
Metal Strip Plastic Surface Mount Resistors		MP19	7W	3mΩ ~ 60mΩ	±1% ±5%	±50PPM/°C