

# LVR Series

## Low-TCR Current Sense Chips



The resistors are constructed using outstanding TCR level material, which makes LVR resistors excellent for current sensing application in battery charger circuit & DC-DC converter. The composition of the resistive material is adjusted to give the LVR series resistors more resistive stability than the competition in very small package sizes.

### APPLICATIONS

- Consumer goods
- Computer
- Telecom / Datacom
- Industrial / Power supply
- Alternative Energy
- Car electronics
- Battery



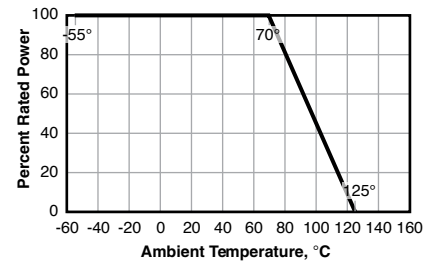
### SERIES SPECIFICATIONS

Series	Size	Power Rating	Resistance Range	TCR (ppm/°C)	Tolerance
LVR02A	0201	0.1W	5mΩ - 10mΩ	150ppm/°C	1%, 5%
LVR04A	0402	0.125W	2.5mΩ 5mΩ - 20mΩ	±350 ppm/°C ±150 ppm/°C	1%, 5%

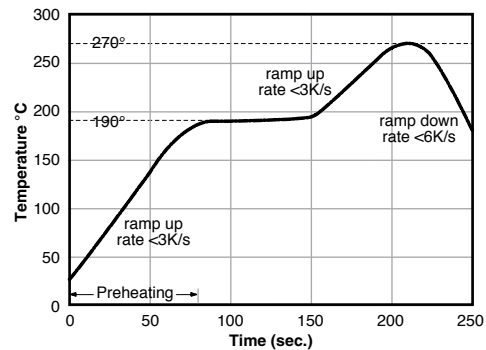
### CHARACTERISTICS

<b>Operating Temp. Range</b>	-55°C to +125°C		
<b>Power Rating</b>	Standard rated power at 70°C; see chart above		
<b>Rated Voltage</b>	The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula: $V = \sqrt{P \times R}$ or max. working voltage whichever is less, where: V = Cont. rated DC or AC (rms) working voltage (V) P = Rated power (W) R = Resistance value (Ω)		
<b>Temperature Coeff. of Resistance</b>	Size	Resistance range	TCR
	0201	5mΩ - 10mΩ	±150 ppm/°C
	0402	2.5mΩ 5mΩ - 20mΩ	±350 ppm/°C ±150 ppm/°C
<b>Terminations</b>	Cu, Ni, matte Tin		

#### Derating



#### Reflow Soldering Conditions



# LVR Series

## Low-TCR Current Sense Chips

### PERFORMANCE DATA

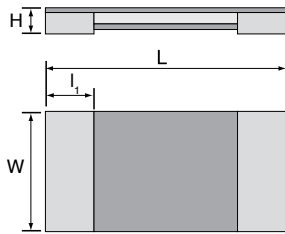
Test	Method	Procedure	Requirements
<b>Short time overload</b>	IEC60115-1 4.13	2.5 times of rated power for 5 seconds at room temperature	$\pm(1\%+0.0005\Omega)$ No visible damage
<b>High Temperature Exposure</b>	MIL-STD-202-Method 108	1,000 hours at maximum operating temperature depending on specification, unpowered. No direct impingement of forced air to the parts Tolerances: $125\pm 5^\circ\text{C}$	$\pm(1.0\%+0.0005\Omega)$
<b>Moisture Resistance</b>	MIL-STD-202-Method 106	Each temperature / humidity cycle is defined at 8 hours (method 106F), 3 cycles / 24 hours for 10d with $25^\circ\text{C} / 65^\circ\text{C}$ 95% R.H, without steps 7a & 7b, unpowered	$\pm(0.5\%+0.0005\Omega)$
<b>Operational Life/Endurance</b>	MIL-STD-202 Method 108 IEC 60115-1 4.25.1	1,000 hours at $70\pm 2^\circ\text{C}$ applied RCWV. 1.5 hours on, 0.5 hour off, still air required	$\pm(1.0\%+0.0005\Omega)$
<b>Solderability - Wetting</b>	J-STD-002 test B	Electrical Test not required. Magnification 50X. SMD conditions: 1st step : method B, aging 4 hours at $155^\circ\text{C}$ dry heat; 2nd step: leadfree solder bath at $245\pm 3^\circ\text{C}$ ; Dipping time: $3\pm 0.5$ seconds	Well tinned (>95% covered) No visible damage
<b>Moisture Resistance</b>	MIL-STD-202 Method 106	Each temperature / humidity cycle is defined at 8 hours (Method 106G), 3 cycles / 24 hours for 10d. with $25^\circ\text{C} / 65^\circ\text{C}$ 95% R.H, without steps 7a & 7b, un-powered Parts mounted on test board, without condensation on parts. Measurement at $24\pm 2$ hours after test conclusion.	$\pm(0.5\% + 0.0005\Omega)$ No visible damage
<b>Thermal Shock</b>	MIL-STD-202 Method 107	$-55/+125^\circ\text{C}$ . Number of cycles required is 300. Parts mounted on test board. Maximum transfer time is 20 seconds. Dwell time is 15 minutes.	$\pm(1.0\% + 0.0005\Omega)$
<b>Board Flex/Bending</b>	IEC 60115-1 4.33	Device mounted on PCB test board as described, only 1 board bending required. 2 mm bending. Bending time: $60\pm 1$ seconds. Ohmic value checked during bending	$\pm(1.0\% + 0.0005\Omega)$
<b>Resistance to Soldering Heat</b>	MIL-STD-202 Method 210 IEC 60115-1 4.18	Condition B, no pre-heat of samples. Leadfree solder, $260\pm 5^\circ\text{C}$ , $10\pm 1$ seconds immersion time. Procedure 2 for SMD: devices fluxed and cleaned with isopropanol	$\pm(0.5\% + 0.0005\Omega)$ No visible damage

# LVR Series

## Low-TCR Current Sense Chips

### DIMENSIONS

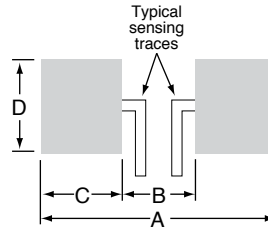
(mm)



Size	Res. Range	L	W	H	l1
0201	5mΩ - 10mΩ	0.60 ±0.03	0.31 ±0.04	0.30 ±0.05	0.15 ±0.06
0402	2.5mΩ	1.00 ±0.10	0.55 ±0.10	0.30 ±0.10	0.25 ±0.10
	5mΩ ≤ R ≤ 10mΩ	1.00 ±0.10	0.55 ±0.10	Max. 0.30	0.25 ±0.10
	12mΩ ≤ R ≤ 20mΩ	1.00 ±0.10	0.55 ±0.10	Max. 0.40	0.25 ±0.10

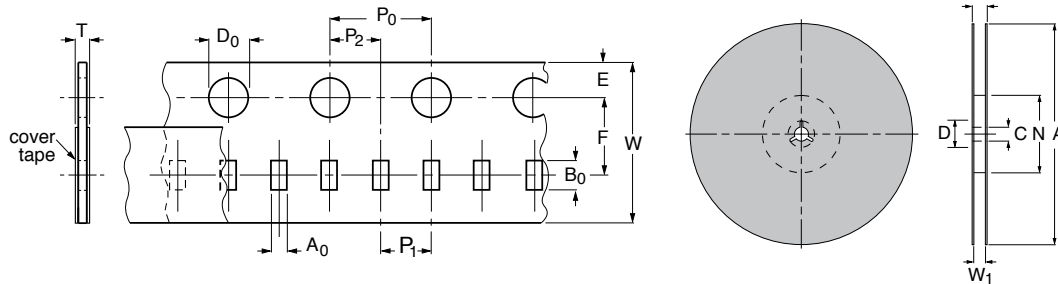
### Reflow Soldering footprint

Size	A	B	C	D
0201	1.0	0.3	0.35	0.4
0402	2.0	0.4	0.8	0.6



### TAPE AND REEL

(mm)



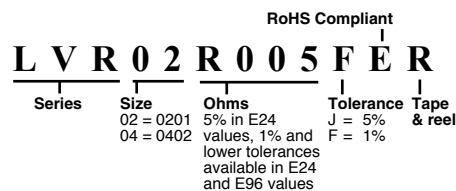
### Paper/PE tape

Size	A0	B0	W	E	F	P0	P1	P2	ØD0	T	Qty. per reel (178mm)
0201	0.35 ±0.10	0.65 ±0.10	8.0 ±0.20	1.75 ±0.10	3.5 ±0.05	4.0 ±0.10	2.0 ±0.05	2.0 ±0.05	1.5 +0.1/-0	0.35 ±0.10*	10,000
0402	0.59 ±0.10	1.10 ±0.10	8.00 ±0.10	1.75 ±0.10	3.50 ±0.10	4.00 ±0.10	4.00 ±0.10	2.00 ±0.10	1.55 ±0.05	0.48 ±0.03	10,000

### Reel dimensions

Qty./reel	8mm tape	A	N	C	D	W1	W2 max.
10,000	7" (Ø178mm)	178.0 ±1.0	60.0 +1/-0	13.50 ±0.5	21.0 ±0.8	9.0 ±0.5	12.0 ±0.2

### ORDERING INFORMATION



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Current Sense Resistors - SMD category](#):*

*Click to view products by [Ohmite manufacturer](#):*

Other Similar products are found below :

[5112](#) [65709-330JE](#) [PF2512FKF7W0R007L](#) [PR2512FKF7W0R003L](#) [PR2512FKF7W0R005L](#) [RCWL0603R500JNEA](#) [ERJ-3BQF1R1V](#) [ERJ-L14UJ42MU](#) [2-2176088-5](#) [PF2512FKF7W0R006L](#) [PF2512FKF7W0R033L](#) [2-2176089-4](#) [CD2015FC-0.10-1%](#) [PR2512FKF7W0R004L](#) [CGSSL1R01J](#) [CGSSL1R047J](#) [RC1005F124CS](#) [RCWE2512R110FKEA](#) [RCWL0805R330JNEA](#) [RL73H3AR47FTE](#) [RL73K3AR56JTDF](#) [RL7520WT-R001-F](#) [RL7520WT-R009-G](#) [RL7520WT-R020-F](#) [RLP73N1ER43JTD](#) [TL3AR01FTDG](#) [TLR3A20DR0005FTDG](#) [LRC-LR2512LF-01-R820J](#) [ERJ-3BQF4R3V](#) [ERJ-L14UF68MU](#) [TLR3A20DR001FTDG](#) [TLR3A30ER0005FTDG](#) [WR06X104JGLJ](#) [RLP73K1ER82JTD](#) [TL2BR01F](#) [TLR3A20DR01FTDG](#) [WSR3R0600FEA32](#) [ERJ-14BQF1R6U](#) [ERJ-14BQJR30U](#) [SP1220RJT](#) [SP1R12J](#) [ERJ-14BQF6R2U](#) [RL7520WT-R039-G](#) [PF1206FRF7W0R02L](#) [RL7520WT-R002-F](#) [RL7520WT-R047-F](#) [RLP73N2BR068FTDF](#) [RL7520WT-R005-F](#) [RCWE2512R220FKEA](#) [RCWE120625L0FMEA](#)