

**Optimize your design with UNI-ROYAL resistors!**  
**Global Leader of Passive Components!**



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**IATF 16949**  
**ISO 14001**





# Product List

Series	Power Rating	Value Range	Tol	T.C.R. PPM/°C & REMARKS
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## CHIP RESISTORS

### General Purpose

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

High ohmic value Available in sizes  
0603,0805,1206,1210



RMC

1/32W 0Ω/0.01Ω  
~  
1W 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~10M: ±100PPM/°C  
>10M~100M: ±200PPM/°C  
(01005, 0201, 0402 & 0603 refer to catalog)

### Complete Pb-Free



PFOA, PF01, PF02, PF03, PF05, PF06,  
PF07, PF11, PF10, PF12



PF

1/32W 0Ω/1Ω  
~  
1W 10MΩ

±1%  
±5%

1Ω~10Ω: ±400PPM/°C  
>10Ω~100Ω: ±200PPM/°C  
>100Ω: ±100PPM/°C  
(PFOA, PF01 refer to catalog)

### Wide Terminal

WR08, WR12, WR20, WR18, WR25



WR

1/3W 0Ω/10mΩ  
~  
3W 1MΩ

±1%  
±5%

Low TCR till ±100PPM/°C.  
Depends on size, power & value.  
Refer to catalog

### Anti-Surge

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



AS

1/8W 1Ω  
~  
2W 10MΩ

±5%  
±10%  
±20%

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

### High Precision Anti-Surge

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



PS

1/8W 0.1Ω  
~  
2W 10MΩ

±1%  
±5%

PS02: 1Ω~10Ω: ±400PPM/°C  
>11Ω~100Ω: ±200PPM/°C  
>100Ω: ±100PPM/°C  
Other sizes: ±100PPM/°C

### Anti-Electrostatic Discharge

ES01, ES02, ES03, ES05,  
ES06, ES07



ES

1/20W 1Ω  
~  
1/2W 10MΩ

±1%  
±5%

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

### High Power

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



HP

1/10W 0Ω/0.01Ω  
~  
2W 10MΩ

±1%  
±5%

Low TCR till ±100PPM/°C.  
Depends on size, power & value.  
Refer to catalog

### Ultra High Power

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



SP

2W 1Ω  
~  
6W 10MΩ

±1%  
±5%

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

### High-Voltage

HV03, HV05, HV06, HV07,  
HV10, HV12



HV

1/10W 47Ω  
~  
1W 10MΩ

±1%  
±5%

±100PPM/°C

### High-Voltage Anti-Sulfurized

VS05, VS10, VS12



VS

1/8W 39KΩ  
~  
1W 10MΩ

±1%  
±5%

±100PPM/°C

### Anti-Sulfurized Automotive (NQ) High Quality Anti-Sulfurized (NS)

Q201, 0402, 0603, 0805, 1206,  
1210, 2010, 2512



NQ  
NS

1/20W 0Ω/1Ω  
~  
1W 10MΩ

±1%  
±5%

1Ω~10Ω: ±200PPM/°C  
>10Ω: ±100PPM/°C  
(NQ01, NS01 refer to catalog)

### Low T.C.R

LT02, LT03, LT05, LT06



LT

1/16W 1Ω  
~  
1/4W 1MΩ

±0.25%  
±0.5%  
±1%

1Ω~10Ω: ±100PPM/°C  
>10Ω~1M: ±50PPM/°C  
LT02: ±50PPM/°C



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<b>Automotive Standard Power</b> 0201, 0402, 0603, 0805, 1206, 1210, 2010, 2512			CQ	1/20W ~ 1W	0Ω/1Ω ~ 10MΩ	±0.5% ±1% ±2% ±5%	CQ01:1Ω~10Ω:~100~+350PPM/°C >10Ω ±200PPM/°C CQ02~CQ12: 1Ω~10Ω ±200PPM/°C >10Ω ±100PPM/°C
<b>Automotive High Power</b> 0402, 0603, 0805, 1206, 1210, 2010, 2512			HQ	1/10W ~ 2W	0Ω/1Ω ~ 10MΩ	±1% ±5%	1Ω~10Ω: ±200PPM/°C >10Ω: ±100PPM/°C
<b>Automotive Low Resistance</b> CS02, CS03, CS05, CS06, CS07, CS10, CS11, CS12			CS	1/8W ~ 1W	10mΩ ~ 1Ω	±1% ±5%	Low TCR till ±100PPM/°C. Depends on size, power & value. <i>Refer to catalog</i>
<b>Metal Strip</b> LR06, LR12			LR	1/4W ~ 3W	1mΩ ~ 350mΩ	±1%	±50PPM/°C
<b>Metal Alloy Low Resistance</b> ML05, ML06, ML12, ML25, ML28, ML27			ML	1/2W ~ 5W	0.2mΩ ~ 500mΩ	±0.5% ±1% ±2% ±5%	Low TCR till ±50PPM/°C. Depends on size, power & value. <i>Refer to catalog</i>
<b>Metal Foil</b> MS01, MS02, MS03, MS05, MS06 MS10, MS12, MS17			MS	1/5W ~ 3W	2.5mΩ ~ 200mΩ	±1%	Low TCR till ±50PPM/°C. Depends on size, power & value. <i>Refer to catalog</i>
<b>Metal Foil Wide Terminal</b> MW08, MW12, MW15, MW25			MW	1W ~ 3W	1mΩ ~ 100mΩ	±0.5% ±1% ±2%	Low TCR till ±50PPM/°C. Depends on size, power & value. <i>Refer to catalog</i>
<b>Metal Film Low Resistance</b> TL01, TL02, TL03, TL05, TL06, TL07, TL10, TL12			TL	1/10W ~ 3W	39mΩ ~ 10Ω	±0.5% ±1% ±2% ±5%	39mΩ~50mΩ: ±150PPM/°C >50mΩ~100mΩ: ±100PPM/°C >100mΩ~10Ω: ±50PPM/°C
<b>Alloy Shunt Resistors</b> RA12, RA20, RA30			RA	3W ~ 15W	0.2mΩ ~ 5mΩ	±0.5% ±1% ±2% ±5%	Low TCR till ±50PPM/°C. Depends on size, power & value. <i>Refer to catalog</i>
<b>High Precision Thin Film</b> TC02, TC03, TC05, TC06, TC07, TC10, TC12			TC	1/16W ~ 3/4W	2.49Ω ~ 3MΩ	±0.1% ±0.25% ±0.5% ±1%	Low TCR till ±5PPM/°C. Depends on size, power & value. <i>Refer to catalog</i>
<b>Chip Array (Convex)</b> 2D02, 2D03, 4D02, 4D03, 4DP3, 16P8			Array	1/16W ~ 1/10W	0Ω/1Ω ~ 1MΩ	±1% ±5%	±200PPM/°C 4D03,4DP3,16P8: <10Ω: ±400PPM/°C >10Ω: ±200PPM/°C
<b>Chip Array (Concave)</b> 2C02, 4C02, 4C03			Array	1/16W ~ 1/10W	0Ω/1Ω ~ 1MΩ	±1% ±5%	±200PPM/°C 4C03: <10Ω: ±400PPM/°C >10Ω: ±200PPM/°C
<b>Chip Array (Flat Terminal)</b> 2F01, 4F01			Array	1/20W	0Ω/10Ω ~ 1MΩ	±1% ±5%	±200PPM/°C



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**Chip Array Anti-Sulfurized**  
2S02, 4S02, 4S03



Array

1/16W

0Ω/1Ω  
~  
1MΩ

±1%  
±5%

±200PPM/°C  
4S03: <10Ω: ±400PPM/°C  
>10Ω: ±200PPM/°C

**Chip Resistors Network**  
8R06, 8S06, 10P8, 10S8, 10T8, 10E9



Resistor Network

1/32W  
1/16W

0Ω/10Ω  
~  
1MΩ

±1%  
±5%

±200PPM/°C

## CHIP / THROUGH HOLE RESISTORS KIT

**Album Type**  
\*Std SMD  
\*CQ, HP, SP12  
\*CFR, MFR, MOR



Album

1/16W  
~  
3W

E-6  
E-12  
E-24  
E-96

±1%  
±2%  
±5%

E Series and value range will depend on the resistor type

**Plastic Bag Type**  
CFR, MFR, MOR



Plastic Bag

1/16W  
~  
1W

E-6  
E-12  
E-24

±1%  
±2%  
±5%

Customize KIT is available upon request

## NETWORK RESISTORS - SIL

**Resistor Network**  
4-14 PINS



RNL  
RPL  
RNM  
RPH

1/8W  
~  
1/2W

10Ω  
~  
1MΩ

±2%  
±5%

Low TCR till ±100PPM/°C.  
Depends on type & value.  
*Refer to catalog*

## MELF RESISTORS & JUMPER

**Carbon Film - MELF**  
0204, 0207, 0309



MCxx

1/4W  
~  
2W

1Ω  
~  
5.1MΩ

±2%  
±5%

1Ω~100KΩ: ±350PPM/°C  
101KΩ~500KΩ: ±700PPM/°C  
501KΩ~1MΩ: ±1000PPM/°C  
1MΩ~5.1MΩ: ±1500PPM/°C

**Metal Film - MELF**  
0204, 0207, 0309, 0411  
Automotive grade Available!



Mxx  
Pxx  
Axx

1/6W  
~  
3W

0.22Ω  
~  
10MΩ

±0.5%  
±1%  
±2%  
±5%

Low TCR till ±25PPM/°C.  
Depends on size, power & value.  
*Refer to catalog*

**Fusible Wire Wound with Surge MELF (0309)**



FA39

1W

1Ω  
~  
470Ω

±5%

±200PPM/°C

**Jumper Wire**



ZW

φ0.45mm  
~  
φ2.00mm

0Ω

N/A

N/A

**Zero Ohm**



ZOC  
ZOT

1/8W  
~  
1/4W

0Ω

N/A

ZOC (Ceramic Rod)  
ZOT (Steel Rod)  
**ZOC 1/4W is EOL**

## THROUGH HOLE RESISTORS

**Carbon Film**



CFR

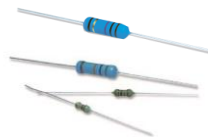
1/8W  
~  
3W

1Ω  
~  
10MΩ

±2%  
±5%  
±10%

≤10Ω: ±300PPM/°C  
11Ω~99KΩ: ±450PPM/°C  
100KΩ~1MΩ: 0~700PPM/°C  
1.1MΩ~10MΩ: 0~1500PPM/°C

**Precision Metal Film**



MFR

1/8W  
~  
3W

1Ω  
~  
10MΩ

±0.1%  
±0.25%  
±0.5%  
±1%  
±2%  
±5%

Low TCR till ±15PPM/°C.  
Depends on size, power & value.  
*Refer to catalog*

**Metal Oxide**



MOR

1/4W  
~  
9W

0.1Ω  
~  
680KΩ

±2%  
±5%  
±10%

±350PPM/°C

**Fusible**   
(UL Approved - No. E306074)



FRN

1/4W  
~  
3W

0.22Ω  
~  
10KΩ

±2%  
±5%  
±10%

±350PPM/°C





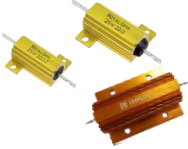





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	Series	Power Rating	Value Range	Tol	T.C.R. PPM/°C & REMARKS
<b>Metal Glaze Film</b> (UL Approved - No. E364163) 	MGR	1/4W ~ 3W	1KΩ ~ 500MΩ	±1% ~ ±5%	±200PPM/°C
<b>Power Metal</b>	PMR	1W ~ 3W	0.56Ω ~ 10MΩ	±1% ±2% ±5%	Low TCR till ±200PPM/°C. Depends on size, power & value. <i>Refer to catalog</i>
<b>Wire-Wound</b>	KNP	1/2W ~ 10W	0.01Ω ~ 60KΩ	±1% ±2% ±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
<b>Wire-Wound</b> (UL Approved - No. E306074)	KNPU	1W ~ 7W	0.47Ω ~ 240Ω	±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
<b>Anti-Surge Wire-Wound</b> High Power-small body size Available!	KNPA	1/2W ~ 10W	10Ω ~ 15KΩ	±1% ±2% ±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
<b>Fusible Wire-Wound</b> Anti surge Available - FWRA (UL Approved - No. E306074)	FWR FWRA	1W ~ 3W	0.47Ω ~ 470Ω	±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
<b>Terminal Wire-Wound</b>	KNH KNHA KNS	2W ~ 100W	0.4Ω ~ 50KΩ	±5% ~ ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
<b>Thermal Fusing Wire-Wound</b>	TFR	1W	2.2Ω ~ 4.7Ω	±5% ~ ±10%	±400PPM/°C
<b>Metal Glazed Film Fixed Resistors</b> Patent No.: 1581275	RC06 RC06-1	0.25W	1Ω ~ 10MΩ	±1% ~ ±5%	1Ω ~ 10Ω: ±400PPM/°C 11Ω ~ 100Ω: ±200PPM/°C >100Ω: ±100PPM/°C
<b>Terminal Type Metal Oxide</b>	TMOR TMOV	3W ~ 7W	10Ω ~ 43KΩ	±5%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
<b>Forming Type</b> Panasert, Avisert, Formed	CFR MFR MOR FRN KNP	1/8W ~ 5W	10Ω ~ 1MΩ	±5% ~ ±10%	Depends on resistor type, size and value. <i>Refer to catalog</i>
<b>CEMENT TYPE RESISTORS</b>					
<b>Axial Leaded</b>	PRW PRWA PRWC PRWC-1	1W ~ 25W	0.1Ω ~ 200KΩ	±5% ~ ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
<b>Radial Leaded</b>	PRM PRMA PRMB PRS	2W ~ 25W	0.1Ω ~ 200KΩ	±5% ~ ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
<b>Radial Terminal</b>	PRZ PRV PRT PRU	5W ~ 50W	0.1Ω ~ 200KΩ	±5% ~ ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
<b>Vertical or Axial</b>	PRWI	4W ~ 17W	0.1Ω ~ 39KΩ	±5% ~ ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C



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		Series	Power Rating	Value Range	Tol	T.C.R. PPM/°C & REMARKS
<b>Thermal Fusible</b>		FTR	1.4W ~ 5.2W	0.22Ω ~ 1.8KΩ	±5% ~ ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
<b>Power Flat Alloy</b>		PFA	2W ~ 10W	0.01Ω ~ 3.3Ω	±5% ~ ±10%	≥0.1Ω: ±350PPM/°C (<0.1Ω pls contact us)
<b>SHUNT &amp; COIL RESISTORS</b>						
<b>Shunt</b> CSRA, CSRB, CSRC, CSRD, CSRE, CSRJ		CSR	4.5A ~ 50A	3mΩ ~ 50mΩ	±2% ~ ±10%	±100PPM/°C
<b>Coil</b>		CSC	4A ~ 12A	3mΩ ~ 50mΩ	±5% ~ ±10%	Depends on value range
<b>INDUSTRIAL POWER RESISTORS</b>						
<b>Power Dissipation Mount</b>		PDM0 PDM1 PDM2 PDMH PDMM PDMS	5W ~ 500W	0.5Ω ~ 20KΩ	±5% ~ ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
<b>Power (Ribbon) Wire-Wound</b>		QH QL QR QRZG	20W ~ 2500W	0.2Ω ~ 200KΩ	±5% ~ ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
<b>Aluminum Case High Power Wire-Wound</b>		HEWR HBWR	60W ~ 2000W	0.5Ω ~ 15KΩ	±5% ~ ±10%	<20Ω: ±400PPM/°C ≥20Ω: ±350PPM/°C
<b>Thermal Fuse Wire-Wound (Blower Fan Resistor)</b>		ASSY	12V	0.1Ω ~ 10Ω	±10%	±350PPM/°C

**\*\*Customized design capability**

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