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Category Resistors

Passive Devices

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Resistors Quick Reference of Package Size

Shunt Resistors

High Power Metal Plate Shunt Resistors lineup

Size mm (inch)	Part No.	Terminal type Wide Terminal	Attached type Reverse Attached	Specification General-purpose Ultra-low resistance High Power	Resistance Range (mΩ)	Rated Power (W) (Rated Terminal Temperature)	Printing Page
5025 (2010)	GMR50			✓	5 to 220	4 (90°C) 3 (110°C)	P.232
6432 (2512)	PSR100			✓	☆0.2	12 (120°C)	P.230
					0.3, 0.5, 1	8 (75°C) 4 (140°C)	
					2	6 (75°C) 4 (140°C)	
					3	4 (75°C) 3 (140°C)	
					7 (70°C) 5 (110°C)		
	GMR100			✓	5 to 220	15 (120°C)	P.232
6464 (2525)	☆PSR330			✓	0.1	8 (100°C)	P.230
					0.5	6 (100°C)	
7142 (2817)	GMR320			✓	5 to 100	10 (70°C) 7 (110°C)	P.232
7.9×5.6 (3222)	PSR350			✓	0.27	12 (120°C)	P.231
10×5.2 (3921)	PSR400			✓	0.2	12 (75°C) 5 (130°C)	P.230
					0.3, 0.5	10 (75°C) 5 (130°C)	
					1	8 (75°C) 5 (130°C)	
					2	6 (75°C) 4 (115°C)	
					3	5 (70°C) 3 (115°C)	
15×7.75 (5931)	PSR500			✓	0.1, 0.2	15 (75°C) 10 (120°C)	P.230
					0.3, 0.4, 0.5	10 (75°C) 7 (120°C)	
					1	10 (75°C) 6 (120°C)	
					2	7 (70°C) 4 (115°C)	

☆: Under Development

Metal Plate Shunt Resistors lineup

Size mm (inch)	Part No.	Terminal type Wide Terminal	Attached type Reverse Attached	Specification General-purpose Ultra-low resistance High Power	Resistance Range (mΩ)	Rated Power (W)	Printing Page
1005 (0402)	PMR01			✓	10	0.2	P.234
1608 (0603)	PMR03			✓	10	0.25	P.234
2012 (0805)	PMR10			✓	2	1	P.234
	☆PMR10L			✓	3 to 10	0.5	P.235
					0.5 to 2	2	
					3 to 10	1	
1220 (0508)	PML10	✓		✓	1 to 2.5	0.66	P.236
3216 (1206)	PMR18			✓	1, 2	1.5	P.234
	☆PMR18L			✓	3 to 10	1	P.235
					0.5 to 2	3	
1632 (0612)	PML18	✓		✓	3 to 10	1.5	P.236
3225 (1210)	PMR25			✓	0.5 to 2.5	1	P.236
5025 (2010)	PMR50			✓	1	2	P.234
					2 to 5	1	P.234
2550 (1020)	PML50	✓		✓	1, 2	2	P.234
6432 (2512)	PMR100			✓	3 to 10	1	P.234
					0.5, 2.2	2	P.236
					0.5 to 1.5	☆5	P.233
					1, 2	3	P.234
3264 (1225)	PML100	✓		✓	3 to 10	2	P.236
					0.5	2	
					1 to 2.2	3 (25°C)* 2 (70°C)*	

*Rated Ambient Temperature

☆: Under Development

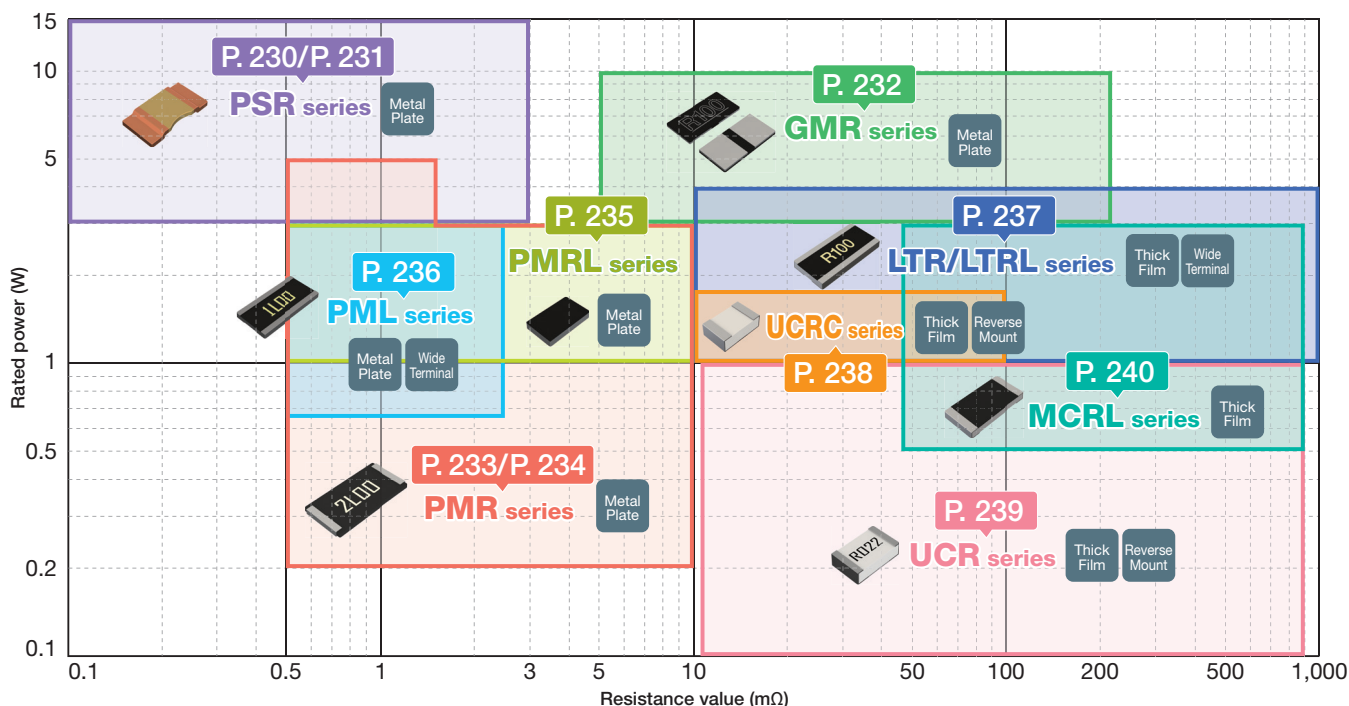
Thick Film Shunt Resistors lineup

Size mm (inch)	Part No.	Terminal type Wide Terminal	Attached type Reverse Attached	Specification General-purpose Ultra-low resistance High Power	Resistance Range (mΩ)	Rated Power (W)	Printing Page
0603 (0201)	UCR006		✓		100 to 910	0.1	P.239
1005 (0402)	UCR01		✓		68 to 910	0.125	P.239
1608 (0603)	UCR03		✓		20 to 200 220 to 910	0.25 0.2	P.239
2012 (0805)	☆UCR10C		✓		10 to 12	1	P.238
	UCR10		✓		13 to 100	1.25	P.239
					11 to 100	0.33	
1220 (0508)	MCR10L			✓	47 to 910	0.5	P.240
	LTR10L	✓		✓	33 to 910	1	P.237
3216 (1206)	☆UCR18C		✓		10 to 100	1.75	P.238
	UCR18		✓		11 to 39	1	P.239
					43 to 100	0.5	
					47 to 910	0.75	
1632 (0612)	LTR18	✓		✓	10 to 1000	1.5	P.237
3225 (1210)	☆MCR25L			✓	47 to 910	1.25	P.240
5025 (2010)	☆MCR50L			✓	47 to 910	2	P.240
2550 (1020)	LTR50	✓		✓	10 to 910	New 3	P.237
6432 (2512)	☆MCR100L			✓	47 to 910	3	P.240
3264 (1225)	LTR100L	✓		✓	10 to 91	4	P.237
	LTR100	✓		✓	100 to 910	New 3	P.237

☆: Under Development

Resistors Quick Reference of Package Size

Shunt Resistors Table



Thick Film Chip Resistors (Standard series/High Reliability series)

Thick Film Chip Resistors (Standard series/High Reliability series) lineup

Size mm (inch)	Part No.	RAS MID™ package	Terminal type	General-purpose	Tolerance for Sulfurization	Anti-surge	High Anti-surge	High Power	High Voltage Resistance	Resistance Range (Ω)	Rated Power (W)	Printing Page
03015 (009005)	SMR003	✓	Wide Terminal							10 to 1M	0.02	P.252
0402 (01005)	MCR004			✓						1 to 1M	0.031 (1/32)	P.248
	New MCR004E			✓						1 to 1M	0.031 (1/32)	P.249
0603 (0201)	MCR006			✓						1 to 10M	0.05	P.248
	ESR01					✓				1 to 10M	0.2	P.241
1005 (0402)	SFR01				✓					1 to 10M	0.063 (1/16)	P.245
	MCR01S			✓				✓		1 to 10M	0.1	P.246
	MCR01			✓						1 to 10M	0.063 (1/16)	P.248
	SDR03						✓			1 to 10M	New 0.4	P.241
1608 (0603)	ESR03					✓				1 to 976	New 0.33 (1/3)	P.241
	KTR03								✓	1k to 10M	0.25	P.241
	SFR03				✓					1 to 10M	0.1	P.244
	MCR03S			✓				✓		1 to 10M	0.125	P.245
	MCR03			✓						1 to 10M	0.1	P.246
	SDR10						✓			1 to 10M	New 0.66 (2/3)	P.248
2012 (0805)	ESR10					✓				1 to 976	New 0.5	P.241
	KTR10								✓	1k to 10M	0.4	P.241
	SFR10				✓					1 to 30M	0.125	P.244
	MCR10S			✓				✓		1 to 10M	0.125	P.245
	MCR10			✓						1 to 10M	0.25	P.246
										10 to 1M	0.1	P.248
										1 to 10M	0.125	P.248
1220 (0508)	LTR10		✓			✓		✓		1 to 976	1	P.243
										1k to 1M	0.25	P.243
										1 to 976	New 0.75	P.241
3216 (1206)	ESR18					✓				1k to 10M	0.5	P.241
	KTR18								✓	1 to 10M	0.25	P.244
	SFR18				✓					1 to 10M	0.25	P.245
	MCR18S			✓				✓		1 to 10M	0.4	P.246
	MCR18			✓						10 to 1M	0.125	P.248
										1 to 10M	0.25	P.248
1632 (0612)	LTR18		✓			✓		✓		1 to 976	1.5	P.243
										1k to 1M	0.75	P.243
3225 (1210)	ESR25					✓				1 to 10M	New 1	P.241
	KTR25								✓	1 to 10M	0.33 (1/3)	P.244
	SFR25				✓					1 to 1M	0.5	P.245
	☆MCR25S			✓				✓		1 to 1M	0.5	P.246
5025 (2010)	New MCR50S			✓				✓		1 to 4.7M	1.5	P.246
2550 (1020)	LTR50		✓			✓		✓		1 to 1M	1, ☆2	P.243
6432 (2512)	New MCR100S			✓				✓		1 to 4.7M	2	P.246
3264 (1225)	LTR100		✓			✓		✓		1 to 1M	New 3	P.243

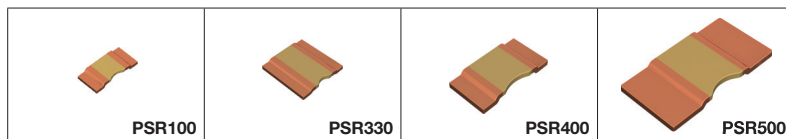
©RAS MID™: ROHM's proprietary new method that enables superior dimensional precision, making it possible to develop the ultra-compact products.
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☆: Under Development

For Current Detection

High Power Metal Plate Shunt Resistors <Ultra Low ohmic> (PSR series)

- High power 3W to 15W.
- Excellent TCR characteristics.
- Convex structure.
- Ultra low resistance range (0.1mΩ or more).



PSR series								
Part No.	Size Code mm (inch)	Rated Power (W) (Rated Terminal Temperature)		Tolerance	Temperature* Coefficient (ppm/°C)	Resistance Value (mΩ)	Operating Temperature (°C)	Automotive Grade AEC-Q200
		Low temperature side	High temperature side					
PSR100	6432 (2512)	12 (120°C)		F (±1%)	150±50	☆0.2		YES
		8 (75°C)	4 (140°C)		0 to +150	0.3		
		8 (75°C)	4 (140°C)		0 to +100	0.5		
		8 (75°C)	4 (140°C)		0 to +100	1.0		
		6 (75°C)	4 (140°C)		0 to +50	2.0		
		4 (75°C)	3 (140°C)		0 to +50	3.0		
☆PSR330	6464 (2525)	15 (120°C)		F (±1%)	100±50	0.1		YES
		8 (100°C)			0 to +100	0.5		
		6 (100°C)			0 to +50	1.0		
PSR400	10×5.2 (3921)	12 (75°C)	5 (130°C)	F (±1%)	125±50	0.2	-65 to +175	YES
		10 (75°C)	5 (130°C)		0 to +100	0.3		
		10 (75°C)	5 (130°C)		0 to +100	0.5		
		8 (75°C)	5 (130°C)		0 to +75	1.0		
		6 (75°C)	4 (115°C)		0 to +75	2.0		
		5 (70°C)	3 (115°C)		0 to +75	3.0		
PSR500	15×7.75 (5931)	15 (75°C)	10 (120°C)	F (±1%)	200±50	0.1		YES
		15 (75°C)	10 (120°C)		0 to +150	0.2		
		10 (75°C)	7 (120°C)		0 to +150	0.3		
		10 (75°C)	7 (120°C)		0 to +150	0.4		
		10 (75°C)	7 (120°C)		0 to +150	0.5		
		10 (75°C)	6 (120°C)		0 to +75	1.0		
		7 (70°C)	4 (115°C)		0 to +75	2.0		

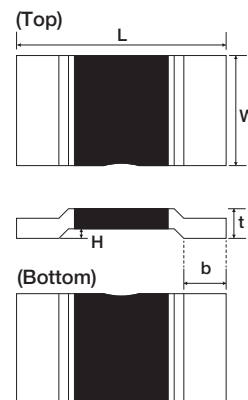
* (+20°C to +175°C)

☆: Under Development

Dimensions (Unit: mm)

Part No.	Resistance (mΩ)	L	W	t	H	b
PSR100	0.2	6.35±0.15	3.05±0.25	1.80±0.15	0.35±0.15	1.12±0.3
	0.3			1.45±0.15		
	0.5			1.15±0.15		
	1.0			0.75±0.15		
	2.0			1.00±0.15		
	3.0			0.75±0.15		
PSR330	0.1	6.35±0.15	6.35±0.25	1.81±0.15	0.35±0.15	1.12±0.3
	0.5			0.75±0.15		
	1.0			1.00±0.15		
PSR400	0.2	10±0.3	5.2±0.3	1.9±0.15	0.5±0.15	2.0±0.6
	0.3			1.85±0.15		
	0.5			1.3±0.15		
	1.0			0.9±0.15		
	2.0			1.1±0.15		
	3.0			0.9±0.15		
PSR500	0.1	15±0.3	7.75±0.3	1.96±0.15	0.5±0.15	4.6±0.6
	0.2			1.85±0.15		4.0±0.6
	0.3			1.4±0.15		
	0.4			1.15±0.15		
	0.5			1.05±0.15		
	1.0			1.35±0.15		
	2.0			0.9±0.15		

●PSR100/330/400/500



Product No. Explanation

P	S	R	4	0	0	I	T	Q	F				
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Part No.

Tolerance

Special Part Code

Nominal Resistance

F ±1%

B	0.1mΩ	F	0.5mΩ
C	0.2mΩ	H	1.0mΩ
D	0.3mΩ	J	2.0mΩ
E	0.4mΩ	L	3.0mΩ

Resistance code, 4 digits.	
Tolerance	Resistance code
F	: 4 digits

Packaging Specifications Code

Part No.	Code	Tolerance F (±1%)	Packaging Specifications	Reel	Basic Ordering Unit (pcs)
PSR100	ITQ*	○	Embossed tape (8mm Pitch)	φ330mm (13inch)	3,000
	KTQ*	○	Embossed tape (8mm Pitch)	φ330mm (13inch)	5,000
PSR330	ITQ	○	Embossed tape (8mm Pitch)	φ330mm (13inch)	3,000
PSR400	ITQ	○	Embossed tape (8mm Pitch)	φ330mm (13inch)	3,000
PSR500	HTQ	○	Embossed tape (12mm Pitch)	φ330mm (13inch)	2,000

*ITQ: Apply to 2mΩ

*KTQ: Apply from 0.3mΩ to 3mΩ

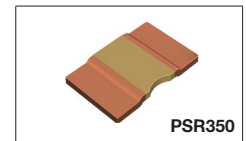
○: Standard product Reel (φ330mm): Compatible with JEITA standard "EIAJ ET-7200B"

Resistance	F
0.1mΩ	0L10
0.2mΩ	0L20
0.3mΩ	0L30
0.4mΩ	0L40
0.5mΩ	0L50
1.0mΩ	1L00
2.0mΩ	2L00
3.0mΩ	3L00

For Current Detection

High Power Metal Plate Shunt Resistors <Ultra Low ohmic> <Low profile> (PSR350)

- Perfect for use embedded power module by low height structure.
- Circuit space can be saved by guaranteed the same rated power as one size larger product.
- Limiting current 210A.



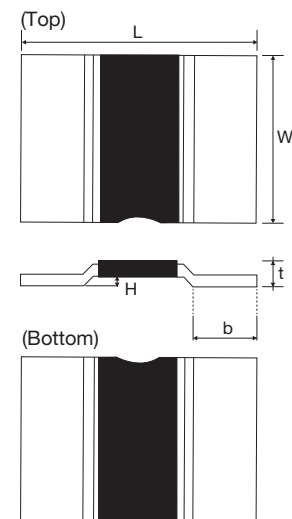
PSR350								
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Terminal Temperature (°C)	Tolerance	Temperature* Coefficient (ppm/°C)	Resistance Value (mΩ)	Operating Temperature (°C)	Automotive Grade AEC-Q200
PSR350	7.9x5.6 (3222)	12	120	F (±1%)	0 to +150	0.27	-65 to +175	YES

*(+20°C to +175°C)

■ Dimensions (Unit: mm)

Part No.	Resistance (mΩ)	L	W	t	H	b
PSR350	0.27	7.9±0.1	5.6±0.3	0.85±0.15	0.35±0.15	2.1±0.20

● PSR350



■ Product No. Explanation

P	S	R	3	5	0	K	T	Q	F	C	W	0	L	2	7
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Part No.

Tolerance

F ±1%

Special Part Code

CW 0.27mΩ

Nominal Resistance

Resistance code, 4 digits.	
Tolerance	Resistance code
F	: 4 digits
Resistance	F
0.27mΩ	0L27

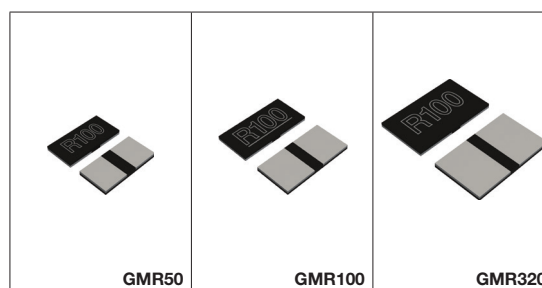
Packaging Specifications Code

Part No.	Code	Tolerance F (±1%)	Packaging Specifications	Reel	Basic Ordering Unit (pcs)
PSR350	KTQ	⊙	Embossed tape (8mm Pitch)	φ330mm (13inch)	5,000

⊙: Standard product Reel (φ330mm): Compatible with JEITA standard "EIAJ ET-7200B"

For Current Detection High Power Metal Plate Shunt Resistors (GMR series)

- High power (3W to 10W).
- High heat dissipation.
- Excellent TCR characteristics.
- Low ohmic (5mΩ to 220mΩ).



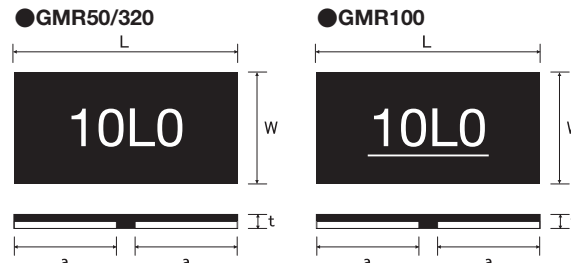
GMR series								
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Terminal Temperature (°C)	Tolerance	Temperature*1 Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
GMR50	5025 (2010)	4	90	F (±1%)	0 to +25	5mΩ	-65 to +170	YES
		3	110	F (±1%)	±25	10mΩ to 220mΩ (E24 series)*2		
GMR100	6432 (2512)	7	70	F (±1%)	0 to +25	5mΩ		YES
		5	110	F (±1%)	±25	10mΩ to 220mΩ (E24 series)*2		
GMR320	7142 (2817)	10	70	F (±1%)	0 to +50	5mΩ		YES
		7	110	F (±1%)	±25	10mΩ to 100mΩ (E24 series)*2		

*1 (+20°C to +60°C)

*2 Development schedule will vary depending on resistance value. Please contact us for resistance values.

■ Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a
GMR50	5025 (2010)	5.00±0.25	2.50±0.25	0.40±0.15	2.05±0.25
GMR100	6432 (2512)	6.40±0.25	3.20±0.25	0.40±0.15	2.75±0.25
GMR320	7142 (2817)	7.10±0.25	4.20±0.25	0.40±0.15	3.10±0.25



■ Product No. Explanation

G M R 1 0 0 H J A A F D									
Part No.	Product Specifications				Tolerance		Special Part Code		Nominal Resistance
	JA	5mΩ			A	Outside E24 series	A	10mΩ, 100mΩ	Resistance code, 4 digits.
	JB	10mΩ ≤ R < 100mΩ			F	±1%	D	5mΩ	Tolerance Resistance code
	JC	100mΩ ≤ R ≤ 220mΩ					E	15mΩ, 150mΩ	F : 4 digits
							G	18mΩ	Resistance F
							H	20mΩ	5mΩ 5L00
							I	22mΩ, 220mΩ	10mΩ 10L0
							K	27mΩ	15mΩ R015
							M	33mΩ	20mΩ R020
							Q	47mΩ	22mΩ R022
							W	82mΩ	27mΩ R027
									33mΩ R033
									47mΩ R047
									82mΩ R082
									100mΩ R100
									150mΩ R150
									220mΩ R220

Packaging Specifications Code

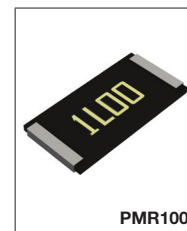
Part No.	Code	Tolerance F (±1%)	Packaging Specifications	Reel	Basic Ordering Unit (pcs)
GMR50	H	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	2,000
GMR100	H	○	Embossed tape (8mm Pitch)	φ180mm (7inch)	2,000
GMR320	H	○	Embossed tape (8mm Pitch)	φ180mm (7inch)	2,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
 ○: Standard product

For Current Detection

Metal Plate Shunt Resistors <Ultra Low ohmic> <High Power Type> (PMR100)

- Rated power of 5W realized by 2512 size, contributing to circuit space saving.
- Achieved an excellent temperature characteristics by using a special alloy for the resistive element.
- For current detection: Supported from 0.5mΩ.



PMR100

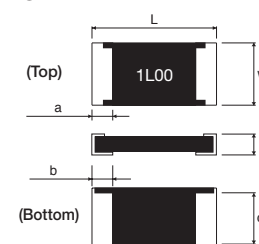
PMR100 high power type									
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Value (mΩ)	Operating Temperature (°C)	Automotive Grade AEC-Q200
☆PMR100	6432 (2512)	5	—	130	F (±1%)	±75	0.5	-65 to +175	YES
				110			1		
				90			1.5		

☆: Under Development

Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	Resistance Value (mΩ)	L	W	t	a	b	c
PMR100	6432 (2512)	0.5	6.40±0.25	3.2±0.25	0.52±0.15	0.50±0.25	2.40±0.25	2.65±0.25
		1	6.40±0.25	3.2±0.25	0.44±0.15	0.50±0.25	2.30±0.25	2.90±0.25
		1.5	6.40±0.25	3.2±0.25	0.44±0.15	0.50±0.25	1.65±0.25	2.65±0.25

PMR100



Product No. Explanation

P	M	R	1	0	0	H	Z	P	7	F	V				
Part No.						Tolerance		Special Part Code							
						F	±1%	V 0.5mΩ to 1.5mΩ							

Packaging Specifications Code

Part No.	Code	Tolerance F (±1%)	Packaging Specifications	Reel	Basic Ordering Unit (pcs)
PMR100	HZP7	◎	Embossed tape (4mm Pitch)	φ180mm (7inch)	2,000

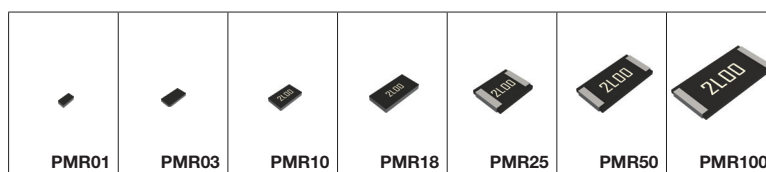
Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
◎: Standard product

Nominal Resistance

Resistance code, 4 digits.	
Tolerance	Resistance code
F	: 4 digits
Resistance Value (Ω)	Tolerance
0.5mΩ	0L50
1mΩ	1L00
1.5mΩ	1L50

For Current Detection Metal Plate Shunt Resistors <Ultra Low ohmic> (PMR series)

- Avoiding heat concentration with trimmingless structure and the reducing the surface temperature rise.
- Achieved an excellent temperature characteristics by using a special alloy for the resistive element.
- Ultra low-ohmic resistance range (1mΩ or more).



Rated power up PMR series									
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Value (mΩ)	Operating Temperature (°C)	Automotive Grade AEC-Q200
PMR10	2012 (0805)	1	—	130	F (±1%) J (±5%)	±100	2	-65 to +155	YES
PMR18	3216 (1206)	1.5	—	130	F (±1%) J (±5%)	±100	1, 2		YES
PMR25	3225 (1210)	2	—	130	F (±1%) J (±5%)	±75	1	-65 to +175	YES
PMR50	5025 (2010)	2	—	130	F (±1%) J (±5%)	±75	1, 2		YES
PMR100	6432 (2512)	3	—	130	F (±1%) J (±5%)	±150	1, 2		YES

PMR series									
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Value (mΩ)	Operating Temperature (°C)	Automotive Grade AEC-Q200
PMR01	1005 (0402)	0.2	70	—	J (±5%)	0 to 200	10	-55 to +155	YES
PMR03	1608 (0603)	0.25	70	—	F (±1%) J (±5%)	0 to 150	10		YES
PMR10	2012 (0805)	0.5	70	—	F (±1%) J (±5%)	±150	3, 4, 5, 6, 7, 8, 9, 10		YES
PMR18	3216 (1206)	1	70	—	F (±1%) J (±5%)	±100	3, 4, 5, 6, 7, 8, 9, 10		YES
PMR25	3225 (1210)	1	70	—	F (±1%) J (±5%)	±100	2, 3, 4, 5		YES
PMR50	5025 (2010)	1	70	—	F (±1%) J (±5%)	±100	3, 4, 5, 6, 7, 8, 9, 10		YES
PMR100	6432 (2512)	2	70	—	F (±1%) J (±5%)	±100	3, 4, 5, 6, 7, 8, 9, 10		YES

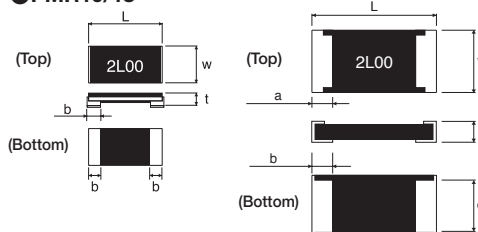
Large Current Jumper type					
Part No.	Size Code mm (inch)	Rated Current (A)	Resistance	Operating Temperature (°C)	Automotive Grade AEC-Q200
PMR01	1005 (0402)	20.0	0.5mΩ Max	-55 to +155	YES
PMR03	1608 (0603)	22.4			YES
PMR10	2012 (0805)	31.6			YES
PMR18	3216 (1206)	38.7			YES
PMR25	3225 (1210)	44.7			YES
PMR50	5025 (2010)	50.0			YES
PMR100	6432 (2512)	63.2			YES

■ Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b	c
PMR01	1005 (0402)	1.0±0.05	0.5±0.05	0.25±0.1	—	0.25±0.10	—
PMR03	1608 (0603)	1.6±0.15	0.8±0.15	0.25±0.1	—	0.35±0.15	—
PMR10	2012 (0805)	2.0±0.15	1.2±0.15	0.42 to 0.28*±0.15	—	0.75 to 0.35*±0.25	—
PMR18	3216 (1206)	3.2±0.15	1.6±0.15	0.44 to 0.28*±0.15	—	1.20 to 0.5 *±0.25	—
PMR25	3225 (1210)	3.2±0.2	2.5±0.2	0.52 to 0.32*±0.15	0.5±0.2	1.00 to 0.8 *±0.2	1.95±0.2
PMR50	5025 (2010)	5.0±0.2	2.5±0.2	0.52 to 0.32*±0.15	0.5±0.2	1.85 to 0.9 *±0.2	1.95±0.2
PMR100	6432 (2512)	6.4±0.25	3.2±0.25	0.52 to 0.32*±0.15	0.5±0.25	2.3 to 1.1 *±0.25	2.65±0.25

*Each value range varies with the resistance. Please contact a ROHM sales representative for further details.

- PMR01/03 (No marking)
- PMR25/50/100
- PMR10/18



■ Product No. Explanation



Part No.

Tolerance

Special Part Code

Nominal Resistance

F	±1%
J	±5%

J is also used for jumper

V	1mΩ to 4mΩ
U	5mΩ to 10mΩ

Jumper type doesn't have a special part code

Tolerance	Resistance code
F	: 4 digits
J	: 3 digits

Packaging Specifications Code

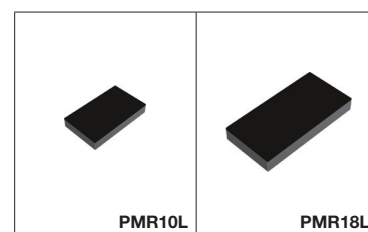
Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)			
PMR01	ZZP	○	—	Embossed tape (2mm Pitch)	φ180mm (7inch)	10,000
PMR03	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
PMR10	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
PMR18	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
PMR25	HZP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	2,000
PMR50	HZP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	2,000
PMR100	HZP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	2,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
 ○: Standard product

Resistance Value (Ω)	Tolerance	
	J	F
Jumper	000	—
1mΩ	1L0	1L00
2mΩ	2L0	2L00
3mΩ	3L0	3L00
4mΩ	4L0	4L00
5mΩ	5L0	5L00
6mΩ	6L0	6L00
7mΩ	7L0	7L00
8mΩ	8L0	8L00
9mΩ	9L0	9L00
10mΩ	10L	10L0

For Current Detection High Power Metal Plate Shunt Resistors <Ultra Low ohmic> (PMRL series)

- Avoiding heat concentration with trimmingless structure and high heat dissipation thermal structure. And realizes high power consumption with reducing the surface temperature rise.
- Achieved an excellent temperature characteristics by using a special alloy for the resistive element.
- For current detection: Supported from 0.5mΩ.



PMRL series									
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Value (mΩ)	Operating Temperature (°C)	Automotive Grade AEC-Q200
☆PMR10L	2012 (0805)	2	—	130	F (±1%) J (±5%)	±100	0.5, 1, 2	–65 to +175	YES
		1	—	105	F (±1%) J (±5%)	±100	3, 4, 5, 6, 7, 8, 9, 10	–65 to +155	
☆PMR18L	3216 (1206)	3	—	130	F (±1%) J (±5%)	±75	0.5, 1, 2	–65 to +175	YES
		1.5	—	110	F (±1%) J (±5%)	±50	3, 4, 5, 6, 7, 8, 9, 10		

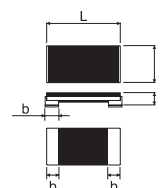
☆: Under Development

Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	b
PMR10L	2012 (0805)	2.0±0.15	1.2±0.15	0.42 to 0.28* ±0.15	0.75 to 0.36* ±0.25
PMR18L	3216 (1206)	3.2±0.15	1.6±0.15	0.44 to 0.28* ±0.15	1.20 to 0.5* ±0.25

*Each value range varies with the resistance. Please contact a ROHM sales representative for further details.

PMR10L/18L (No marking)



Product No. Explanation

P	M	R	1	0	L	E	Z	P	J	V				
---	---	---	---	---	---	---	---	---	---	---	--	--	--	--

Part No.

Tolerance

F	±1%
J	±5%

Special Part Code

V	0.5mΩ to 4mΩ
U	5mΩ to 10mΩ

Nominal Resistance

Resistance code, 3 or 4 digits.	
Tolerance	Resistance code
F	: 4 digits
J	: 3 digits

Packaging Specifications Code

Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)			
PMR10L	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
PMR18L	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"

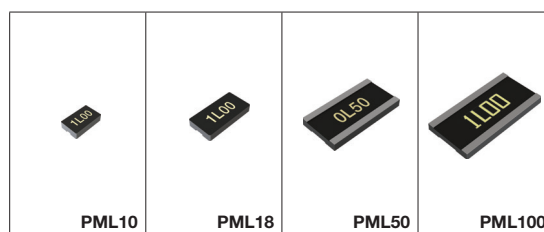
○: Standard product

Resistance Value (Ω)	Tolerance	
	J	F
0.5mΩ	0L5	0L50
1mΩ	1L0	1L00
2mΩ	2L0	2L00
3mΩ	3L0	3L00
4mΩ	4L0	4L00
5mΩ	5L0	5L00
6mΩ	6L0	6L00
7mΩ	7L0	7L00
8mΩ	8L0	8L00
9mΩ	9L0	9L00
10mΩ	10L	10L0

For Current Detection

Metal Plate Shunt Resistors <Ultra Low ohmic> <Wide Terminal type> (PML series)

- Wide terminal configuration for high joint reliability.
- Avoiding heat concentration by trimming-less structure and it reduce temperature rise.
- Ultra-low resistance range (0.5mΩ or more).



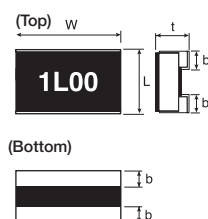
PML series								
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Value (mΩ)	Operating Temperature (°C)	Automotive Grade AEC-Q200
PML10	1220 (0508)	0.66 (2/3)	70	G (±2%) J (±5%)	±200	1.0, 1.5, 2.0, 2.5	-55 to +155	YES
PML18	1632 (0612)	1	70	G (±2%) J (±5%)	±150	0.5, 1.0, 1.5, 2.0, 2.5		YES
PML50	2550 (1020)	2	70	J (±5%)	±150 ±100	0.5 2.2		YES
PML100	3264 (1225)	2 2 3	70 70 25	J (±5%)	±150 ±100	0.5 1.0, 1.5, 2.0, 2.2		YES

■ Dimensions (Unit: mm)

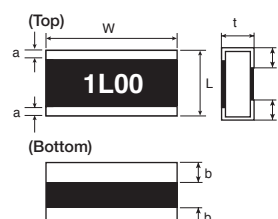
Part No.	Size Code mm (inch)	L	W	t	a	b
PML10	1220 (0508)	1.2±0.15	2.0±0.15	0.42 to 0.28* ±0.15	—	0.45 to 0.35* ±0.25
PML18	1632 (0612)	1.6±0.15	3.2±0.15	0.42 to 0.28* ±0.15	—	0.55 to 0.35* ±0.25
PML50	2550 (1020)	2.6±0.20	5.0±0.2	0.5 to 0.36* ±0.15	0.4±0.2	0.75 to 0.7* ±0.2
PML100	3264 (1225)	3.2±0.25	6.4±0.25	0.5 to 0.36* ±0.15	0.45±0.25	0.9 to 0.7* ±0.25

*Each value range varies with the resistance. Please contact a ROHM sales representative for further details.

● PML10/18



● PML50/100



■ Product No. Explanation

P	M	L	5	0	H	Z	P	J	V																									
Part No.					Tolerance		Special Part Code		Nominal Resistance																									
					G	±2%			Resistance code, 3 or 4 digits.																									
					J	±5%			<table><tr><th>Tolerance</th><th>Resistance code</th></tr><tr><td>G</td><td>: 4 digits</td></tr><tr><td>J</td><td>: 3 digits</td></tr></table>					Tolerance	Resistance code	G	: 4 digits	J	: 3 digits															
Tolerance	Resistance code																																	
G	: 4 digits																																	
J	: 3 digits																																	
									<table><tr><th>Resistance Value (Ω)</th><th colspan="2">Tolerance</th></tr><tr><td>0.5mΩ</td><td>0L5</td><td>0L50</td></tr><tr><td>1mΩ</td><td>1L0</td><td>1L00</td></tr><tr><td>1.5mΩ</td><td>1L5</td><td>1L50</td></tr><tr><td>2mΩ</td><td>2L0</td><td>2L00</td></tr><tr><td>2.2mΩ</td><td>2L2</td><td>—</td></tr><tr><td>2.5mΩ</td><td>2L5</td><td>2L50</td></tr></table>					Resistance Value (Ω)	Tolerance		0.5mΩ	0L5	0L50	1mΩ	1L0	1L00	1.5mΩ	1L5	1L50	2mΩ	2L0	2L00	2.2mΩ	2L2	—	2.5mΩ	2L5	2L50
Resistance Value (Ω)	Tolerance																																	
0.5mΩ	0L5	0L50																																
1mΩ	1L0	1L00																																
1.5mΩ	1L5	1L50																																
2mΩ	2L0	2L00																																
2.2mΩ	2L2	—																																
2.5mΩ	2L5	2L50																																

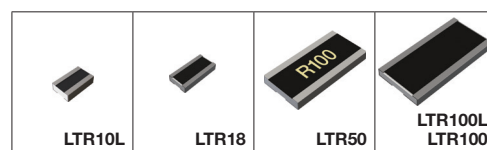
Packaging Specifications Code

Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	G (±2%)			
PML10	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
PML18	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
PML50	HZP	○	—	Embossed tape (4mm Pitch)	φ180mm (7inch)	2,000
PML100	HZP	○	—	Embossed tape (4mm Pitch)	φ180mm (7inch)	2,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
○: Standard product

For Current Detection High Power Thick Film Shunt Resistors <Wide Terminal type> (LTR/LTRL series)

- High joint reliability with long side terminations.
- Improvement of rated power enables to displace smaller size of resistors, and it contributes space savings in your set.
- Chip resistors for current detection. (10mΩ or more)

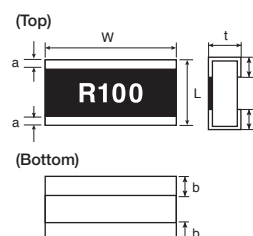


LTR/LTRL series									
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
LTR10L	1220 (0508)	1	70	125	D (±0.5%)	0 to 150 0 to 100	100mΩ to 180mΩ (E24 series) 200mΩ to 910mΩ (E24 series)	-55 to +155	YES
					F (±1%) J (±5%)	0 to 150 0 to 100	33mΩ to 180mΩ (E24 series) 200mΩ to 910mΩ (E24 series)		
LTR18	1632 (0612)	1.5	70	95	F (±1%) J (±5%)	0 to 300 0 to 200 0 to 150 ±100	10mΩ to 18mΩ (E24 series) 20mΩ to 47mΩ (E24 series) 51mΩ to 470mΩ (E24 series) 510mΩ to 1Ω (E24 series)		YES
LTR50	2550 (1020)	New 3	70	110	F (±1%) J (±5%)	0 to 300 0 to 200 0 to 150 ±100	10mΩ to 18mΩ (E24 series) 20mΩ to 47mΩ (E24 series) 51mΩ to 91mΩ (E24 series) 100mΩ to 910mΩ (E24 series)		YES
LTR100L	3264 (1225)	4	70	110	F (±1%) J (±5%)	0 to 300 0 to 200 0 to 150	10mΩ to 18mΩ (E24 series) 20mΩ to 47mΩ (E24 series) 51mΩ to 91mΩ (E24 series)	-65 to +155	YES
LTR100		New 3	70	115	F (±1%) J (±5%)	0 to 150 0 to 100 ±200	100mΩ to 180mΩ (E24 series) 200mΩ to 910mΩ (E24 series) 100mΩ to 910mΩ (E24 series)	-55 to +155	YES

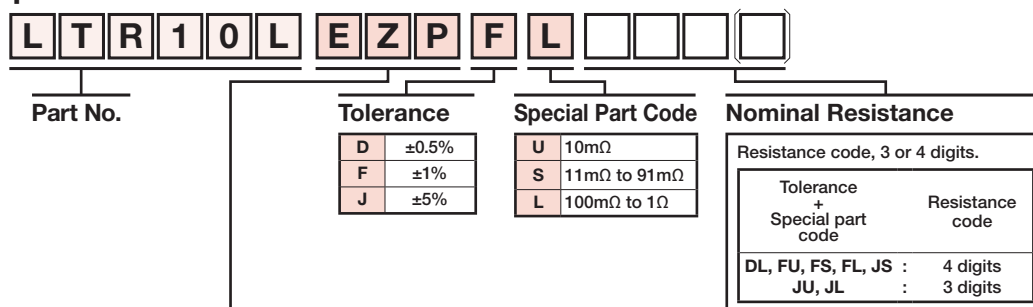
■ Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b
LTR10L	1220 (0508)	1.25±0.15	2.0±0.15	0.55±0.1	0.28±0.15	0.35±0.2
LTR18	1632 (0612)	1.6±0.1	3.2±0.1	0.58±0.1	0.5±0.2	0.5±0.2
LTR50	2550 (1020)	2.5±0.15	5.0±0.15	0.58±0.15	0.38±0.2	0.9±0.2
LTR100L	3264 (1225)	3.1±0.15	6.4±0.15	0.58±0.15	0.5±0.25	1.0±0.25
LTR100		3.2±0.15	6.4±0.15	0.55±0.15	0.4±0.25	1.13±0.25

- LTR10L/LTR18/LTR100L/LTR100 (No marking)
- LTR50 (Marking)



■ Product No. Explanation



Packaging Specifications Code

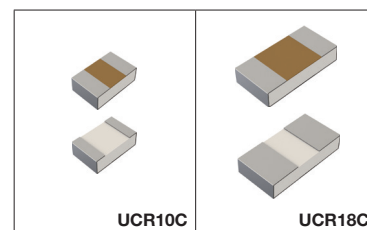
Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)			
LTR10L*	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
LTR18	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
LTR50	UJP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	5,000
LTR100L	JJP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000
LTR100	JJP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000

○: Standard product
*LTR10L D class (±0.5%) is available for 100mΩ to 910mΩ only

For Current Detection

High Power Thick film Shunt Resistors <Face down type> (UCRC series)

- Rated power of 1W realized by 0805 size thick film chip resistor.
- Realized low TCR (100ppm/°C or less) with thick film chip resistor.
- Supported from 10mΩ.



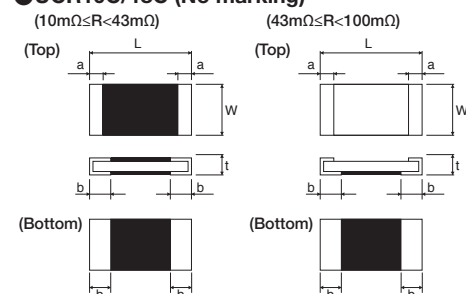
UCRC series									
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
☆UCR10C	2012 (0805)	1	70	125	F (±1%) J (±5%)	±75	10mΩ to 12mΩ (E24 series)	-55 to +155	YES
		1.25				±60	13mΩ to 100mΩ (E24 series)		
☆UCR18C	3216 (1206)	1.75	70	125	F (±1%) J (±5%)	±75	10mΩ to 100mΩ (E24 series)		YES

☆: Under Development

Dimensions (Unit: mm)

Part No.	Resistance Range (mΩ)	Size Code mm (inch)	L	W	t	a	b
UCR10C	10 to 39	2012 (0805)	2.05±0.20	1.30±0.2	0.65±0.10	0.60±0.20	0.60±0.20
	43 to 100					0.40±0.20	0.75±0.20
UCR18C	10 to 39	3216 (1206)	3.2±0.15	1.6±0.2	0.65±0.10	0.8±0.20	1.1±0.20
	43 to 100					1.1±0.20	1.2±0.20

●UCR10C/18C (No marking)



Product No. Explanation



Part No.

Tolerance

Special Part Code

Nominal Resistance

F	±1%
J	±5%

U	10mΩ
S	11mΩ to 91mΩ
L	100mΩ

Resistance code, 3 or 4 digits.

Tolerance + Special part code	Resistance code
FU, FS, FL, JS :	4 digits
JL, JU :	3 digits

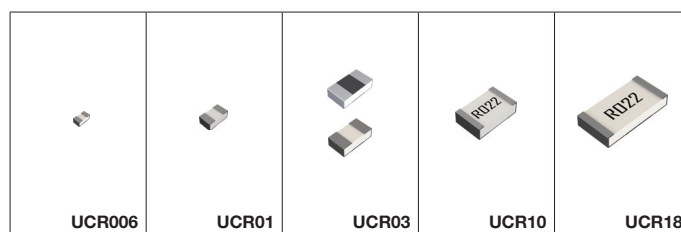
Packaging Specifications Code

Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)	Remarks
		J (±5%)	F (±1%)				
UCR10C	EWP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000	10mΩ to 39mΩ
	EVP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000	43mΩ to 100mΩ
UCR18C	EWP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000	10mΩ to 39mΩ
	EVP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000	43mΩ to 100mΩ

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
 ©: Standard product

For Current Detection Thick Film Shunt Resistors <Face down type> (UCR series)

- Resistive element is located at bottom side, which reduces the resistance shift during mounting process.
- ROHM's unique structure achieved improvement of heat.
- Chip resistors for current detection. (11mΩ or more)



UCR series							
Part No.	Size Code mm (inch)	Rated Power (W) (70°C)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
UCR006	0603 (0201)	0.1	F (±1%) J (±5%)	0 to 300	100mΩ to 910mΩ (E24 series)	-55 to +155	YES
UCR01	1005 (0402)	0.125	F (±1%) J (±5%)	0 to 300 0 to 250 0 to 200	68mΩ to 91mΩ (E24 series) 100mΩ to 200mΩ (E24 series) 220mΩ to 910mΩ (E24 series)		YES
UCR03	1608 (0603)	0.25	F (±1%) J (±5%)	0 to 250 0 to 200 0 to 150	20mΩ to 47mΩ (E24 series) 50mΩ to 91mΩ (E24 series) 100mΩ to 200mΩ (E24 series)		YES*
		0.2	F (±1%) J (±5%)	0 to 150	220mΩ to 910mΩ (E24 series)		
UCR10	2012 (0805)	0.33 (1/3)	F (±1%) J (±5%)	250±200 0 to 250 0 to 150	11mΩ to 18mΩ (E24 series) 20mΩ to 47mΩ (E24 series) 51mΩ to 100mΩ (E24 series)		YES
UCR18	3216 (1206)	1	F (±1%) J (±5%)	0 to 350 0 to 200	11mΩ to 18mΩ (E24 series) 20mΩ to 39mΩ (E24 series)		YES
		0.5	F (±1%) J (±5%)	0 to 150	43mΩ to 100mΩ (E24 series)		

*Limited to 100mΩ and higher

Dimensions (Unit: mm)

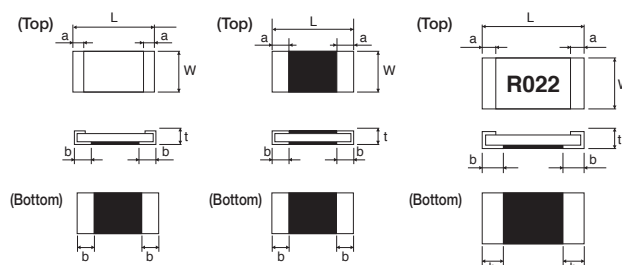
Part No.	Size Code mm (inch)	L	W	t	a	b
UCR006	0603 (0201)	0.62±0.05	0.32±0.05	0.24±0.05	0.18±0.1	0.22±0.1
UCR01	1005 (0402)	1.0±0.1	0.55±0.1	0.37±0.05	0.28±0.1	0.34±0.1
UCR03	1608 (0603)	1.6±0.1	0.87±0.1	0.5±0.1	0.45±0.2	0.45±0.2
UCR10	2012 (0805)	2.0±0.1	1.25±0.1	0.55±0.1	0.24±0.2	0.5±0.2
UCR18	3216 (1206)	3.2±0.15	1.6±0.15	0.55±0.1	0.3±0.2	0.9±0.25

●UCR006/01
(No marking)

●UCR03
(No marking)
(50mΩ≤R≤910mΩ)

●UCR03
(No marking)
(20mΩ≤R<50mΩ)

●UCR10/18



Product No. Explanation

U	C	R	1	0	E	V	H	F	S				
Part No.					Tolerance		Special Part Code			Nominal Resistance			
					F	±1%	S	11mΩ to 91mΩ		Resistance code, 3 or 4 digits. Tolerance +Special P/N Resistance code FS, FL, JS : 4 digits JL : 3 digits			
					J	±5%	L	100mΩ to 910mΩ					

Packaging Specifications Code

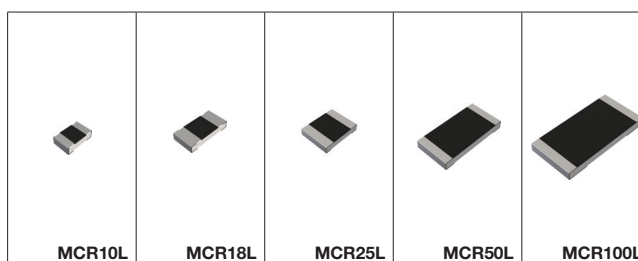
Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)	Remarks
		J (±5%)	F (±1%)				
UCR006	YVP	○	○	Paper tape (2mm Pitch)	φ180mm (7inch)	15,000	—
UCR01	MVP	○	○	Paper tape (2mm Pitch)	φ180mm (7inch)	10,000	—
UCR03	EWP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000	20mΩ to 47mΩ
	EVP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000	51mΩ to 910mΩ
UCR10	EVH	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000	—
UCR18	EVH	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000	—

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
○: Standard product

For Current Detection

General Purpose Chip Resistors: <Low ohmic> <High Power> (MCRL series)

- Guaranteed the same rated power as one size larger product by changing the design of the resistive element.
- Low ohmic resistance from 47mΩ is in lineup by thick-film resistive element.
- High-reliability chip resistor employing metal glaze as resistive element.



MCRL series									
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
MCR10L	2012 (0805)	0.5	70	—	F (±1%) J (±5%)	0 to 250 0 to 150	47mΩ to 110mΩ (E24 series) 120mΩ to 910mΩ (E24 series)	-55 to +155	YES
MCR18L	3216 (1206)	0.75	70	—	F (±1%) J (±5%)	0 to 250 0 to 150	47mΩ to 91mΩ (E24 series) 100mΩ to 910mΩ (E24 series)		YES
☆MCR25L	3225 (1210)	1.25	70	125	D (±0.5%) F (±1%) J (±5%)	0 to 150 0 to 125 0 to 100 0 to 75	47mΩ to 91mΩ (E24 series) 100mΩ to 200mΩ (E24 series) 220mΩ to 470mΩ (E24 series) 510mΩ to 910mΩ (E24 series)		YES
☆MCR50L	5025 (2010)	2	70	125	D (±0.5%) F (±1%) J (±5%)	0 to 250 0 to 200 0 to 150	47mΩ to 130mΩ (E24 series) 150mΩ to 270mΩ (E24 series) 300mΩ to 910mΩ (E24 series)		YES
☆MCR100L	6432 (2512)	3	70	125	F (±1%) J (±5%)	0 to 300 0 to 150	47mΩ to 91mΩ (E24 series) 100mΩ to 910mΩ (E24 series)		YES

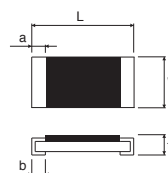
☆: Under Development

■ Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b
MCR10L	2012 (0805)	2.0±0.1	1.25±0.1	0.55±0.1	0.60±0.20*1 0.45±0.20*2	0.40±0.20
MCR18L	3216 (1206)	3.2+0.15 -0.20	1.6±0.15	0.55±0.1	0.90±0.25*1 0.75±0.25*2	0.50±0.25
MCR25L	3225 (1210)	3.2+0.15 -0.20	2.5±0.15	0.6±0.10	0.7±0.15	0.55±0.15
MCR50L	5025 (2010)	5.0±0.15	2.5±0.15	0.6±0.10	0.55±0.15	0.7±0.15
MCR100L	6432 (2512)	6.4±0.15	3.2±0.15	0.6±0.15	0.6±0.25	1.45±0.25

*1 Resistance range: 47mΩ to 110mΩ
*2 Resistance range: 120mΩ to 910mΩ

● MCR10L/18L/25L/50L/100L (No marking)



■ Product No. Explanation

M	C	R	1	0	L	E	Q	P	J	L				
Part No.						Tolerance		Special Part Code		Nominal Resistance				
						D	±0.5%	S	47mΩ to 91mΩ	Resistance code, 3 or 4 digits. Tolerance +Special P/N Resistance code DS, DL, FS, FL, JS : 4 digits JL : 3 digits				
						F	±1%	L	100mΩ to 910mΩ					
						J	±5%							

Packaging Specifications Code

Part No.	Code	Tolerance			Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J(±5%)	F(±1%)	D(±0.5%)			
MCR10L	EQP	○	○	—	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
MCR18L	EQP	○	○	—	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
MCR25L	JQP	○	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000
MCR50L	JQP	○	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000
MCR100L	JQP	○	○	—	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
○: Standard product

High Reliability

High Anti-surge Chip Resistors (SDR series)

Anti-surge Chip Resistors (ESR series)

- Exclusive resistive element pattern and laser trimming technology results in significantly improved surge resistance characteristics.
- Circuit space can be saved by superior power ratings.

						
SDR03	SDR10	ESR01	ESR03	ESR10	ESR18	ESR25

SDR series										
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
SDR03	1608 (0603)	New 0.4	70	130	150	D (±0.5%)	±100	10Ω to 1MΩ (E24, E96 series)	-55 to +155	YES
						F (±1%)	±200	1Ω to 9.76Ω (E24, E96 series)		
							±100	10Ω to 10MΩ (E24, E96 series)		
						J (±5%)	±200	1Ω to 10MΩ (E24 series)		
SDR10	2012 (0805)	New 0.66 (2/3)	70	125	400	D (±0.5%)	±100	10Ω to 1MΩ (E24, E96 series)	-55 to +155	YES
						F (±1%)	±100	1Ω to 10MΩ (E24, E96 series)		
						J (±5%)	±200	1Ω to 10MΩ (E24 series)		
ESR series										
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
ESR01	1005 (0402)	0.2	70	—	50	F (±1%)	±100	10Ω to 976kΩ (E24, E96 series)	-55 to +155	YES
								1MΩ to 2.2MΩ (E24 series)		
						J (±5%)	+500/-200	1Ω to 9.1Ω (E24 series)		
							±200	10Ω to 10MΩ (E24 series)		
ESR03	1608 (0603)	New 0.33 (1/3)	70	130	150	D (±0.5%)	±100	10Ω to 976Ω (E24, E96 series)	-55 to +155	YES
						F (±1%)	±200	1Ω to 9.76Ω (E24, E96 series)		
							±100	10Ω to 976Ω (E24, E96 series)		
		J (±5%)	±200	10Ω to 910Ω (E24 series)						
			D (±0.5%)	±100		1kΩ to 1MΩ (E24, E96 series)				
				F (±1%)		±100	1kΩ to 10MΩ (E24, E96 series)			
J (±5%)	±200	1kΩ to 10MΩ (E24 series)								
ESR10	2012 (0805)	New 0.5	70	115	150	D (±0.5%)	±100	10Ω to 976Ω (E24, E96 series)	-55 to +155	YES
						F (±1%)	±100	1Ω to 976Ω (E24, E96 series)		
						J (±5%)	±200	1Ω to 910Ω (E24 series)		
		D (±0.5%)	±100	1kΩ to 1MΩ (E24, E96 series)						
			F (±1%)	±100		1kΩ to 10MΩ (E24, E96 series)				
			J (±5%)	±200		1kΩ to 10MΩ (E24 series)				
ESR18	3216 (1206)	New 0.75	70	105	200	D (±0.5%)	±100	10Ω to 976Ω (E24, E96 series)	-55 to +155	YES
						F (±1%)	±100	1Ω to 976Ω (E24, E96 series)		
						J (±5%)	±200	1Ω to 910Ω (E24 series)		
		D (±0.5%)	±100	1kΩ to 1MΩ (E24, E96 series)						
			F (±1%)	±100		1kΩ to 10MΩ (E24, E96 series)				
			J (±5%)	±200		1kΩ to 10MΩ (E24 series)				
ESR25	3225 (1210)	New 1	70	95	200	D (±0.5%)	±100	10Ω to 1MΩ (E24, E96 series)	-55 to +155	YES
						F (±1%)	±100	1Ω to 10MΩ (E24, E96 series)		
						J (±5%)	±200	1Ω to 10MΩ (E24 series)		

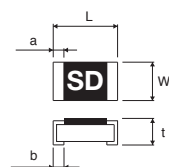
*E24: Standard products E96: Custom products

High Reliability High Anti-surge Chip Resistors (SDR series) Anti-surge Chip Resistors (ESR series)

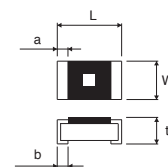
■ Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b
SDR03	1608 (0603)	1.6±0.1	0.8±0.1	0.45±0.1	0.25±0.1	0.25±0.1
SDR10	2012 (0805)	2.0±0.1	1.25±0.1	0.55±0.1	0.25±0.1	0.4±0.2
ESR01	1005 (0402)	1.0±0.05	0.5±0.05	0.35±0.05	0.2±0.1	0.25 ^{+0.05} _{-0.1}
ESR03	1608 (0603)	1.6±0.1	0.8±0.1	0.45±0.1	0.3±0.2	0.3±0.2
ESR10	2012 (0805)	2.0±0.1	1.25±0.1	0.55±0.1	0.3±0.2	0.4±0.2
ESR18	3216 (1206)	3.2±0.15	1.6±0.15	0.55±0.1	0.3±0.25	0.5±0.25
ESR25	3225 (1210)	3.2±0.15	2.5±0.15	0.55±0.1	0.3±0.25	0.5±0.25

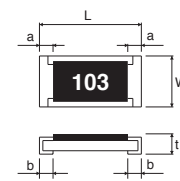
●SDR03/10
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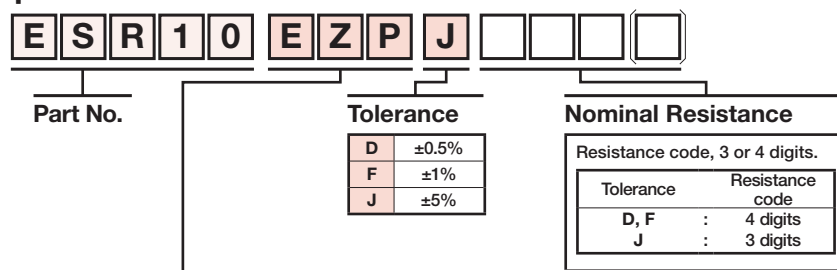
●ESR01/03
(Marked as "■")



●ESR10/18/25



■ Product No. Explanation



Packaging Specifications Code

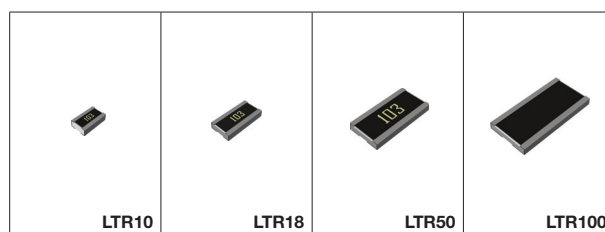
Part No.	Code	Tolerance			Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)	D (±0.5%)			
SDR03	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
SDR10	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
ESR01	MZP	○	○	—	Paper tape (2mm Pitch)	φ180mm (7inch)	10,000
ESR03	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
ESR10	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
ESR18	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
ESR25	JZP	○	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
○: Standard product

High Reliability

High Power Chip Resistors <Wide Terminal type> <Anti-surge> (LTR series)

- High joint reliability with long side terminations.
- Highest power ratings in their class.
- Guaranteed anti-surge characteristic in all series.



LTR series										
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
LTR10	1220 (0508)	1	70	125	150	D (±0.5%)	±100	10Ω to 976Ω (E24, E96 series)	-55 to +155	YES
						F (±1%)	±100	1Ω to 976Ω (E24, E96 series)		
						J (±5%)	±200	1Ω to 910Ω (E24 series)		
		0.25	70	95		D (±0.5%)	±100	1kΩ to 1MΩ (E24, E96 series)		
						F (±1%)	±100	1kΩ to 1MΩ (E24, E96 series)		
						J (±5%)	±200	1kΩ to 1MΩ (E24 series)		
LTR18	1632 (0612)	1.5	70	95	200	D (±0.5%)	±100	10Ω to 976Ω (E24, E96 series)		YES
						F (±1%)	±100	1Ω to 976Ω (E24, E96 series)		
						J (±5%)	±200	1Ω to 910Ω (E24 series)		
		0.75	70	125		D (±0.5%)	±100	1kΩ to 1MΩ (E24, E96 series)		
						F (±1%)	±100	1kΩ to 1MΩ (E24, E96 series)		
						J (±5%)	±200	1kΩ to 1MΩ (E24 series)		
LTR50	2550 (1020)	1	70	—	200	D (±0.5%)	±100	10Ω to 1MΩ (E24, E96 series)	YES	
						F (±1%)	±100	1Ω to 1MΩ (E24, E96 series)		
						J (±5%)	±200	1Ω to 1MΩ (E24 series)		
		☆2	70	95		D (±0.5%)	±100	10Ω to 1MΩ (E24, E96 series)		
						F (±1%)	±100	1Ω to 1MΩ (E24, E96 series)		
						J (±5%)	±200	1Ω to 1MΩ (E24 series)		
LTR100	3264 (1225)	 3	70	115	200	D (±0.5%)	±100	10Ω to 1MΩ (E24, E96 series)	YES	
						F (±1%)	±100	1Ω to 1MΩ (E24, E96 series)		
						J (±5%)	±200	1Ω to 1MΩ (E24 series)		

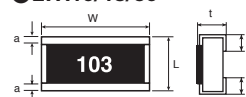
*E24: Standard products E96: Custom products

☆: Under Development

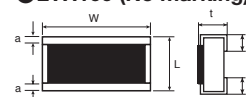
Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b
LTR10	1220 (0508)	1.2±0.1	2.0±0.1	0.55±0.1	0.25±0.1	0.35±0.2
LTR18	1632 (0612)	1.6±0.15	3.2±0.15	0.55±0.1	0.3±0.2	0.5±0.2
LTR50	2550 (1020)	2.5±0.15	5.0±0.15	0.55±0.1	0.38±0.2	0.9±0.2
LTR100	3264 (1225)	3.2±0.15	6.4±0.15	0.55±0.15	0.4±0.25	1.13±0.25

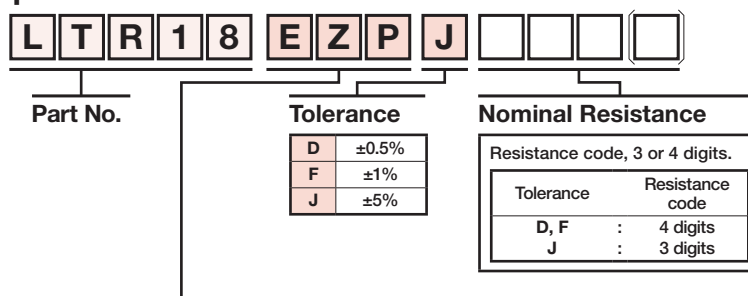
●LTR10/18/50



●LTR100 (No marking)



Product No. Explanation



Packaging Specifications Code

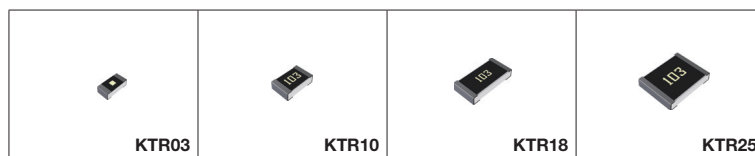
Part No.	Code	Tolerance			Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)	D (±0.5%)			
LTR10	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
LTR18	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
LTR50	UZP	○	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	5,000
LTR100	JZP	○	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"

○: Standard product

High Reliability High Voltage Resistance Chip Resistors (KTR series)

- Twice the rated voltage of general purpose products.
- Ideal for high voltage divider circuits.



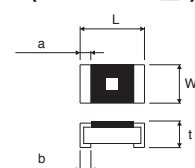
KTR series								
Part No.	Size Code mm (inch)	Rated Power (W) (70°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
KTR03	1608 (0603)	0.1	350	F (±1%)	±200	1Ω to 9.76Ω (E24, E96 series)	-55 to +155	YES
				J (±5%)	±100	10Ω to 10MΩ (E24, E96 series)		
KTR10	2012 (0805)	0.125	400	F (±1%)	±100	1Ω to 10MΩ (E24, E96 series)		YES
				J (±5%)	±200	1Ω to 30MΩ (E24 series)		
KTR18	3216 (1206)	0.25	500	F (±1%)	±100	1Ω to 10MΩ (E24, E96 series)		YES
				J (±5%)	±200	1Ω to 10MΩ (E24 series)		
KTR25	3225 (1210)	0.33 (1/3)	600	F (±1%)	±100	1Ω to 10MΩ (E24, E96 series)		YES
				J (±5%)	±200	1Ω to 10MΩ (E24 series)		

*E24: Standard products E96: Custom products

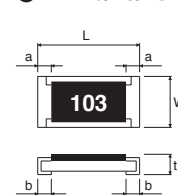
Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b
KTR03	1608 (0603)	1.6±0.1	0.8±0.1	0.45±0.1	0.3±0.2	0.3±0.2
KTR10	2012 (0805)	2.0±0.1	1.25±0.1	0.55±0.1	0.3±0.2	0.4±0.2
KTR18	3216 (1206)	3.2±0.15	1.6±0.15	0.55±0.1	0.3±0.25	0.5±0.25
KTR25	3225 (1210)	3.2±0.15	2.5±0.15	0.55±0.1	0.3±0.25	0.5±0.25

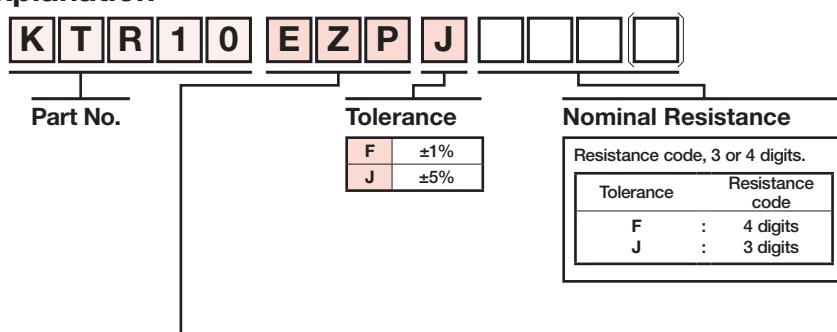
●KTR03 (Marked as "■")



●KTR10/18/25



Product No. Explanation



Packaging Specifications Code

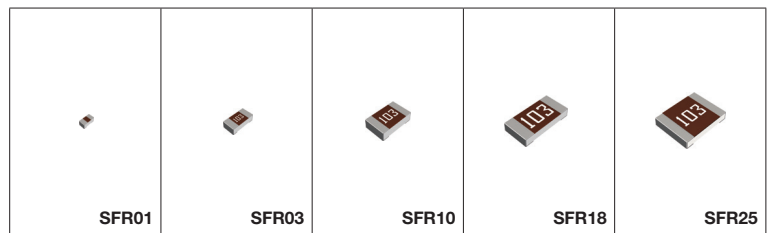
Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)			
KTR03	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
KTR10	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
KTR18	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
KTR25	JZP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
○: Standard product

High Reliability

Tolerance for Sulfurization Chip Resistor (SFR series)

- Improved Anti-sulfur reliability by ROHM original structure.



SFR series								
Part No.	Size Code mm (inch)	Rated Power (W) (70°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
SFR01	1005 (0402)	0.063 (1/16)	50	F (±1%)	±100	10Ω to 2.2MΩ (E24, E96 series)	-55 to +155	YES
				J (±5%)	+500/-250 ±200	1Ω to 9.1Ω (E24 series) 10Ω to 10MΩ (E24 series)		
SFR03	1608 (0603)	0.1	50	F (±1%)	±100	10Ω to 10MΩ (E24, E96 series)		YES
				J (±5%)	±400 ±200	1Ω to 9.1Ω (E24 series) 10Ω to 10MΩ (E24 series)		
SFR10	2012 (0805)	0.125	150	F (±1%)	±100	10Ω to 2.2MΩ (E24, E96 series)		YES
				J (±5%)	±400 ±200	1Ω to 9.1Ω (E24 series) 10Ω to 10MΩ (E24 series)		
SFR18	3216 (1206)	0.25	200	F (±1%)	±100	10Ω to 2.2MΩ (E24, E96 series)		YES
				J (±5%)	±400 ±200	1Ω to 9.1Ω (E24 series) 10Ω to 10MΩ (E24 series)		
SFR25	3225 (1210)	0.5	200	F (±1%)	±100	10Ω to 1MΩ (E24, E96 series)		YES
				J (±5%)	±200	1Ω to 1MΩ (E24 series)		

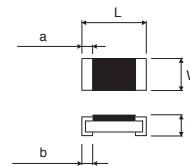
*E24: Standard products E96: Custom products

Jumper type					
Part No.	Size Code mm (inch)	Rated Current (A)	Resistance	Operating Temperature (°C)	Automotive Grade AEC-Q200
SFR01	1005 (0402)	1	50mΩ Max	-55 to +155	YES
SFR03	1608 (0603)	1			YES
SFR10	2012 (0805)	2			YES
SFR18	3216 (1206)	2			YES
SFR25	3225 (1210)	2			YES

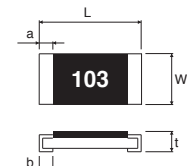
Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b
SFR01	1005 (0402)	1.0±0.05	0.5±0.05	0.35±0.05	0.33±0.08	0.25 ^{+0.05} _{-0.10}
SFR03	1608 (0603)	1.6±0.1	0.8±0.1	0.45±0.1	0.4±0.2	0.3±0.2
SFR10	2012 (0805)	2.0±0.1	1.25±0.1	0.55±0.1	0.4±0.2	0.4±0.2
SFR18	3216 (1206)	3.2 ^{+0.15} _{-0.20}	1.6±0.15	0.55±0.1	0.55±0.25	0.5±0.25
SFR25	3225 (1210)	3.2 ^{+0.15} _{-0.20}	2.5±0.15	0.55±0.1	0.55±0.25	0.5±0.25

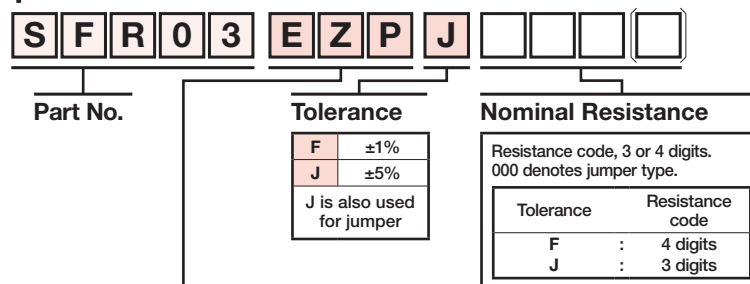
●SFR01 (No marking)



●SFR03/10/18/25



Product No. Explanation



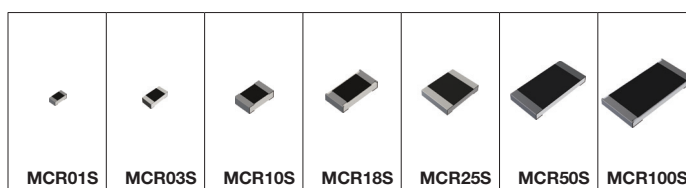
Packaging Specifications Code

Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)			
SFR01	MZP	○	○	Paper tape (2mm Pitch)	φ180mm (7inch)	10,000
SFR03	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
SFR10	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
SFR18	EZP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
SFR25	JZP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
 ○: Standard product

General Purpose Chip Resistors <High Power> (MCRS series)

- In MCRS series, the same rated power is guaranteed as that of one-size larger products than conventional MCR series by changing the design of the resistive element.
- Circuit space can be saved (reducing the area by about 60% by replacing 0603 size to 0402 size)



MCRS series											
Part No.	Size Code mm (inch)	Rated Power (W)	Rated Ambient Temperature (°C)	Rated Terminal Temperature (°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200	
MCR01S	1005 (0402)	0.1	70	—	75	F (±1%)	±100	10Ω to 10MΩ (E24, E96 series)	-55 to +155	YES	
						J (±5%)	±400	1Ω to 9.1Ω (E24 series)			
							±200	10Ω to 10MΩ (E24 series)			
MCR03S	1608 (0603)	0.125	70	—	150	F (±1%)	±100	10Ω to 10MΩ (E24, E96 series)		YES	
						J (±5%)	±400	1Ω to 9.1Ω (E24 series)			
							±200	10Ω to 10MΩ (E24 series)			
MCR10S	2012 (0805)	0.25	70	—	200	F (±1%)	±250	1Ω to 9.1Ω (E24 series)		YES	
							±100	10Ω to 2.2MΩ (E24, E96 series)			
						J (±5%)	±400	1Ω to 9.1Ω (E24 series)			
MCR18S	3216 (1206)	0.4	70	—	200		±200	10Ω to 10MΩ (E24 series)		YES	
						F (±1%)	±250	1Ω to 9.1Ω (E24 series)			
						J (±5%)	±400	1Ω to 9.1Ω (E24 series)			
☆MCR25S	3225 (1210)	0.5	70	—	200		±200	1Ω to 9.76Ω (E24, E96 series)		YES	
						F (±1%)	±100	10Ω to 1MΩ (E24, E96 series)			
						J (±5%)	±200	1Ω to 1MΩ (E24 series)			
New MCR50S	5025 (2010)	1.5	70	105	250	F (±1%)	±200	1Ω to 9.1Ω (E24 series)	-55 to +155	YES	
							+100/-150*1	10Ω to 26.7Ω (E24, E96 series)			
							±100*2	27Ω to 2.2MΩ (E24, E96 series)			
						J (±5%)	±400	1Ω to 9.1Ω (E24 series)			
							±200	10Ω to 4.7MΩ (E24 series)			
New MCR100S	6432 (2512)	2	70	105	250	F (±1%)	±200	1Ω to 9.1Ω (E24 series)		YES	
							+100/-150*1	10Ω to 26.7Ω (E24, E96 series)			
							±100*2	27Ω to 2.2MΩ (E24, E96 series)			
						J (±5%)	±400	1Ω to 9.1Ω (E24 series)			
							±200	10Ω to 4.7MΩ (E24 series)			

*1 (+25°C to -55°C)
*2 (+25°C to +125°C)

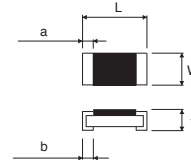
☆: Under Development

Jumper type					
Part No.	Size Code mm (inch)	Rated Current (A)	Resistance	Operating Temperature (°C)	Automotive Grade AEC-Q200
MCR01S	1005 (0402)	1.5	50mΩ Max	-55 to +155	YES
MCR03S	1608 (0603)	2			YES
MCR10S	2012 (0805)	2.5			YES
MCR18S	3216 (1206)	2.5			YES
MCR25S	3225 (1210)	4			YES
MCR50S	5025 (2010)	4			YES
MCR100S	6432 (2512)	4			YES

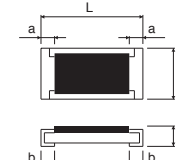
■ Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b
MCR01S	1005 (0402)	1.0±0.05	0.50±0.05	0.35±0.05	0.2±0.1	0.25 ^{+0.05} _{-0.1}
MCR03S	1608 (0603)	1.6±0.1	0.80±0.1	0.45±0.1	0.3±0.2	0.3±0.2
MCR10S	2012 (0805)	2.0±0.1	1.25±0.1	0.55±0.1	0.4±0.2	0.4±0.2
MCR18S	3216 (1206)	3.2 ^{+0.15} _{-0.2}	1.60±0.15	0.55±0.1	0.5±0.25	0.5±0.25
MCR25S	3225 (1210)	3.2 ^{+0.15} _{-0.20}	2.5±0.15	0.55±0.1	0.55±0.25	0.5±0.25
MCR50S	5025 (2010)	5.0±0.15	2.50±0.15	0.55±0.15	0.6±0.25	0.6±0.25
MCR100S	6432 (2512)	6.4±0.15	3.15±0.15	0.55±0.15	0.6±0.25	1.0±0.25

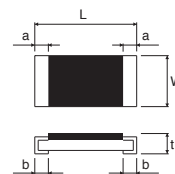
● MCR01S/03S (No marking)



● MCR10S/18S/50S/100S (No marking)



● MCR25S (No marking)



■ Product No. Explanation



Part No.

Tolerance

F	±1%
J	±5%
J is also used for jumper	

Special Part Code

L (1Ω to 9.1Ω)*
* : 10S/18S F Class
50S/100S F/J Class

Nominal Resistance

Resistance code, 3 or 4 digits.
000 denotes jumper type.

Tolerance	Resistance code
F	: 4 digits
J	: 3 digits

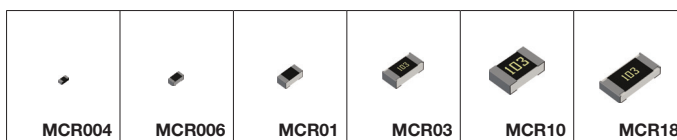
Packaging Specifications Code

Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J(±5%)	F(±1%)			
MCR01S	MQP	○	○	Paper tape (2mm Pitch)	φ180mm (7inch)	10,000
MCR03S	EQP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
MCR10S	EQP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
MCR18S	EQP	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
MCR25S	JQP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000
MCR50S	JQP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000
MCR100S	JQP	○	○	Embossed tape (4mm Pitch)	φ180mm (7inch)	4,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
○: Standard product

General Purpose Chip Resistors (MCR series)

- Six type sizes, ranging from 01005 to 1206.
- Market-proven reliability.



MCR series								
Part No.	Size Code mm (inch)	Rated Power (W) (70°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
MCR004	0402 (01005)	0.031 (1/32)	15	F (±1%)	±300	10Ω to 97.6Ω (E24, E96 series)	-55 to +125	—
					±250	100Ω to 1MΩ (E24, E96 series)		
				J (±5%)	+600/-100	1Ω to 9.1Ω (E24 series)		
					±300	10Ω to 91Ω (E24 series)		
					±250	100Ω to 1MΩ (E24 series)		
MCR006	0603 (0201)	0.05	25	D (±0.5%)	±200	10Ω to 97.6Ω (E24, E96 series)		YES
					±100	1kΩ to 1MΩ (E24, E96 series)		
				F (±1%)	+600/-200	1Ω to 9.1Ω (E24 series)		
					±200	10Ω to 10MΩ (E24, E96 series)		
					+600/-200	1Ω to 9.1Ω (E24 series)		
MCR01	1005 (0402)	0.063 (1/16)	50	J (±5%)	±200	10Ω to 10MΩ (E24 series)	-55 to +155	YES
					±250	10Ω to 10MΩ (E24 series)		
				D (±0.5%)	±100	10Ω to 97.6Ω (E24, E96 series)		
					±50	100Ω to 1MΩ (E24, E96 series)		
					±400	1Ω to 9.1Ω (E24 series)		
MCR03	1608 (0603)	0.1	50	F (±1%)	±100	10Ω to 2.2MΩ (E24, E96 series)		YES
					±100	1Ω to 9.1Ω (E24 series)		
				J (±5%)	+500/-250	1Ω to 9.1Ω (E24 series)		
					±200	10Ω to 10MΩ (E24 series)		
					±200	10Ω to 10MΩ (E24 series)		
MCR10	2012 (0805)	0.1	150	D (±0.5%)	±100	10Ω to 97.6Ω (E24, E96 series)		YES
					±50	100Ω to 1MΩ (E24, E96 series)		
				F (±1%)	±100	10Ω to 2.2MΩ (E24, E96 series)		
					±400	1Ω to 9.1Ω (E24 series)		
					±200	10Ω to 10MΩ (E24 series)		
MCR18	3216 (1206)	0.125	200	J (±5%)	±200	10Ω to 10MΩ (E24 series)		YES
					±200	10Ω to 10MΩ (E24 series)		
				D (±0.5%)	±100	10Ω to 97.6Ω (E24, E96 series)		
					±50	100Ω to 1MΩ (E24, E96 series)		
					±100	10Ω to 2.2MΩ (E24, E96 series)		
		0.25		F (±1%)	±100	10Ω to 2.2MΩ (E24, E96 series)		
					±400	1Ω to 9.1Ω (E24 series)		
				J (±5%)	±400	1Ω to 9.1Ω (E24 series)		
					±200	10Ω to 10MΩ (E24 series)		
					±200	10Ω to 10MΩ (E24 series)		

*E24: Standard products E96: Custom products

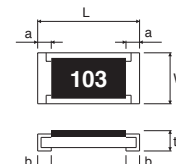
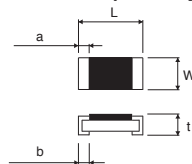
Jumper type					
Part No.	Size Code mm (inch)	Rated Current (A)	Resistance	Operating Temperature (°C)	Automotive Grade AEC-Q200
MCR004	0402 (01005)	0.5	50mΩ Max	-55 to +125	—
MCR006	0603 (0201)	0.5			YES
MCR01	1005 (0402)	1			YES
MCR03	1608 (0603)	1		-55 to +155	YES
MCR10	2012 (0805)	2			YES
MCR18	3216 (1206)	2			YES

Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b
MCR004	0402 (01005)	0.4±0.02	0.2±0.02	0.13±0.02	0.1±0.03	0.1 ±0.03
MCR006	0603 (0201)	0.6±0.03	0.3±0.03	0.23±0.03	0.1±0.05	0.15±0.05
MCR01	1005 (0402)	1.0±0.05	0.5±0.05	0.35±0.05	0.2±0.1	0.25 ^{+0.05} _{-0.10}
MCR03	1608 (0603)	1.6±0.1	0.8±0.1	0.45±0.1	0.3±0.2	0.3 ±0.2
MCR10	2012 (0805)	2.0±0.1	1.25±0.1	0.55±0.1	0.4±0.2	0.4 ±0.2
MCR18	3216 (1206)	3.2±0.15	1.6±0.15	0.55±0.1	0.5±0.25	0.5 ±0.25

- MCR004/006/01 (No marking)
- MCR03 (Partially marked)

- MCR10/18



Product No. Explanation

M	C	R	0	0	6	Y	L	P	F	L				
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Part No.

Tolerance

Special Part Code

Nominal Resistance

D	±0.5%
F	±1%
J	±5%
J is also used for jumper	

L	1Ω to 9.1Ω (MCR006/01/03 F Class only)
X*	±100ppm/°C
*MCR03 F Class only	

Resistance code, 3 or 4 digits. 000 denotes jumper type.	
Tolerance	Resistance code
D, F	: 4 digits
J	: 3 digits

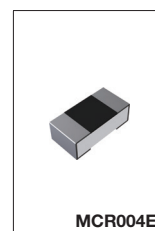
Packaging Specifications Code

Part No.	Code	Tolerance			Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)	D (±0.5%)			
MCR004	QLP	○	○	—	Paper tape (2mm Pitch)	φ180mm (7inch)	20,000
MCR006	YLP	○	○	○	Paper tape (2mm Pitch)	φ180mm (7inch)	15,000
MCR01	MZP	○	○	○	Paper tape (2mm Pitch)	φ180mm (7inch)	10,000
MCR03	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
MCR10	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
MCR18	EZP	○	○	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
○: Standard product

General purpose chip resistors <Pb-free type> (MCRE series)

- Developed resistors that do not use lead-containing substances.
- Compliant with RoHS regulations (Completely Pb-free).



MCRE series

Part No.	Size Code mm (inch)	Rated Power (W) (70°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
New MCR004E	0402 (01005)	0.031 (1/32)	15	F (±1%)	±300	1Ω to 97.6Ω (E24, E96 series)	-55 to +125	—
					±250	100Ω to 1MΩ (E24, E96 series)		
				J (±5%)	±300	1Ω to 91Ω (E24 series)		
					±250	100Ω to 1MΩ (E24 series)		

*E24: Standard products E96: Custom products

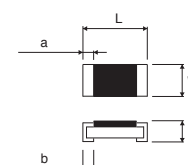
Jumper type

Part No.	Size Code mm (inch)	Rated Current (A)	Resistance	Operating Temperature (°C)	Automotive Grade AEC-Q200
MCR004E	0402 (01005)	0.5	50mΩ Max	-55 to +125	—

Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	a	b
MCR004E	0402 (01005)	0.40±0.02	0.20±0.02	0.13±0.02	0.10±0.03	0.10±0.03

●MCR004E (No marking)



Product No. Explanation

M	C	R	0	0	4	E	Q	L	C	F													
Part No.							Tolerance		Nominal Resistance														
							F	±1%	Resistance code, 3 or 4 digits. 000 denotes jumper type.														
							J	±5%															
							J is also used for jumper		<table><tr><th>Tolerance</th><th></th><th>Resistance code</th></tr><tr><td>F</td><td>:</td><td>4 digits</td></tr><tr><td>J</td><td>:</td><td>3 digits</td></tr></table>						Tolerance		Resistance code	F	:	4 digits	J	:	3 digits
Tolerance		Resistance code																					
F	:	4 digits																					
J	:	3 digits																					

Packaging Specifications Code

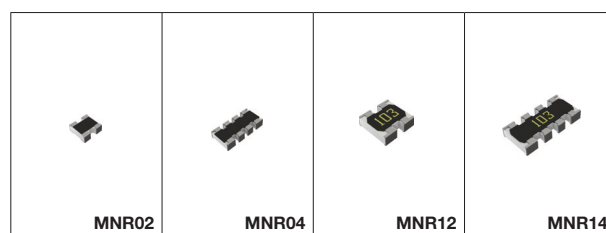
Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)			
MCR004E	QLC	◎	◎	Paper tape (2mm Pitch)	φ180mm (7inch)	20,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"

◎: Standard product

Chip resistor networks (MNR series 2-element type and 4-element type)

- Reduces cost
Use of chip networks reduces the number of components and saves mounting space.
- Easy fillet inspection
Convex type electrodes facilitate visual inspection of fillets.
Inspection can be performed with automatic inspection equipment.



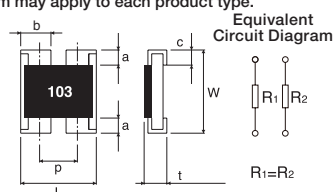
MNR series <0402x2 to 0603x4>										
Part No.	Size Code mm (inch)	No. of Terminals	No. of Elements	Rated Power (W) (70°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
MNR02	1005 (0402)×2	4	2	0.063/Element	25	J (±5%)	±200	10Ω to 1MΩ (E24 series)	-55 to +155	YES
MNR04	1005 (0402)×4	8	4	0.063/Element	25	J (±5%)	+500/-250 ±200	1Ω to 9.1Ω (E24 series) 10Ω to 1MΩ (E24 series)		YES
MNR12	1608 (0603)×2	4	2	0.063/Element	50	J (±5%)	±200	10Ω to 1MΩ (E24 series)		YES
MNR14	1608 (0603)×4	8	4	0.063/Element	50	J (±5%)	±500 ±200	2.2Ω to 6.8Ω (E6 series) 10Ω to 1MΩ (E24 series)		YES

Jumper type					
Part No.	Size Code mm (inch)	Rated Current	Resistance	Operating Temperature (°C)	Automotive Grade AEC-Q200
MNR02	1005 (0402)×2	1A/Element	50mΩ Max	-55 to +155	YES
MNR04	1005 (0402)×4	1A/Element			YES
MNR12	1608 (0603)×2	1A/Element			YES
MNR14	1608 (0603)×4	1A/Element			YES

■ Dimensions (Unit: mm)

● MNR02/MNR12 (Marked except MNR02)

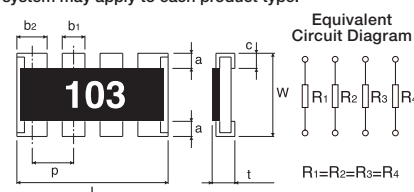
Different marking system may apply to each product type.



Part No.	L	W	t	a	b	c	p
MNR02	1.0±0.1	1.0±0.1	0.35±0.1	0.2±0.1	0.33 ^{+0.1} _{-0.05}	0.25±0.1	0.68
MNR12	1.6±0.1	1.6±0.1	0.5±0.1	0.3±0.2	0.6±0.15	0.25±0.15	0.8

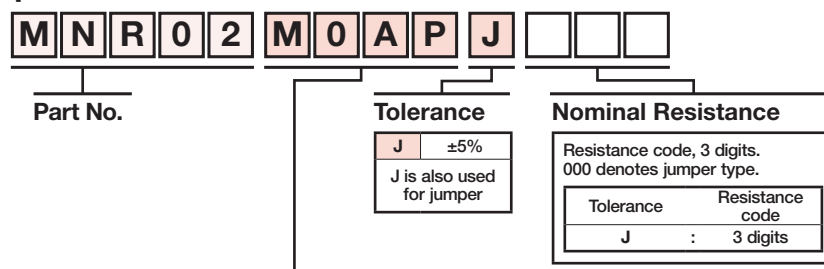
● MNR04/MNR14 (Marked except MNR04)

Different marking system may apply to each product type.



Part No.	L	W	t	a	b ₁	b ₂	c	p
MNR04	2.0±0.1	1.0±0.1	0.35±0.1	0.2±0.1	0.3±0.1	0.4±0.1	0.25±0.1	0.5
MNR14	3.2±0.1	1.6±0.1	0.5±0.1	0.3±0.2	0.4±0.15	0.6±0.15	0.25±0.15	0.8

■ Product No. Explanation



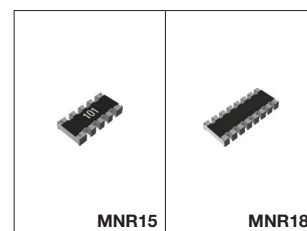
Packaging Specifications Code

Part No.	Code	Tolerance J (±5%)	Packaging Specifications	Reel	Basic Ordering Unit (pcs)
MNR02	M0AP	○	Paper tape (2mm Pitch)	φ180mm (7inch)	10,000
MNR04	M0AP	○	Paper tape (2mm Pitch)	φ180mm (7inch)	10,000
MNR12	E0AP	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
MNR14	E0AP	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"
○: Standard product

Chip resistor networks (MNR series 8-element type)

- One package built in 8-element chip contributes to space-saving.
- 8 resistor elements reduce mounting cost.
- Convex type electrodes facilitate visual inspection of fillets.
Inspection can be performed with automatic inspection equipment.
- Suitable for pull-up resistor, damping resistor.
- No direction to be mounted.



MNR series <0603×5 to 0602×8>										
Part No.	Size Code mm (inch)	No. of Terminals	No. of Elements	Rated Power (W) (70°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
MNR15	1608 (0603)×5	10	8	0.031/Element	12.5	J (±5%)	±200	56Ω to 100kΩ (E24 series)	-55 to +125	YES
MNR18	1605 (0602)×8	16	8	0.063/Element*	25	J (±5%)	±200	10Ω to 1MΩ (E24 series)		YES

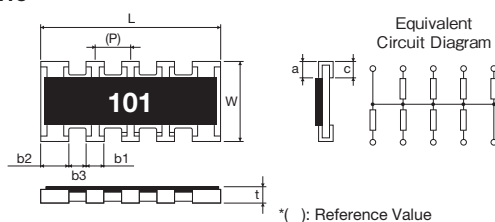
*Power for a packing Max 0.25W in all elements

Jumper type					
Part No.	Size Code mm (inch)	Rated Current	Resistance	Operating Temperature (°C)	Automotive Grade AEC-Q200
MNR18	1605 (0602)×8	1A/Element*	50mΩ Max	-55 to +125	YES

*Power for a packing Max 4A in all elements

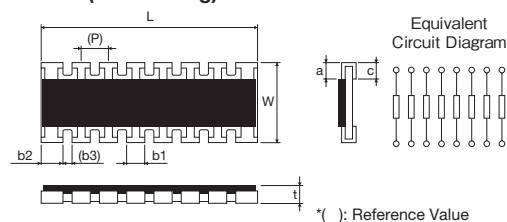
Dimensions (Unit: mm)

● MNR15



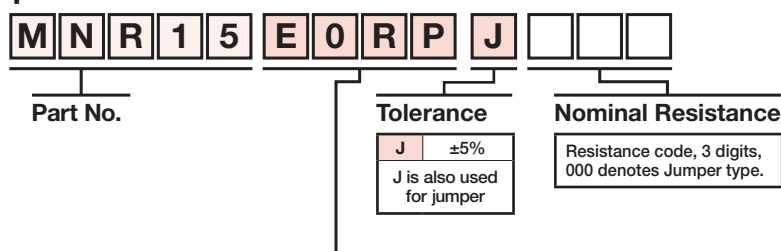
Part No.	L	W	t	a	b1	b2	b3	c	(P)
MNR15	3.2±0.1	1.6±0.1	0.5±0.1	0.3±0.2	0.32±0.15	0.48±0.15	0.32±0.15	0.3±0.2	(0.64)

● MNR18 (No marking)



Part No.	L	W	t	a	b1	b2	(b3)	c	(P)
MNR18	3.8±0.1	1.6±0.1	0.45±0.1	0.3±0.2	0.3±0.1	0.3±0.1	(0.2)	0.3±0.2	(0.5)

Product No. Explanation



Packaging Specifications Code

Part No.	Code	Tolerance J (±5%)	Packaging Specifications	Reel	Basic Ordering Unit (pcs)
MNR15	E0RP	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000
MNR18	E0AP	○	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"

○: Standard product

Class-leading Compact Size Chip Resistors (RASMID™ series)
Ultra-Compact Chip Resistors (SMR003)

- Original process technology ensures greater accuracy.
- Chip dimensional precision improved from ±20μm to ±10μm.
- Gold electrodes utilized for superior solderability and reliability.

*Minimum order quantity is further discussion is needed



SMR003 <009005>								
Part No.	Size Code mm (inch)	Rated Power (W) (70°C)	Limiting Element Voltage (V)	Tolerance	Temperature Coefficient (ppm/°C)	Resistance Range	Operating Temperature (°C)	Automotive Grade AEC-Q200
SMR003	03015 (009005)	0.02	10	F (±1%)	±200	10 to 1MΩ (E24, E96 series)	-55 to +125	—
				J (±5%)		10 to 1MΩ (E24 series)		

*E24: Standard products E96: Custom products

Jumper type					
Part No.	Size Code mm (inch)	Rated Current (A)	Resistance	Operating Temperature (°C)	Automotive Grade AEC-Q200
SMR003	03015 (009005)	0.5	50mΩ Max	-55 to +125	—

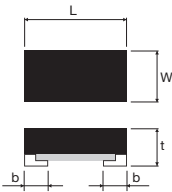
■

Dimensions (Unit: mm)

Part No.	Size Code mm (inch)	L	W	t	b
SMR003	03015 (009005)	0.30±0.01	0.15±0.01	0.11±0.01	0.07±0.01

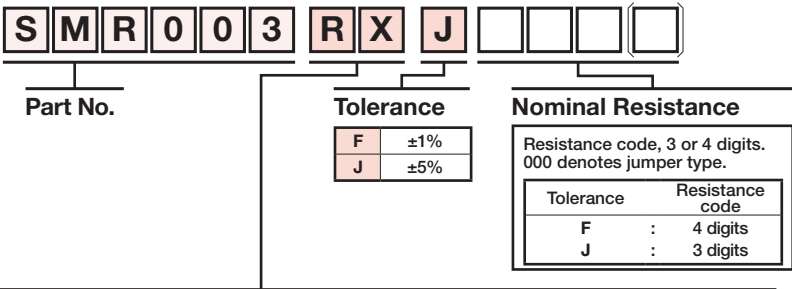
●

SMR003



■

Product No. Explanation



■

Packaging Specifications Code

Part No.	Code	Tolerance		Packaging Specifications	Reel	Basic Ordering Unit (pcs)
		J (±5%)	F (±1%)			
SMR003	RX	⊙	⊙	Embossed tape (1mm Pitch)	φ180mm (7inch)	40,000*

Reel (φ180mm): Compatible with JEITA standard "EIAJ ET-7200B"

⊙: Standard product

*Minimum order quantity is further discussion is needed

*RASMID™ is a trademark or a registered trademark of ROHM Co., Ltd.

RASMID™: ROHM's proprietary new method that enables superior dimensional precision, making it possible to develop the ultra-compact products.

Standard Nominal Resistance Values etc.

E3	10				22				47			
E6	10		15		22		33		47		68	
E12	10	12	15	18	22	27	33	39	47	56	68	82
E24	10	11	12	13	15	16	18	20	22	24	27	30
	33	36	39	43	47	51	56	62	68	75	82	91
E96	100	102	105	107	110	113	115	118	121	124	127	130
	133	137	140	143	147	150	154	158	162	165	169	174
	178	182	187	191	196	200	205	210	215	221	226	232
	237	243	249	255	261	267	274	280	287	294	301	309
	316	324	332	340	348	357	365	374	383	392	402	412
	422	432	442	453	464	475	487	499	511	523	536	549
	562	576	590	604	619	634	649	665	681	698	715	732
	750	768	787	806	825	845	866	887	909	931	953	976

Nominal Resistance

Resistors of a series fall into one of nominal resistance ranges shown in the table above. Nominal resistance is determined by the common ratio shown right.

Resistance Coding

Nominal resistance is expressed in 3 digits when the resistance tolerance is $\pm 5\%$ and in 4 digits when $\pm 0.5\%$, $\pm 1\%$, $\pm 2\%$.

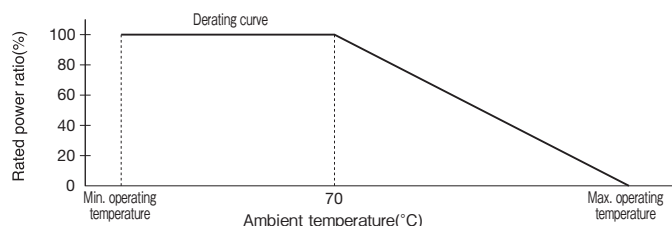
The leading 2 or 3 digits indicate significant figure while the last digit indicates the number of zeros. The letter R or L denotes the decimal point if necessary.

- e.g.1 $22\Omega \rightarrow 22 \times 10^0\Omega \rightarrow 220$ (the last digit indicates the number "0" of a multiplier)
e.g.2 $47k\Omega \rightarrow 47 \times 10^3\Omega \rightarrow 473$ (the last digit indicates the number "3" of a multiplier)
e.g.3 $1.2M\Omega \rightarrow 12 \times 10^5\Omega \rightarrow 125$ (the last digit indicates the number "5" of a multiplier)
e.g.4 $2.7\Omega \rightarrow 2R7$ (the decimal point indicate the letter R/the letter R apply to the low Resistance less than 10Ω)
e.g.5 $1130\Omega \rightarrow 113 \times 10^1\Omega \rightarrow 1131$ (the last digit indicates the number "1" of a multiplier/Resistance Tolerance 1% (F) products)
e.g.6 $0.10\Omega \rightarrow R10$
e.g.7 $1m\Omega \rightarrow 1L0$

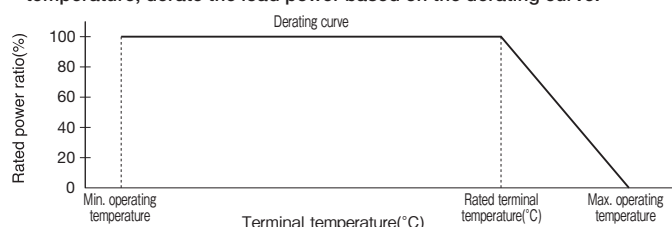
Series	Common ratio	Remarks
E6	$\sqrt[6]{10} \approx 1.46$	Rounded off to a 2-digit figure.
E12	$\sqrt[12]{10} \approx 1.21$	
E24	$\sqrt[24]{10} \approx 1.10$	
E96	$\sqrt[96]{10} \approx 1.02$	Rounded off to a 3-digit figure.

Supplement of Rated Power

- Derating curves based on ambient temperature.
When the ambient temperature exceeds the rated ambient temperature, derate the load power based on the derating curve.



- Derating curves based on the terminal temperature.
When the terminal temperature with load exceeds the rated terminal temperature, derate the load power based on the derating curve.



Supplementary to Notes

- *1 When resistor is to be exposed to a transient load (excessive large load, such as pulse), mount the resistor on your product and check the condition and evaluate the result. Constant application of a voltage above the rated voltage will degrade the performance and reliability of the resistor.

Do not apply a voltage exceeding the rated voltage across any ROHM resistors.

- *2 Rated voltage (V) = $\sqrt{\text{rated power (W)} \times \text{nominal resistance } (\Omega)}$ or the limiting element voltage, whichever smaller, is the rated voltage.

■ For basic guidelines on using resistors, see the technical reports issued by Japan Electronics and Information Technology Industries Association. JEITA RCR-2121B. "Guideline of notabilia for fixed resistors for use in electronic equipment (Safety Application Guide for fixed resistors for use in electronic equipment)"