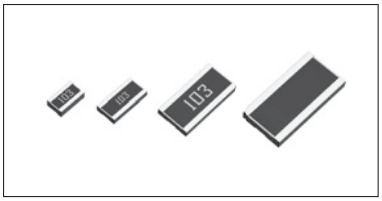
High Power Chip Resistors < Wide Terminal type >

LTR Series

Datasheet

●Features

1) High joint reliability with long side terminations.
2) Highest power ratings in their class.
3) Guaranteed anti-surge characteristic in all series.
4) ROHM resistors have obtained ISO9001 / ISO / TS16949 certification.
5) Corresponds to AEC-Q200.



●Products List

Part No.	Size (mm)	Size (inch)	Rated Power (70˚C) (W)	Limiting Element Voltage (V)	Maximum Overload Voltage (V)	Temperature Coefficient (ppm / ℃)	Resistance Tolerance (%)	Resistance Range	Series	Operating Temperature Range (℃)
LTR10	2012	0805	0.25	150	300	±200	J(±5%)	1Ω to 1MΩ	E24 E96∗	–55 to +155
						±100	F(±1%)			
						±100	D(±0.5%)	10Ω to 1MΩ		
LTR18	3216	1206	0.75	200	400	±200	J(±5%)	1Ω to 1MΩ		
						±100	F(±1%)			
						±100	D(±0.5%)	10Ω to 1MΩ		
LTR50	5025	2010	1	200	400	±200	J(±5%)	1Ω to 1MΩ		
						±100	F(±1%)			
						±100	D(±0.5%)	10Ω to 1MΩ		
LTR100	6432	2512	2	200	400	±200	J(±5%)	1Ω to 1MΩ		
						±100	F(±1%)			
						±100	D(±0.5%)	10Ω to 1MΩ		

∗E24 : Standard products, E96 : Custom products. (Class J is E24 series only)
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

L T R | 1 8 | E Z P | J | 1 0 5

Part No.
LTR
(High Power Chip Resistors / Wide Terminal type)

Size (mm [inch])
10 (2012 [0805])
18 (3216 [1206])
50 (5025 [2010])
100 (6432 [2512])

Packaging Specifications Code

Part No.	Code	Packaging specifications	Quantity / Reel
LTR10	EZP	Paper tape (4mm Pitch)	5,000
LTR18	EZP	Paper tape (4mm Pitch)	5,000
LTR50	UZP	Embossed tape (4mm Pitch)	5,000
LTR100	JZP	Embossed tape (4mm Pitch)	4,000

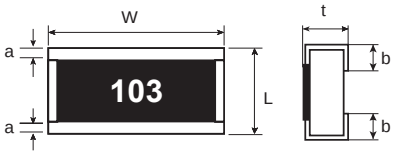
Resistance Tolerance
D (±0.5%)
F (±1%)
J (±5%)

Nominal Resistance
Resistance code, 3 or 4 digits.
000 denotes jumper type.

Resistance tolerance		Resistance code
D,F	:	4 digits
J	:	3 digits

Ex.)
1Ω = 1R00 (±1%)
1R0 (±5%)
9.1Ω = 9R10 (±1%)
9R1 (±5%)
10Ω = 10R0 (±1%, ±0.5%)
100 (±5%)
1MΩ = 1004 (±1%, ±0.5%)
105 (±5%)

●Chip Resistor Dimensions and Markings

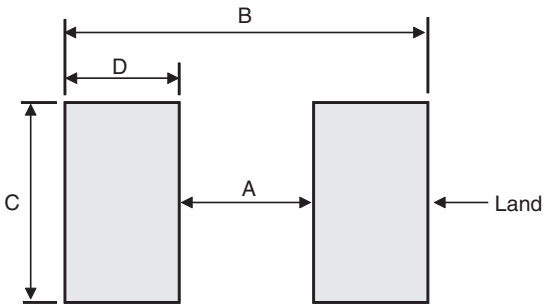


<Marking method>
There are three or four digits used for the calculation number according to IEC code and “R”is used for the decimal point.

(Unit : mm)

Part No.	(mm)	(inch)	L	W	t	a	b	Marking existence
LTR10	2012	0805	1.2±0.1	2.0±0.1	0.55±0.1	0.2±0.1	0.35±0.2	Yes
LTR18	3216	1206	1.6±0.15	3.2±0.15	0.55±0.1	0.3±0.2	0.5±0.2	Yes
LTR50	5025	2010	2.5±0.15	5.0±0.15	0.55±0.1	0.38±0.2	0.9±0.2	Yes
LTR100	6432	2512	3.2±0.15	6.4±0.15	0.55±0.15	0.4±0.25	1.13±0.25	No

●Land pattern Example



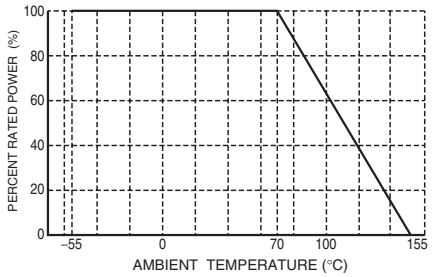
(Unit : mm)

Dimensions / Part No.	A	B	C	D
LTR10	0.50	2.70	2.00	1.10
LTR18	0.60	2.90	3.20	1.15
LTR50	0.75	3.35	5.00	1.30
LTR100	0.83	3.69	6.40	1.43

●Derating Curve

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

■ LTR10 / 18 / 50 / 100



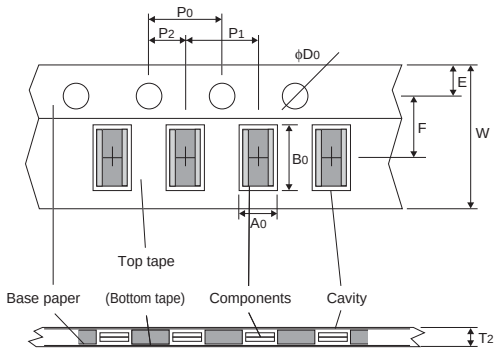
●Characteristics

Test Items	Guaranteed Value Resistor 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)	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.	Soldering condition : 260±5°C Duration of immersion : 10±1s
Rapid change of temperature	± (1.0%+0.05Ω)	Test temp. : –55°C to +125°C 5cycle
Damp heat, steady state	± (3.0%+0.1Ω)	40°C, 93%RH (Relative Humidity) Test time : 1,000h to 1,048h
Endurance at 70°C	± (3.0%+0.1Ω)	70°C Rated voltage (current) 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h
Endurance	± (3.0%+0.1Ω)	155°C Test time : 1,000h to 1,048h
Resistance to solvent	± (1.0%+0.05Ω)	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.	–
Static electric characteristics	± (5.0%+0.05Ω)	EIAJ ED-4701 / 300 TEST METHOD304 Voltage : 3kV C : 100pF R : 1.5kΩ Apply cycle : 1time

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

●Tape Dimensions

■ Paper Tape

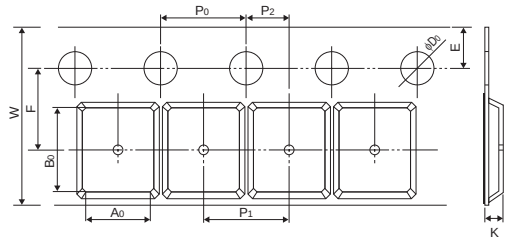


(Unit : mm)

Part No.	W	F	E	A0	B0
LTR10	8.0±0.3	3.5±0.05	1.75±0.1	1.45±0.1	2.3±0.1
LTR18	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
LTR10	$\phi 1.5^{+0.1}_{0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
LTR18	$\phi 1.5^{+0.1}_{0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1

■ Embossed Tape

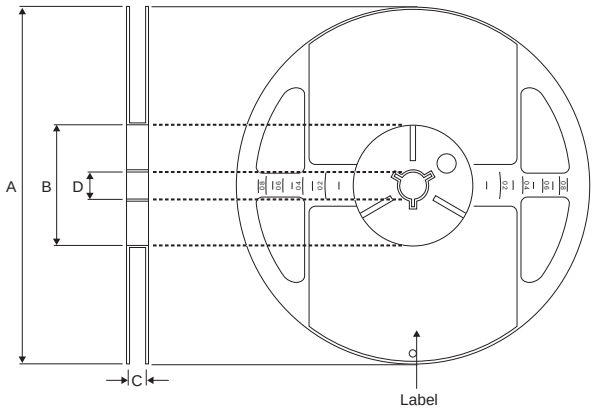


(Unit : mm)

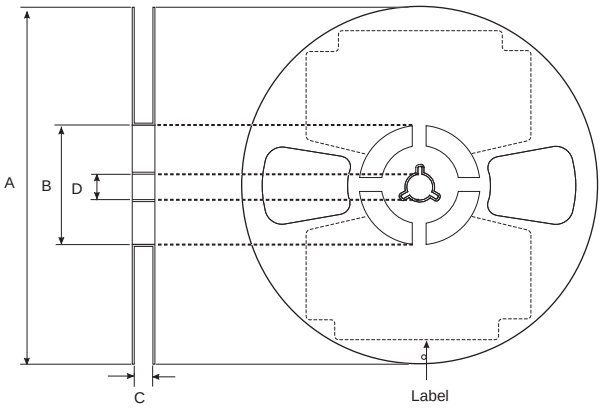
Part No.	W	F	E	A0	B0
LTR50	12.0±0.3	5.5±0.05	1.75±0.1	3.4±0.2	5.6±0.2
LTR100	12.0±0.3	5.5±0.05	1.75±0.1	3.5±0.2	6.7±0.2

Part No.	D0	P0	P1	P2	T2
LTR50	$\phi 1.5^{+0.1}_{0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
LTR100	$\phi 1.5^{+0.1}_{0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1

●Reel Dimensions



ACCORDING TO EIAJ ET-7200B



ACCORDING TO EIAJ ET-7200B (RRV)

(Unit : mm)

Part No.	A	B	C	D
LTR10	$\phi 180^{0}_{-1.5}$	$\phi 60^{+1.0}_{0}$	$9^{+1.0}_{0}$	ϕ13±0.2
LTR18				
LTR50			$13^{+1.0}_{0}$	
LTR100				

Notes

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

2) 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.

5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.

6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.

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.

9) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.

10) ROHM shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.

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