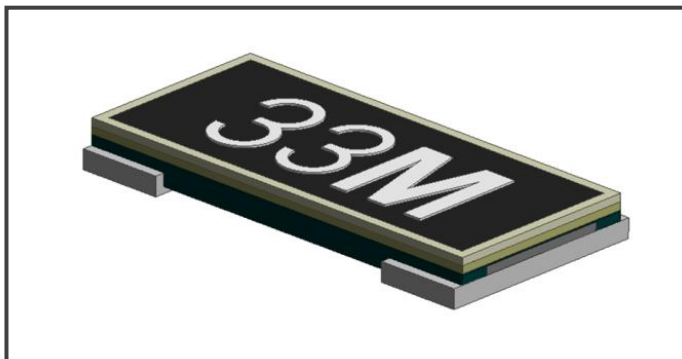


■ Features

- Ideal for current sensing solution.
- Small case size with high power.
- Excellent long term stability.
- Wide temperature range (-65°C to +170°C).
- AEC-Q200 qualified.
- RoHS compliant.
- ISO9001,ISO/TS16949 certification.



■ Products List

Type	Size		Power Rating (W)	T.C.R. ($\times 10^{-6}/^{\circ}\text{C}$) [20°C to 60°C]	Resistance Range * (Ω)	Resistance Tolerance (%)	Operating Temperature Range ($^{\circ}\text{C}$)
	(mm)	(inch)					
ERJMP ERJMH	3216	1206	0.25, 0.5, 1	± 20	1m to 50m Ω	F: $\pm 1\%$ J: $\pm 5\%$	-65°C to +170°C
	5025	2010	0.5, 1, 2				
	6432	2512	1, 2, 3				
ERJMF ERJMU	3216	1206	0.25, 0.5, 1	± 20	50m to 500m Ω	F: $\pm 1\%$ J: $\pm 5\%$	-65°C to +170°C
	5025	2010	0.5, 1, 2				
	6432	2512	1, 2, 3				

Temperature Coefficient ($\times 10^{-6}/^{\circ}\text{C}$) [-65°C to 170°C]	± 20
Element TCR ($\times 10^{-6}/^{\circ}\text{C}$) [-65°C to 170°C]	< 20
Operating Temperature Range ($^{\circ}\text{C}$)	-65°C to +170°C
Maximum Working Voltage (V)	$(P \times R)^{1/2}$

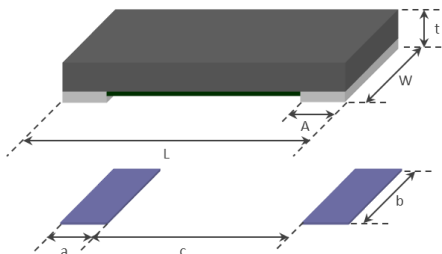
■ Explanation of Part Numbers

E	R	J	M	P	4	P	F	1	M	0	U		
Product Code				Structure		Size (mm/inch)		Power		RV Tolerance		Packaging Methods	
ERJM Metal Shunt Resistors				Code Structure		Code Size		Code Power		Code Tolerance		Code Packaging	
				P $\leq 50\text{m}\Omega$ Std.Terminal		4 6432 / 2512		Q 3W		F $\pm 1\%$		U Embossed Carrier Taping	
				H $\leq 50\text{m}\Omega$ Diff.Terminal		3 5025 / 2010		P 2W		J $\pm 5\%$			
				F $> 50\text{m}\Omega$ Std.Terminal		2 3216 / 1206		M 1W					
				U $> 50\text{m}\Omega$ Diff.Terminal				K 0.5W					
								G 0.25W					
												Resistance Value	
												Shown by 3 digits or letters. Decimal point is expressed by M as 1m Ω =1M0, R as 100m Ω =R10	

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■ Dimensions

● ERJMP/F



Part No.	Case Size		Resistance Value (Ω)	Dimensions (mm)				Anexample Land Pattern (mm)				
	(mm)	(inch)		L	W	A	t	a	b	c		
ERJMP2	3216	1206	1mΩ	3.20±0.25	1.60±0.25	1.00±0.25	0.635±0.25	1.60	1.80	0.80		
			2m to 5mΩ			0.64±0.25						
			6m to 50mΩ			0.50±0.25						
ERJMP3	5025	2010	1m to 6mΩ	5.00±0.25	2.55±0.25	1.47±0.25	0.635±0.25	2.40	3.05	1.40		
			7m to 50mΩ			0.50±0.25		1.40		3.30		
ERJMP4	6432	2512	0.5m to 0.9mΩ	6.40±0.25	3.20±0.25	2.70±0.25	0.635±0.25	3.00	3.70	1.30		
			1m to 4mΩ			2.20±0.25						
			5m to 6mΩ			1.20±0.25					2.10	3.20
			7m to 50mΩ			0.76±0.25					1.65	4.10
ERJMH3	5025	2010	1m to 50mΩ	5.00±0.25	2.55±0.25	0.70±0.25	0.635±0.25	1.40	3.05	3.30		
ERJMH4	6432	2512	1m to 50mΩ	6.40±0.25	3.20±0.25	0.90±0.25	0.635±0.25	1.65	3.70	4.10		
ERJMF2	3216	1206	50m to 500mΩ	3.20±0.25	1.60±0.25	0.50±0.25	0.635±0.25	1.60	1.80	0.80		
ERJMF3	5025	2010	50m to 500mΩ	5.00±0.25	2.55±0.25	0.50±0.25	0.635±0.25	1.40	3.05	3.30		
ERJMF4	6432	2512	50m to 500mΩ	6.40±0.25	3.20±0.25	0.76±0.25	0.635±0.25	1.65	3.70	4.10		
ERJMU3	5025	2010	50m to 500mΩ	5.00±0.25	2.55±0.25	0.70±0.25	0.635±0.25	1.40	3.05	3.30		
ERJMU4	6432	2512	50m to 500mΩ	6.40±0.25	3.20±0.25	0.90±0.25	0.635±0.25	1.65	3.70	4.10		

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■ Detail Part Number List (1206 Size)

Size	Power Rating (W)	Resistance Value (mΩ)	Resistance Tolerance (%)	T.C.R. ($\times 10^{-6}/^{\circ}\text{C}$)	Part Number	Size	Power Rating (W)	Resistance Value (mΩ)	Resistance Tolerance (%)	T.C.R. ($\times 10^{-6}/^{\circ}\text{C}$)	Part Number
3216 (1206)	0.25	1	±1%	±75	ERJMP2GF1M0U	3216 (1206)	0.5	68	±1%	±75	ERJMF2KF68MU
		2	±1%	±75	ERJMP2GF2M0U			100	±1%	±75	ERJMF2KFR10U
		3	±1%	±75	ERJMP2GF3M0U			150	±1%	±75	ERJMF2KFR15U
		4	±1%	±75	ERJMP2GF4M0U			220	±1%	±75	ERJMF2KFR22U
		5	±1%	±20	ERJMP2GF5M0U			330	±1%	±75	ERJMF2KFR33U
		6	±1%	±20	ERJMP2GF6M0U			470	±1%	±75	ERJMF2KFR47U
		7	±1%	±20	ERJMP2GF7M0U			500	±1%	±75	ERJMF2KFR50U
		8	±1%	±20	ERJMP2GF8M0U			1	±1%	±75	ERJMP2MF1M0U
		9	±1%	±20	ERJMP2GF9M0U		2	±1%	±75	ERJMP2MF2M0U	
		10	±1%	±20	ERJMP2GF10MU		3	±1%	±75	ERJMP2MF3M0U	
		15	±1%	±20	ERJMP2GF15MU		4	±1%	±75	ERJMP2MF4M0U	
		22	±1%	±20	ERJMP2GF22MU		5	±1%	±20	ERJMP2MF5M0U	
		33	±1%	±20	ERJMP2GF33MU		6	±1%	±20	ERJMP2MF6M0U	
		47	±1%	±20	ERJMP2GF47MU		7	±1%	±20	ERJMP2MF7M0U	
		50	±1%	±20	ERJMP2GF50MU		8	±1%	±20	ERJMP2MF8M0U	
		68	±1%	±75	ERJMF2GF68MU		9	±1%	±20	ERJMP2MF9M0U	
		100	±1%	±75	ERJMF2GFR10U		10	±1%	±20	ERJMP2MF10MU	
		150	±1%	±75	ERJMF2GFR15U		15	±1%	±20	ERJMP2MF15MU	
	220	±1%	±75	ERJMF2GFR22U	22		±1%	±20	ERJMP2MF22MU		
	330	±1%	±75	ERJMF2GFR33U	33		±1%	±20	ERJMP2MF33MU		
	470	±1%	±75	ERJMF2GFR47U	47		±1%	±20	ERJMP2MF47MU		
	500	±1%	±75	ERJMF2GFR50U	50		±1%	±20	ERJMP2MF50MU		
	0.5	1	±1%	±75	ERJMP2KF1M0U		68	±1%	±75	ERJMF2MF68MU	
		2	±1%	±75	ERJMP2KF2M0U		100	±1%	±75	ERJMF2MFR10U	
		3	±1%	±75	ERJMP2KF3M0U		150	±1%	±75	ERJMF2MFR15U	
		4	±1%	±75	ERJMP2KF4M0U		220	±1%	±75	ERJMF2MFR22U	
		5	±1%	±20	ERJMP2KF5M0U		330	±1%	±75	ERJMF2MFR33U	
		6	±1%	±20	ERJMP2KF6M0U		470	±1%	±75	ERJMF2MFR47U	
		7	±1%	±20	ERJMP2KF7M0U		500	±1%	±75	ERJMF2MFR50U	
		8	±1%	±20	ERJMP2KF8M0U						
		9	±1%	±20	ERJMP2KF9M0U						
		10	±1%	±20	ERJMP2KF10MU						
		15	±1%	±20	ERJMP2KF15MU						
22		±1%	±20	ERJMP2KF22MU							
33		±1%	±20	ERJMP2KF33MU							
47		±1%	±20	ERJMP2KF47MU							
50		±1%	±20	ERJMP2KF50MU							

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■ Detail Part Number List (2010 Size)

Size	Power Rating (W)	Resistance Value (mΩ)	Resistance Tolerance (%)	T.C.R. ($\times 10^{-6}/^{\circ}\text{C}$)	Part Number	Size	Power Rating (W)	Resistance Value (mΩ)	Resistance Tolerance (%)	T.C.R. ($\times 10^{-6}/^{\circ}\text{C}$)	Part Number
5025 (2010)	0.5	1	±1%	±75	ERJMP3KF1M0U	5025 (2010)	1	68	±1%	±75	ERJMF3MFR68MU
		2	±1%	±75	ERJMP3KF2M0U			100	±1%	±75	ERJMF3MFR10U
		3	±1%	±75	ERJMP3KF3M0U			150	±1%	±75	ERJMF3MFR15U
		4	±1%	±75	ERJMP3KF4M0U			220	±1%	±75	ERJMF3MFR22U
		5	±1%	±20	ERJMP3KF5M0U			330	±1%	±75	ERJMF3MFR33U
		6	±1%	±20	ERJMP3KF6M0U			470	±1%	±75	ERJMF3MFR47U
		7	±1%	±20	ERJMP3KF7M0U			500	±1%	±75	ERJMF3MFR50U
		8	±1%	±20	ERJMP3KF8M0U			1	±1%	±75	ERJMP3PF1M0U
		9	±1%	±20	ERJMP3KF9M0U			2	±1%	±75	ERJMP3PF2M0U
		10	±1%	±20	ERJMP3KF10MU		3	±1%	±75	ERJMP3PF3M0U	
		15	±1%	±20	ERJMP3KF15MU		4	±1%	±75	ERJMP3PF4M0U	
		22	±1%	±20	ERJMP3KF22MU		5	±1%	±20	ERJMP3PF5M0U	
		33	±1%	±20	ERJMP3KF33MU		6	±1%	±20	ERJMP3PF6M0U	
		47	±1%	±20	ERJMP3KF47MU		7	±1%	±20	ERJMP3PF7M0U	
		50	±1%	±20	ERJMP3KF50MU		8	±1%	±20	ERJMP3PF8M0U	
		68	±1%	±75	ERJMF3KF68MU		9	±1%	±20	ERJMP3PF9M0U	
		100	±1%	±75	ERJMF3KFR10U		10	±1%	±20	ERJMP3PF10MU	
		150	±1%	±75	ERJMF3KFR15U		15	±1%	±20	ERJMP3PF15MU	
	220	±1%	±75	ERJMF3KFR22U	22		±1%	±20	ERJMP3PF22MU		
	330	±1%	±75	ERJMF3KFR33U	33		±1%	±20	ERJMP3PF33MU		
	470	±1%	±75	ERJMF3KFR47U	47		±1%	±20	ERJMP3PF47MU		
	500	±1%	±75	ERJMF3KFR50U	50		±1%	±20	ERJMP3PF50MU		
	1	1	±1%	±75	ERJMP3MF1M0U		68	±1%	±75	ERJMF3PF68MU	
		2	±1%	±75	ERJMP3MF2M0U		100	±1%	±75	ERJMF3PFR10U	
		3	±1%	±75	ERJMP3MF3M0U		150	±1%	±75	ERJMF3PFR15U	
		4	±1%	±75	ERJMP3MF4M0U		220	±1%	±75	ERJMF3PFR22U	
		5	±1%	±20	ERJMP3MF5M0U		330	±1%	±75	ERJMF3PFR33U	
		6	±1%	±20	ERJMP3MF6M0U		470	±1%	±75	ERJMF3PFR47U	
		7	±1%	±20	ERJMP3MF7M0U		500	±1%	±75	ERJMF3PFR50U	
		8	±1%	±20	ERJMP3MF8M0U						
		9	±1%	±20	ERJMP3MF9M0U						
		10	±1%	±20	ERJMP3MF10MU						
		15	±1%	±20	ERJMP3MF15MU						
22		±1%	±20	ERJMP3MF22MU							
33		±1%	±20	ERJMP3MF33MU							
47		±1%	±20	ERJMP3MF47MU							
50		±1%	±20	ERJMP3MF50MU							

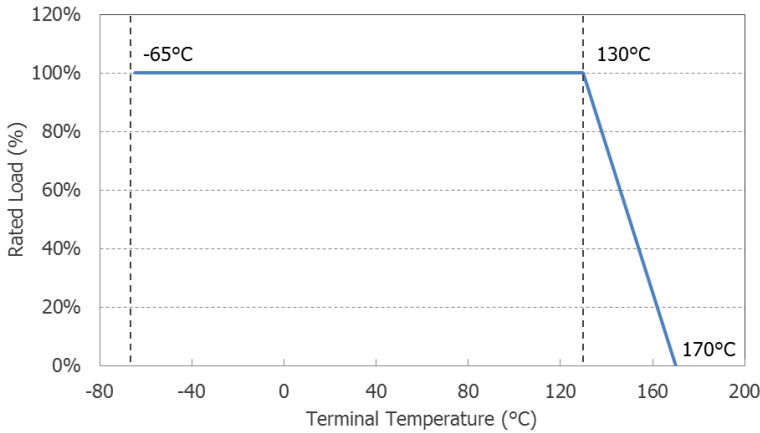
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■ Detail Part Number List (2512 Size)

Size	Power Rating (W)	Resistance Value (mΩ)	Resistance Tolerance (%)	T.C.R. ($\times 10^{-6}/^{\circ}\text{C}$)	Part Number	Size	Power Rating (W)	Resistance Value (mΩ)	Resistance Tolerance (%)	T.C.R. ($\times 10^{-6}/^{\circ}\text{C}$)	Part Number
6432 (2512)	1	1	±1%	±75	ERJMP4MF1M0U	6432 (2512)	2	68	±1%	±75	ERJMF4PF68MU
		2	±1%	±75	ERJMP4MF2M0U			100	±1%	±75	ERJMF4PFR10U
		3	±1%	±75	ERJMP4MF3M0U			150	±1%	±75	ERJMF4PFR15U
		4	±1%	±75	ERJMP4MF4M0U			220	±1%	±75	ERJMF4PFR22U
		5	±1%	±20	ERJMP4MF5M0U			330	±1%	±75	ERJMF4PFR33U
		6	±1%	±20	ERJMP4MF6M0U			470	±1%	±75	ERJMF4PFR47U
		7	±1%	±20	ERJMP4MF7M0U			500	±1%	±75	ERJMF4PFR50U
		8	±1%	±20	ERJMP4MF8M0U			1	±1%	±75	ERJMP4QF1M0U
		9	±1%	±20	ERJMP4MF9M0U		2	±1%	±75	ERJMP4QF2M0U	
		10	±1%	±20	ERJMP4MF10MU		3	±1%	±75	ERJMP4QF3M0U	
		15	±1%	±20	ERJMP4MF15MU		4	±1%	±75	ERJMP4QF4M0U	
		22	±1%	±20	ERJMP4MF22MU		5	±1%	±20	ERJMP4QF5M0U	
		33	±1%	±20	ERJMP4MF33MU		6	±1%	±20	ERJMP4QF6M0U	
		47	±1%	±20	ERJMP4MF47MU		7	±1%	±20	ERJMP4QF7M0U	
		50	±1%	±20	ERJMP4MF50MU		8	±1%	±20	ERJMP4QF8M0U	
	68	±1%	±75	ERJMF4MF68MU	9		±1%	±20	ERJMP4QF9M0U		
	100	±1%	±75	ERJMF4MFR10U	10		±1%	±20	ERJMP4QF10MU		
	150	±1%	±75	ERJMF4MFR15U	15		±1%	±20	ERJMP4QF15MU		
	220	±1%	±75	ERJMF4MFR22U	22		±1%	±20	ERJMP4QF22MU		
	330	±1%	±75	ERJMF4MFR33U	33		±1%	±20	ERJMP4QF33MU		
	470	±1%	±75	ERJMF4MFR47U	47		±1%	±20	ERJMP4QF47MU		
	500	±1%	±75	ERJMF4MFR50U	50		±1%	±20	ERJMP4QF50MU		
	2	1	±1%	±75	ERJMP4PF1M0U		68	±1%	±75	ERJMF4QF68MU	
		2	±1%	±75	ERJMP4PF2M0U		100	±1%	±75	ERJMF4QFR10U	
		3	±1%	±75	ERJMP4PF3M0U		150	±1%	±75	ERJMF4QFR15U	
4		±1%	±75	ERJMP4PF4M0U	220	±1%	±75	ERJMF4QFR22U			
5		±1%	±20	ERJMP4PF5M0U	330	±1%	±75	ERJMF4QFR33U			
6		±1%	±20	ERJMP4PF6M0U	470	±1%	±75	ERJMF4QFR47U			
7		±1%	±20	ERJMP4PF7M0U	500	±1%	±75	ERJMF4QFR50U			
8		±1%	±20	ERJMP4PF8M0U							
9		±1%	±20	ERJMP4PF9M0U							
10		±1%	±20	ERJMP4PF10MU							
15		±1%	±20	ERJMP4PF15MU							
22		±1%	±20	ERJMP4PF22MU							
33		±1%	±20	ERJMP4PF33MU							
47		±1%	±20	ERJMP4PF47MU							
50		±1%	±20	ERJMP4PF50MU							

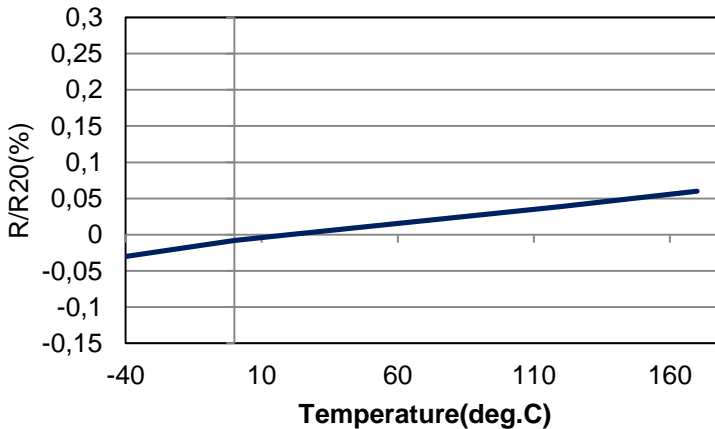
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■ Power derating



For resistors operated at terminal temperatures above 130°C, power rating shall be derated in accordance with the figure on the left.

■ Typical Temperature dependence of electrical resistance



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■ Target Performance (AEC-Q200)

Test Item	Test Conditions	Specification	Typical value
Thermal Shock	MIL-STD-202 method 107 -55°C↔125°C,25cycle	±0.5%	0.05%
Overload	MIL-R-26E (5 x rated power, 5sec)	±0.5%	0.02%
Solderability	MIL-STD-202 method 208	>95% coverage	>95% coverage
Resistance to Solvents	MIL-STD-202 method 215, 2.1a, 2.1d	No damage	No damage
Low Temperature Storage and Operation	MIL-STD-26E -65°C,24h	±0.5%	0.03%
Resistance to Soldering Heat	MIL-STD-202 method 210 260°C,10s	±0.5%	0.1%
Moisture Resistance	MIL-STD-202 method 106	±0.5%	0.2%
Shock	MIL-STD-202 method 213-A	±0.5%	0.1%
Vibration, High Frequency	MIL-STD-202 method 204-B	±0.5%	0.05%
Life	MIL-STD-26E Rated Power,1.5h-ON,0.5h-OFF, 2000h	±1%	0.3%
Storage Life at Elevated Temperature	MIL-STD-202 method 108-F 170°C,2000h	±1%	0.3%
High Temperature Characteristic	140°C, 2000h	±0.5%	0.05%
Frequency Characteristic	Inductance	< 2nH	< 2nH

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