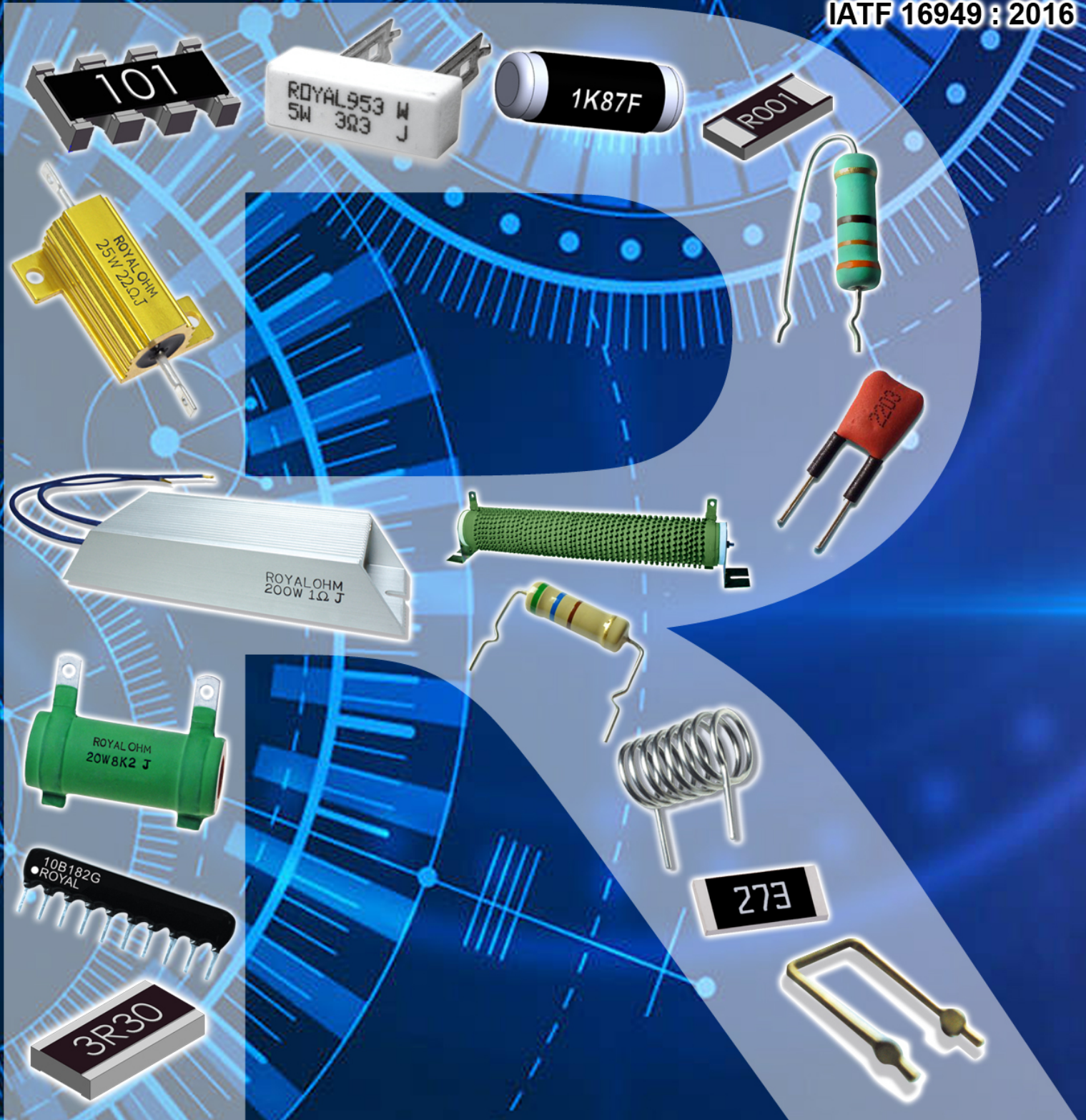




厚聲集團

IATF 16949 : 2016



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42 Years
Resistors Specialist



Product List

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

General Purpose

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



RMC

1/32W
~
1W

0Ω/0.01Ω
~
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)

Wide Terminal

(* is AEC-Q200 Compliant)

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



WR

1/3W
~
3W

0Ω/10mΩ
~
1MΩ

±1%
±5%

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
>10Ω~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
>10Ω~100Ω: ±200PPM/°C
>100Ω: ±100PPM/°C
Other sizes: ±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
>10Ω~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)

SP10, SP12, SP17, SP20, SP27

(Product design Patent no.: I566261)



SP

1W
~
6W

1Ω
~
10MΩ

±1%
±5%

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

Chip Array-Convex Terminal

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



Array

1/16W
~
1/10W

0Ω/1Ω
~
1MΩ

±1%
±5%

±200PPM/°C
(4D03, 4DP3, 16P8 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
(4C03 refer to catalog)



Product List

	Series	Power Rating	Value Range	Tol	T.C.R. PPM/°C
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
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% ~ ±5%	Depends on size and value range
Metal Strip - Ultra Low LR06, LR12	 LR	1W ~ 3W	1mΩ ~ 100mΩ	±1% ~ ±5%	±50PPM/°C
Precision Thin Film TC02, TC03, TC05, TC06, TC07, TC10, TC12	 TC	1/16W ~ 3/4W	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, CQ Series, HP Series, SP12 CFR, MFR, MOR	  Album	1/16W ~ 3W	E-6 E-12 E-24 E-96	±1% ±2% ±5%	Depends on size and value range
Plastic Bag Type CFR, MFR, MOR	 Plastic Bag	1/16W ~ 1W	E-6 E-12 E-24	±1% ±2% ±5%	Depends on size and value range

NETWORK RESISTORS

SIL (Single In Line) 4-14 Pins	 RNL /RPL	1/8W ~ 1/3W	10Ω ~ 1MΩ	±2% ~ ±5%	<50Ω: ±250PPM/°C 50Ω~1MΩ: ±200PPM/°C >1MΩ: ±250PPM/°C (RPL refer to catalog)
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MELF RESISTORS & JUMPER

Carbon Film - MELF 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 - MELF 0102, 0204, 0207, 0309	 Mxx	1/8W ~ 2W	0.1Ω ~ 10MΩ	±0.10% ±0.25% ±0.5% ±1% ±2% ±5%	±15PPM/°C ±25PPM/°C ±50PPM/°C ±100PPM/°C
Moulded MELF (Metal Film) 0204, 0207	 D24 D27	1/4W ~ 1/2W	10Ω ~ 1MΩ	±1% ~ ±5%	±15PPM/°C ±25PPM/°C ±50PPM/°C ±100PPM/°C

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Any resistor items not listed in this document, please send inquiry to your Contact Sales.



Product List






		Series	Power Rating	Value Range	Tol	T.C.R. PPM/°C	
Fusible Wire Wound MELF (0309)	New		FW39	1W 0.47Ω ~ 820Ω	±2% ±5%	≤1Ω: ±400PPM/°C >1Ω: ±200PPM/°C	
Jumper Wire			ZW	∅0.45mm ~ ∅1.20mm	0Ω	N/A	
Zero Ohm			ZOC ZOT	1/8W ~ 1/4W	0Ω	N/A	
COATED TYPE RESISTORS							
Carbon Film			CFR	1/8W ~ 3W	1Ω ~ 10MΩ	±2% ~ ±10%	≤10Ω: ±300PPM/°C 11Ω~99KΩ: ±450PPM/°C 100KΩ~1MΩ: 0~-700PPM/°C 1.1MΩ~10MΩ: 0~-1500PPM/°C
Metal Film			MFR	1/8W ~ 3W	1Ω ~ 10MΩ	±0.1% ~ ±5%	±15PPM/°C ±25PPM/°C ±50PPM/°C ±100PPM/°C ±200PPM/°C
Metal Oxide Film			MOR	1/4W ~ 9W	0.1Ω ~ 680KΩ	±2% ~ ±10%	±350PPM/°C
Fusible Film (UL Approved - No. E306074)			FRN	1/4W ~ 3W	0.22Ω ~ 10KΩ	±2% ~ ±10%	±350PPM/°C
Metal Glaze Film (UL Approved - No. E364163)	  		MGR	1/4W ~ 3W	1KΩ ~ 100MΩ	±1% ~ ±5%	±200PPM/°C
Power Metal			PMR	1W ~ 3W	0.56Ω ~ 10MΩ	±1% ~ ±5%	±200PPM/°C ±350PPM/°C ±400PPM/°C
Wire-Wound (Standard)			KNP	1/2W ~ 10W	0.01Ω ~ 60KΩ	±1% ~ ±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Wire-Wound (UL Approved - No. E306074)			KNPU	1W ~ 7W	0.47Ω ~ 240Ω	±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Wire-Wound (Anti-Surge)			KNPA	1/2W ~ 10W	10Ω ~ 15KΩ	±1% ~ ±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C
Fusible Wire-Wound (UL Approved - No. E306074)			FWR	1W ~ 3W	0.47Ω ~ 470Ω	±5%	<20Ω: ±400PPM/°C ≥20Ω: ±300PPM/°C

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Product List

	Series	Power Rating	Value Range	Tol	T.C.R. PPM/°C
Fusible Wire-Wound w/ Anti-Surge (UL Approved - No. E306074) 	 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
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%	≥0.1Ω: ±350PPM/°C (<0.1Ω pls contact us)

SHUNT & COIL RESISTORS

Shunt	 CSR	4.5A ~ 50A	3mΩ ~ 50mΩ	±2% ±5% ±10%	±400PPM/°C
Coil	 CSC	4A ~ 12A	3mΩ ~ 50mΩ	±5% ±10%	Depends on value range

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Product List

Series	Power Rating	Value Range	Tol	T.C.R. PPM/°C
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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

Thermal Fuse Wire-Wound (Blower Fan Resistor)



ASSY

12V

0.1Ω
~
10Ω

±10%

±350PPM/°C

SURFACE MOUNT RESISTORS

Surface Mount **New** Wirewound Power Resistors



PWR

1W

1Ω
~
200Ω

±5%

1Ω ≤ R ≤ 10Ω: ≤ ±50PPM/°C
10Ω < R ≤ 200Ω: ≤ ±20PPM/°C

Metal Strip **New** Plastic Surface Mount Resistors



MP19

7W

3mΩ
~
60mΩ

±1%
±5%

±50PPM/°C