

High Power Low Ohmic Chip Resistors<Wide Terminal type>

LTR10 (2012 size : 1 / 2W)

●Features

- 1) Improved welding strength
The structure of longer electrodes provides the wider welding area than the chip resistors with normal electrodes, and this enhanced the solder welding strength.
- 2) Increased surge-resistance
This is achieved by Rohm's original trimming technology plus resistive element patterning.
- 3) High-power tolerance
Two times of the rated power is guaranteed than the normal-electrode resistors.
- 4) ROHM resistors are ISO-9001 & ISO/TS16949 certified.
Design and specifications are subject to change without notice. Carefully check the specification sheet before using or ordering it.

●Applications

Automotive, industrial and power supply.

●Ratings

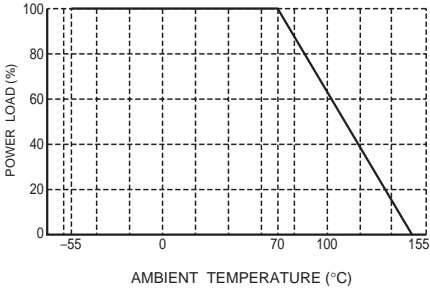
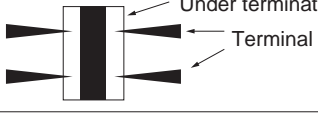
Item	Conditions	Specifications
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  Fig.1	0.5W (1 / 2W) at 70°C
Rated voltage Rated current	The voltage rating is calculated by the following equation. $E = \sqrt{P \times R}$ $I = \sqrt{P / R}$ E : Rated voltage (V) I : Rated current (A) P : Rated power (W) R : Nominal resistance (Ω)	
Nominal resistance	See Table 1.	
Operating temperature		-55°C to + 155°C

Table 1

Resistance range (Ω)	Resistance tolerance	Special part number	Resistance temperature coefficient (ppm/°C)
0.047 to 9.1	F (±1%)	S	±150
	J (±5%)	L	

●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	Test conditions (JIS C 5201-1)
	Resistor type	
Resistance	F : $\pm 1\%$ J : $\pm 5\%$	JIS C 5201-1 4.5 Voltage : A Measuring method : Measure under termination by 4 probes 
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : $-55 / +25 / +125^{\circ}\text{C}$
Overload	$\pm (2.0\%+0.1\Omega)$	JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5, 2\text{s}$.
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 : $235\pm 5^{\circ}\text{C}$ Duration of immersion : $2.0\pm 0.5\text{s}$.
Resistance to soldering heat	$\pm (1.0\%+0.005\Omega)$ No remarkable abnormality on the appearance.	JIS C 5201-1 4.18 Soldering condition : $260\pm 5^{\circ}\text{C}$ Duration of immersion : $10\pm 1\text{s}$.
Rapid change of temperature	$\pm (1.0\%+0.005\Omega)$	JIS C 5201-1 4.19 Test temp. : -55°C to $+125^{\circ}\text{C}$ 5cyc
Damp heat, steady state	$\pm (3.0\%+0.005\Omega)$	JIS C 5201-1 4.24 $40^{\circ}\text{C}, 93\%\text{RH}$ Test time : 1,000h to 1,048h
Endurance at 70°C	$\pm (3.0\%+0.005\Omega)$	JIS C 5201-1 4.25.1 Rated voltage (current), 70°C 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h
Endurance	$\pm (3.0\%+0.005\Omega)$	JIS C 5201-1 4.25.3 155°C Test time : 1,000h to 1,048h
Resistance to solvent	$\pm (0.5\%+0.005\Omega)$	JIS C 5201-1 4.29 $23\pm 5^{\circ}\text{C}$, Immersion cleaning, $5\pm 0.5\text{min}$. 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
②	Silver thick film electrode
③	Silver thick film side electrode
④	Nickel electrode
⑤	Sn electrode
⑥	Overcoating
⑦	Alumina substrate

Size code	L	W	t	a	b
2012(0805)	1.2 ± 0.1	2.0 ± 0.1	0.55 ± 0.1	0.3 ± 0.2	0.35 ± 0.2

●Packaging

Reel	Taping																												
<p style="text-align: center;">Label EIAJ ET-7200B compliant</p> <p style="text-align: right;">(Unit: mm)</p> <table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>$\phi 180 \begin{smallmatrix} 0 \\ -1.5 \end{smallmatrix}$</td> <td>$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$</td> <td>$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$</td> <td>$\phi 13 \pm 0.2$</td> </tr> </tbody> </table>	A	B	C	D	$\phi 180 \begin{smallmatrix} 0 \\ -1.5 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$	$\phi 13 \pm 0.2$	<p style="text-align: right;">(Unit: mm)</p> <table border="1"> <thead> <tr> <th>W</th> <th>F</th> <th>E</th> <th>A0</th> <th>B0</th> </tr> </thead> <tbody> <tr> <td>8.0 ± 0.3</td> <td>3.5 ± 0.05</td> <td>1.75 ± 0.1</td> <td>1.65 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$</td> <td>2.4 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$</td> </tr> <tr> <th>D0</th> <th>P0</th> <th>P1</th> <th>P2</th> <th>T2</th> </tr> <tr> <td>$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$</td> <td>4.0 ± 0.1</td> <td>4.0 ± 0.1</td> <td>2.0 ± 0.05</td> <td>Max. 1.1</td> </tr> </tbody> </table>	W	F	E	A0	B0	8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	1.65 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$	2.4 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$	D0	P0	P1	P2	T2	$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	Max. 1.1
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●Part No. Explanation

L	T	R	1	0	E	V	H	J	S				
Part No.					Resistance tolerance		Special part number			Nominal resistance			
					F	±1%	S			Resistance code, 3 or 4 digits.			
					J	±5%	L			Resistance tolerance Resistance code			
								FS, FL, JS : 4 digits					
								JL : 3 digits					

Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit (pcs)
		F(±1%)	J(±5%)			
LTR10	EVH	◎	◎	Paper tape (4mm Pitch)	φ180mm (7inch)	5,000

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

Notes

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