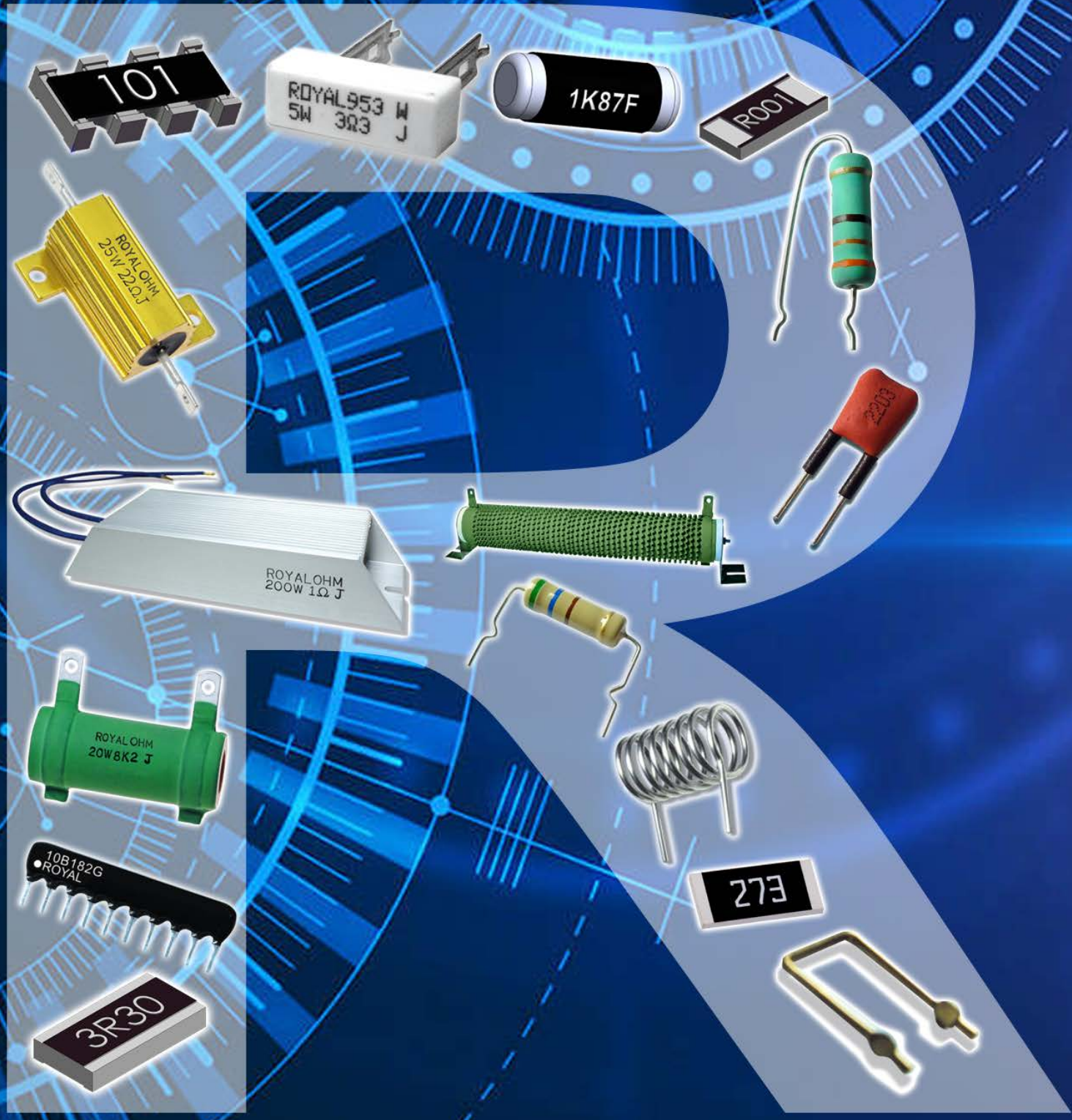




厚聲集團

IATF 16949 : 2016



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42 Years
Resistor 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 ~ 3W	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: ±100PPM/°C
Wide Terminal (AEC-Q200 Compliant) WR08, WR12, WR20, WR18, WR25		WR				
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 & value range
Ultra High Power (AEC-Q200 Compliant) SP06, SP10, SP12(Patent no.: I566261) SP17, SP20, SP27		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, NQS10, 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 (AEC-Q200 Compliant) 2D02, 4D02, 4D03, 4DP3, 16P8		Array	1/16W ~ 1/10W	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	10Ω ~ 1MΩ	±1% ±5%	±200PPM/°C (4S03 refer to catalog)
Chip Array-Concave Terminal (AEC-Q200 Compliant) 2C02, 4C02, 4C03, 2F01, 4F01		Array	1/20W ~ 1/16W	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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CHIP RESISTORS

Current Sense

(AEC-Q200 Compliant)
CS02, CS03, CS05, CS06, CS07,
CS10, CS11, CS12



CS

1/8W
~
1W

10mΩ
~
1Ω

±1%
±5%

Depends on size &
value range

Metal Strip - Current Sensing

(AEC-Q200 Compliant)
MS05, MS06, MS07, MS10, MS12



MS

1/2W
~
2W

1mΩ
~
200mΩ

±1%
±2%
±5%

Depends on size &
value range

Metal Strip - Ultra Low

(AEC-Q200 Compliant)
LR06, LR12



LR

1W
~
3W

0.5mΩ
~
10mΩ

±1%
±5%

±50PPM/°C
±100PPM/°C
±300PPM/°C

Precision Thin Film

TC02, TC03, TC05,
TC06, TC07, TC10, TC12



TC

1/16W
~
3/4W

1Ω
~
3MΩ

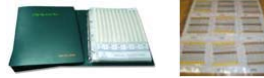
±0.01%
±0.1%
±0.25%
±0.5%
±1%

±5PPM/°C
±10PPM/°C
±15PPM/°C
±25PPM/°C
±50PPM/°C

CHIP / LEADED RESISTORS KIT

Album Type

Std SMD, HP, SP Series
CFR, MFR, MOR



Album

1/16W
~
3W

E6
E12
E24

±1%
±2%
±5%

Depends on
size /value range / type

Plastic Bag Type

CFR, MFR, MOR



Plastic
Bag

1/16W
~
1W

E6
E12
E24

±1%
±2%
±5%

Depends on
size /value range / type

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

0207



D27

1/4W
~
1/2W

2.41Ω
~
1MΩ

±1%
±5%

±25PPM/°C
±50PPM/°C
±100PPM/°C

Jumper Wire



ZW

φ0.45mm
~φ1.20mm

0Ω

N/A

N/A

Zero Ohm



ZOC
ZOT

1/8W
~1/4W






















0Ω

N/A

ZOC (ceramic rod)
ZOT (steel rod)

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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 ~ 1MΩ	±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 ~ 15kΩ	±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
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







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Series	Power Rating	Value Range	Tol	T.C.R. ppm/°C
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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
Cement		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
Thermal Fuse Wire-Wound (Blower Fan Resistor)		ASSY	12V	0.1Ω ~ 10Ω	±10%	±350PPM/°C

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