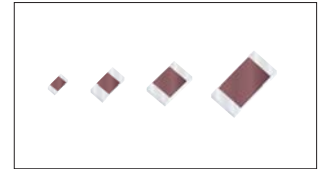


Sulfur Tolerant Chip Resistors

TRR Series

●Features

- 1) Special construction prevents sulfur gas penetration, significantly increasing reliability.
- 2) Highly recommended for automotive, industrial and Power supply applications under sulfur environment.
- 3) ROHM resistors have obtained ISO9001 / ISO / TS16949 certification.
- 4) Corresponds to AEC-Q200. (TRR03 / 10 / 18)



●Products List

Part No.	Size		Rated Power (70°C) (W)	Limiting Element Voltage (V)	Maximum Overload Voltage (V)	Temperature Coefficient (ppm / °C)	Resistance Tolerance (%)	Resistance Range	Series	Operating Temperature Range (°C)
	(mm)	(inch)								
TRR01	1005	0402	0.063	50	100	+500 / -250	J(±5%)	1Ω to 9.1Ω	E24	-55 to +155
						±200		10Ω to 10MΩ		
						±100	10Ω to 2.2MΩ			
Jumper type : Rmax = 50mΩ / Imax. = 1A										
TRR03	1608	0603	0.1	50	100	±400	J(±5%)	1Ω to 9.1Ω	E24	-55 to +155
						±200		10Ω to 10MΩ		
						±100	10Ω to 10MΩ			
Jumper type : Rmax = 50mΩ / Imax. = 1A										
TRR10	2012	0805	0.125	150	200	±400	J(±5%)	1Ω to 9.1Ω	E24	-55 to +155
						±200		10Ω to 10MΩ		
						±100	10Ω to 2.2MΩ			
Jumper type : Rmax = 50mΩ / Imax. = 2A										
TRR18	3216	1206	0.25	200	400	±400	J(±5%)	1Ω to 9.1Ω	E24	-55 to +155
						±200		10Ω to 10MΩ		
						±100	10Ω to 2.2MΩ			
Jumper type : Rmax = 50mΩ / Imax. = 2A										

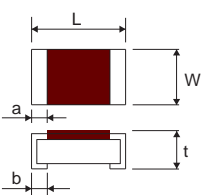
*Design and specifications are subject to change without notice.
Carefully check the specification sheet supplied with the product before using or ordering it.

●Part Number Description

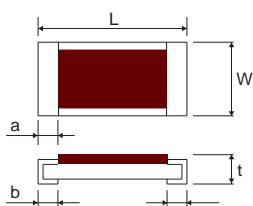
T R R	0 1	M Z P	J	1 0 5																										
Part No. TRR (Sulfur Tolerant Chip Resistors)	Size (mm [inch]) 01 (1005 [0402]) 03 (1608 [0603]) 10 (2012 [0805]) 18 (3216 [1206])	Packaging Specifications Code	Resistance Tolerance F (±1%) J (±5%)	Nominal Resistance Resistance code, 3 or 4 digits. 000 denotes jumper type.																										
		<table border="1"> <thead> <tr> <th>Part No.</th> <th>Code</th> <th>Packaging specifications</th> <th>Quantity / Reel</th> </tr> </thead> <tbody> <tr> <td>TRR01</td> <td>MZP</td> <td>Paper tape (2mm Pitch)</td> <td>10,000</td> </tr> <tr> <td>TRR03</td> <td>EZP</td> <td>Paper tape (4mm Pitch)</td> <td>5,000</td> </tr> <tr> <td>TRR10</td> <td>EZP</td> <td>Paper tape (4mm Pitch)</td> <td>5,000</td> </tr> <tr> <td>TRR18</td> <td>EZP</td> <td>Paper tape (4mm Pitch)</td> <td>5,000</td> </tr> </tbody> </table>	Part No.	Code	Packaging specifications	Quantity / Reel	TRR01	MZP	Paper tape (2mm Pitch)	10,000	TRR03	EZP	Paper tape (4mm Pitch)	5,000	TRR10	EZP	Paper tape (4mm Pitch)	5,000	TRR18	EZP	Paper tape (4mm Pitch)	5,000		<table border="1"> <thead> <tr> <th>Resistance tolerance</th> <th>Resistance code</th> </tr> </thead> <tbody> <tr> <td>F</td> <td>: 4 digits</td> </tr> <tr> <td>J</td> <td>: 3 digits</td> </tr> </tbody> </table>	Resistance tolerance	Resistance code	F	: 4 digits	J	: 3 digits
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F	: 4 digits																													
J	: 3 digits																													
				<p>Ex.)</p> <p>1Ω = 1R0 (±5%) 9.1Ω = 9R1 (±5%) 10Ω = 10R0 (±1%) 100 (±5%) 1MΩ = 1004 (±1%) 105 (±5%)</p>																										

●Chip Resistor Dimensions and Markings

■ TRR01 / 03



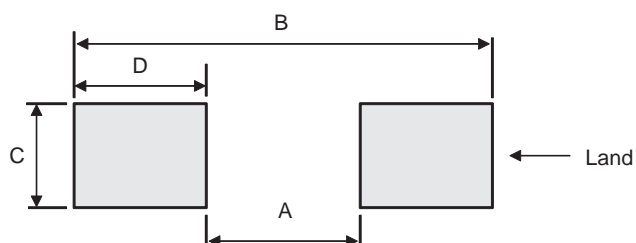
■ TRR10 / 18



(Unit : mm)

Part No.	(mm)	(inch)	L	W	t	a	b	Marking existence *Including jumper type
TRR01	1005	0402	1.0±0.05	0.5±0.05	0.35±0.05	0.33±0.08	0.25 ^{+0.05} _{-0.1}	No
TRR03	1608	0603	1.6±0.1	0.8±0.1	0.45±0.1	0.4±0.1	0.3±0.2	No
TRR10	2012	0805	2.0±0.1	1.25±0.1	0.55±0.1	0.43 ^{+0.15} _{-0.1}	0.4±0.2	No
TRR18	3216	1206	3.2±0.15	1.6±0.15	0.55±0.1	0.69 ^{+0.2} _{-0.15}	0.5±0.25	No

●Land pattern Example



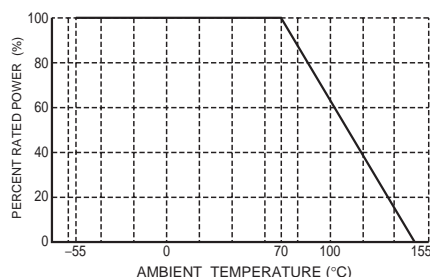
(Unit : mm)

Dimensions Part No.	A	B	C	D
TRR01	0.5	1.3	0.5	0.4
TRR03	1.0	2.0	0.8	0.5
TRR10	1.2	2.6	1.15	0.7
TRR18	2.2	4.0	1.5	0.9

●Derating Curve

When the ambient temperature exceeds 70°C, power dissipation must be adjusted according to the derating curves below.

■ TRR01 / 03 / 10 / 18



●Characteristics

Test Items	Guaranteed Value		Test Conditions
	Resistor Type	Jumper Type	
Resistance	See P.1		20°C
Variation of resistance with temperature	See P.1		Measurement : +20 / -55 / +20 / +125°C
Overload	± (2.0%+0.1Ω)	Max. 50mΩ	Rated voltage (current) ×2.5, 2s Maximum overload voltage
Solderability	A new uniform coating of minimum of 95% of the surface being immersed and no soldering damage.		Rosin-Ethanol : 25% (Weight) Soldering condition : 235±5°C Duration of immersion : 2.0±0.5s
Resistance to soldering heat	± (1.0%+0.05Ω) No remarkable abnormality on the appearance.	Max. 50mΩ	Soldering condition : 260±5°C Duration of immersion : 10±1s
Rapid change of temperature	± (1.0%+0.05Ω)	Max. 50mΩ	Test temp. : -55°C to +125°C 5cycle
Damp heat, steady state	± (3.0%+0.1Ω)	Max. 100mΩ	40°C, 93%RH (Relative Humidity) Test time : 1,000h to 1,048h
Endurance at 70°C	± (3.0%+0.1Ω)	Max. 100mΩ	70°C Rated voltage (current) 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h
Endurance	± (3.0%+0.1Ω)	Max. 100mΩ	155°C Test time : 1,000h to 1,048h
Resistance to solvent	± (1.0%+0.05Ω)	Max. 50mΩ	23±5°C, Immersion cleaning, 5±0.5min Solvent : 2-propanol
Bend strength of the end face plating	± (1.0%+0.05Ω) Without mechanical damage such as breaks.	Max. 50mΩ	—

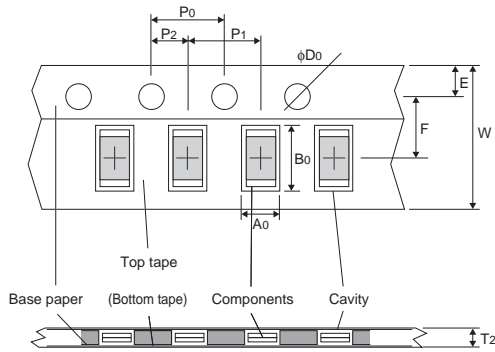
Compliance Standard(s) : IEC60115-8
JISC 5201-8

●Chip weight (typical value)

Parameter	Unit	TRR01	TRR03	TRR10	TRR18
Weight	mg/pc	0.70	2.13	5.05	9.51

●Tape Dimensions

■ Paper Tape

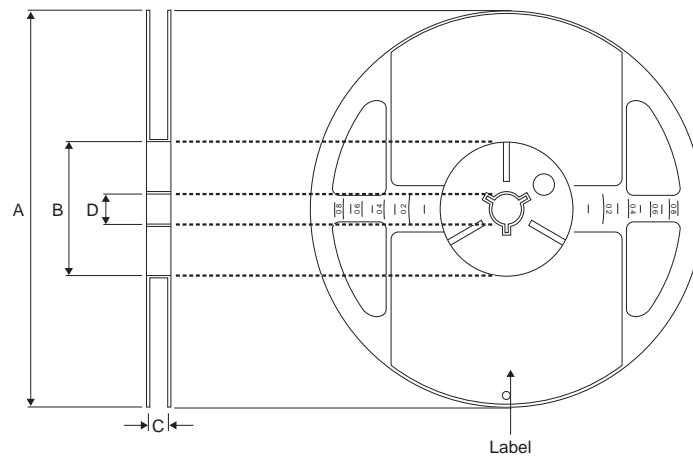


(Unit : mm)

Part No.	W	F	E	A0	B0
TRR01	8.0±0.3	3.5±0.05	1.75±0.1	0.7±0.1	1.2±0.1
TRR03	8.0±0.3	3.5±0.05	1.75±0.1	1.1±0.1	1.9±0.1
TRR10	8.0±0.3	3.5±0.05	1.75±0.1	1.65 ^{+0.2} _{-0.1}	2.4 ^{+0.2} _{-0.1}
TRR18	8.0±0.3	3.5±0.05	1.75±0.1	1.95 ^{+0.1} _{-0.05}	3.5 ^{+0.15} _{-0.05}

Part No.	D0	P0	P1	P2	T2
TRR01	φ1.5 ^{+0.1} ₀	4.0±0.1	2.0±0.05	2.0±0.05	Max 1.1
TRR03	φ1.5 ^{+0.1} ₀	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
TRR10	φ1.5 ^{+0.1} ₀	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
TRR18	φ1.5 ^{+0.1} ₀	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1

●Reel Dimensions



ACCORDING TO EIAJ ET-7200B

(Unit : mm)

Part No.	A	B	C	D
TRR01	φ180 ⁰ _{-1.5}	φ60 ^{+1.0} ₀	9 ^{+1.0} ₀	φ13±0.2
TRR03				
TRR10				
TRR18				

Notes

- 1) The information contained herein is subject to change without notice.
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