

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)



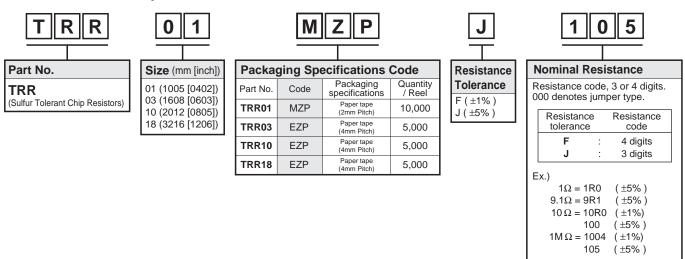
Products List

Part No.	Si		Rated Power (70°C)	Limiting Element Voltage	Maximum Overload	Temperature Coefficient	Resistance Tolerance	Resistance Range	Series	Operating Temperature
	(mm)	(inch)	(W)	(V)	Voltage (V)	(ppm / °C)	(%)			Range (°C)
			0.063	50		+500 / -250	J(±5%)	1Ω to 9.1Ω		
TRR01	1005	0402			100	±200	J(±5%)	10Ω to 10MΩ	E24	
IKKOI	1003	0402				±100	F(±1%)	10Ω to 2.2MΩ	0Ω to $2.2M\Omega$	
				J	umper type :	Rmax = 50m	Ω / Imax. = 1	IA		4 -55 to +155
						±400	J(±5%)	1Ω to 9.1Ω	E24	
TRR03	1608	0603	0.1	50	100	±200	J(±576)	10Ω to 10MΩ		
IKKUS	1000	0003				±100	F(±1%)	10Ω to 10MΩ		
				J	umper type :	Rmax = 50m	Ω / Imax. = 1	IA		
						±400	J(±5%)	1Ω to 9.1Ω		-55 (0 +155
TRR10	2012	0805	0.125	150	200	±200	J(±576)	10Ω to 10MΩ	E24	
IKKIU	2012	0005				±100	F(±1%)	10Ω to 2.2MΩ		
				J	umper type :	Rmax = 50m	Ω / Imax. = 2	2A		
		216 1206 0.25		200		±400	1/459/)	1Ω to 9.1Ω	E24	
TRR18	3216				400	±200	J(±5%)	10Ω to 10MΩ		
INKIO	3210				±100	F(±1%)	10Ω to 2.2MΩ			
				J	umper type :	Rmax = 50m	Ω / Imax. = 2	2A		

^{*}Design and specifications are subject to change without notice.

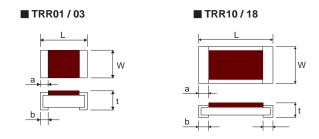
Carefully check the specification sheet supplied with the product before using or ordering it.

Part Number Description



TRR Series Data Sheet

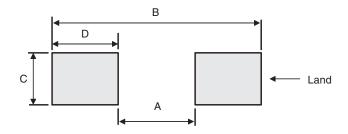
● Chip Resistor Dimensions and Markings



(Unit: mm)

Part No.	(mm)	(inch)	L	W	t	а	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)

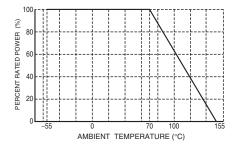
				(011111.111111)
Dimensions Part No.	А	В	С	D
TRR01	0.5	1.3	0.5	0.4
TRR03	1.0	2.0	0.8	0.5
TRR10	1.2	2.6	1.15	0.7
TRR18	2.2	4.0	1.5	0.9

TRR Series Data Sheet

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	Guarante	ed Value	Test Conditions	
1 est items	Resistor Type	Jumper Type	Test Conditions	
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		pating of minimum of the being immersed damage.	Rosin-Ethanol : 25% (Weight) Soldering condition : 235±5°C Duration of immersion : 2.0±0.5s	
Resistance to soldering heat	$\pm \ (1.0\% + 0.05\Omega) \\ \text{Max. } 50 \text{m}\Omega \\ \text{No remarkable abnormality on the appearance.}$		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	± (1.0%+0.05Ω)	Max. 50mΩ		
the end face plating	Without mechanical da	mage such as breaks.	-	

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

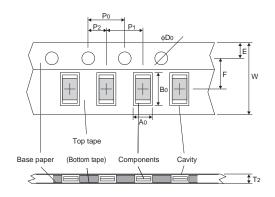
●Chip weight (typical value)

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

TRR Series Data Sheet

●Tape Dimensions

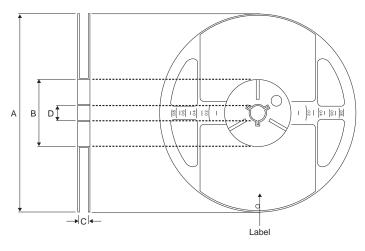
■ Paper Tape



					(Unit : mm)
Part No.	W	F	Е	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	Po	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.	А	В	С	D
TRR01				
TRR03	4400 0	+50 +1.0	9 +1.0	+4210.2
TRR10	φ180 ⁰ -1.5	ф60 ^{+1.0}	9 0	φ13±0.2
TRR18				

Notes

- 1) The information contained herein is subject to change without notice.
- Before you use our Products, please contact our sales representative and verify the latest specifications:
- 3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors. Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Poducts beyond the rating specified by ROHM
- 4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.
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- 7) The Products specified in this document are not designed to be radiation tolerant.
- 8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative: transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.
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