Low Ohmic Thick Film Chip Resistors

MCR18 (3216 size (1206 size) : 1 / 4W)

●Features

1) Power rating of 1 / 4W
2) Highly reliable chip resistor Ruthenium oxide dielectric offers superior resistance to the elements.
3) Electrodes not corroded by soldering
   Thick film makes the electrodes very strong.
4) ROHM resistors have approved ISO9001- / ISO/TS 19649- certification.

●Ratings

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

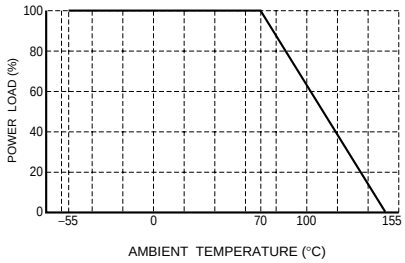
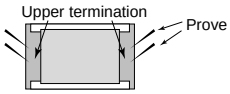
Item	Conditions	Specifications
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  Fig.1	0.25W (1 / 4W) at 70°C
Rated voltage	The voltage rating is calculated by the following equation. $E=\sqrt{P\times R}$ E: Rated voltage (V) P: Rated power (W) R: Nominal resistance (Ω)	
Nominal resistance	See Table 1.	
Operating temperature		–55°C to +155°C

Table 1

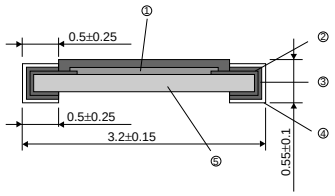
Resistance tolerance	Special specification	Resistance range (Ω)	Resistance temperature coefficient (ppm/°C)
F (±1%)	L	0.1 to 0.13 (E24)	400±200
	L	0.15 to 9.1 (E24)	±250
	S	0.047 to 0.091 (E24)	500±300
J (±5%)	L	0.1 to 0.13 (E24)	400±200
	L	0.15 to 0.91 (E24)	±250
	S	0.047 to 0.091 (E24)	500±300

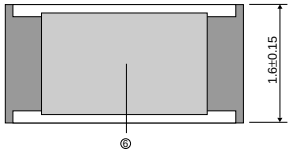
●Before using components in circuits where they will be exposed to transients such as pulse loads (short–duration, high–level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady state voltage that is greater than its rated voltage.

●Characteristics

Item	Guaranteed value Resistor type	Test conditions (JIS C 5201-1)
Resistance	J : ±5% F : ±1%	JIS C 5201-1 4.5 Load voltage : A Measuring method : measure upper termination by 4 proves. 
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : +25 / –55 / +25 / +125°C
Overload	± (2.0%+0.005Ω)	JIS C 5201-1 4.13 Rated voltage (current) ×2.5, 2s.
Solderability	A new uniform coating of minimum of 95% of the surface being immersed and no soldering damage.	JIS C 5201-1 4.17 Rosin-Ethanol (25%WT) Soldering condition : 235±5°C Duration of immersion : 2.0±0.5s.
Resistance to soldering heat	± (1.0%+0.005Ω) No remarkable abnormality on the appearance.	JIS C 5201-1 4.18 Soldering condition : 260±5°C Duration of immersion : 10±1s.
Rapid change of temperature	± (1.0%+0.005Ω)	JIS C 5201-1 4.19 Test temp. : –55°C to +125°C 5cyc
Damp heat, steady state	± (3.0%+0.005Ω)	JIS C 5201-1 4.24 40°C, 93%RH Test time : 56days
Endurance at 70°C	± (3.0%+0.005Ω)	JIS C 5201-1 4.25.1 70°C, Rated voltage 1.5h : ON – 0.5h : OFF Test time : 1,000h
Endurance	± (3.0%+0.005Ω)	JIS C 5201-1 4.25.3 155°C Test time : 1,000h to 1,048h
Component solvent resistance	± (0.5%+0.005Ω)	JIS C 5201-1 4.29 23°C±5°C Solvent : 2-propanol
Bend strength of the end face plating	Without open.	JIS C 5201-1 4.33

●Dimensions (Unit : mm)

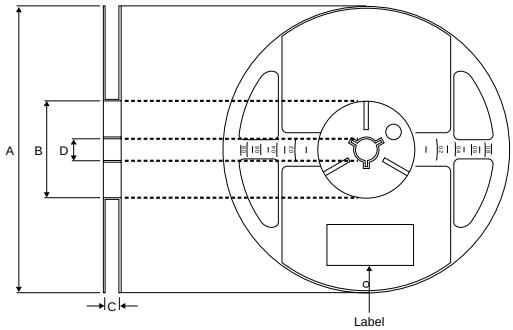




No.	Material
①	Resistive element (Oxide metal thick film)
②	Silver thick film electrode
③	Nickel electrode
④	Sn electrode
⑤	Alumina substrate
⑥	Overcoating (Glass)

●Packaging

Reel

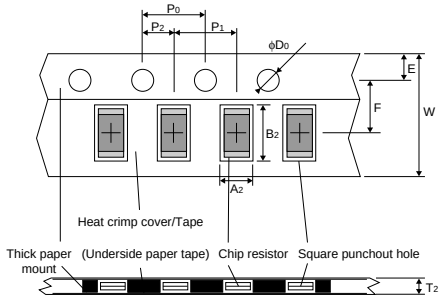


EIAJ ET-7200B compliant

(Unit: mm)

A	B	C	D
$\phi 180^{\ 0}_{-1.5}$	$\phi 60^{\ +1}_{\ 0}$	$9^{\ +1.0}_{\ 0}$	$\phi 13 \pm 0.2$

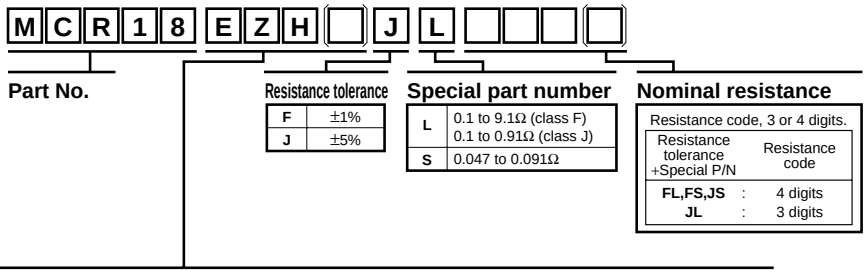
Taping



(Unit: mm)

W	F	E	A2	B2
8.0±0.3	3.5±0.05	1.75±0.1	$1.95^{\ +0.1}_{-0.05}$	$3.5^{\ +0.15}_{-0.05}$
D0	P0	P1	P2	T2
$\phi 1.5^{\ +0.1}_{\ 0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max. 1.1

●Part No. Explanation



Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit(pcs)
		J(±5%)	F(±1%)			
MCR18	EZH	◎	◎	Paper tape (4mm Pitch)	ϕ180mm (7inch)	5,000

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

Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).
Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.
It is our top priority to supply products with the utmost quality and reliability. However, there is always a chance of failure due to unexpected factors. Therefore, please take into account the derating characteristics and allow for sufficient safety features, such as extra margin, anti-flammability, and fail-safe measures when designing in order to prevent possible accidents that may result in bodily harm or fire caused by component failure. ROHM cannot be held responsible for any damages arising from the use of the products under conditions out of the range of the specifications or due to non-compliance with the NOTES specified in this catalog.

Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact your nearest sales office.

ROHM Customer Support System **THE AMERICAS / EUROPE / ASIA / JAPAN**

www.rohm.com **Contact us** : webmaster@rohm.co.jp

ROHM CO., LTD. 21 Saiin Mizosaki-cho, Ukyo-ku, Kyoto 615-8585, Japan
TEL : +81-75-311-2121
FAX : +81-75-315-0172