CSLA

Automotive grade current sense resistor long electrode- metal foil

Product features

- AEC-Q200
- Resistance value from 1 mΩ to 25 mΩ
- Low thermal EMF
- Low TCR
- 1206 (3216 metric) package
- Moisture sensitivity level (MSL): 1

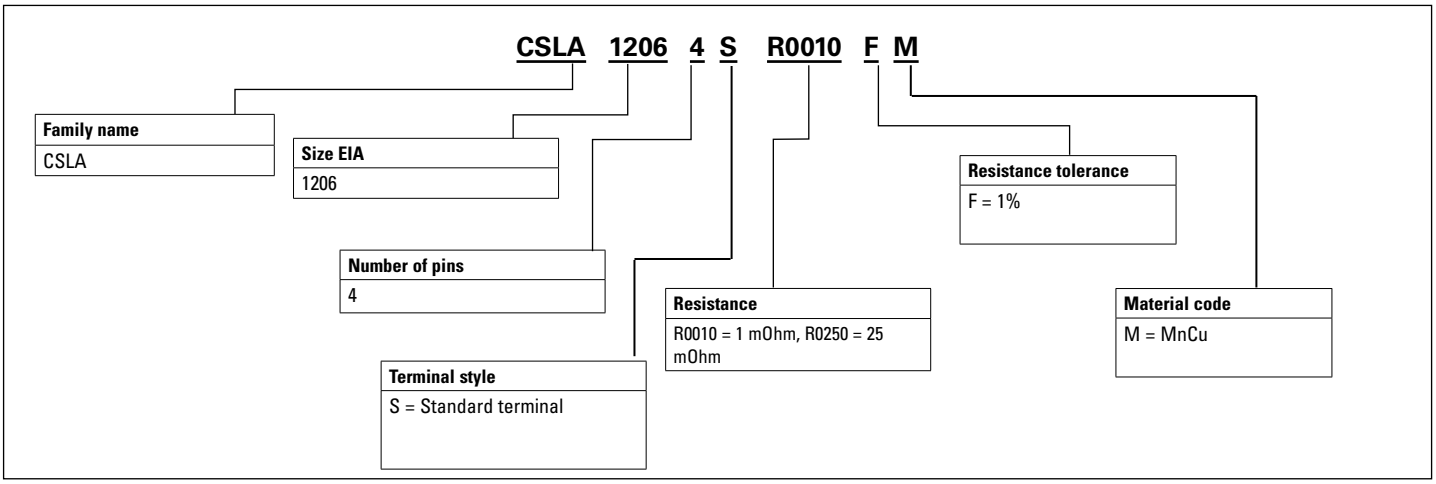
Applications

- Automotive lighting
- Server
- Battery management
- Hot swap controllers
- Body control modules
- DC/DC converters
- Switched-mode power supplies (SMPS)
- DC Motor control
- IoT devices
- Electric water pump
- Active braking

Environmental compliance

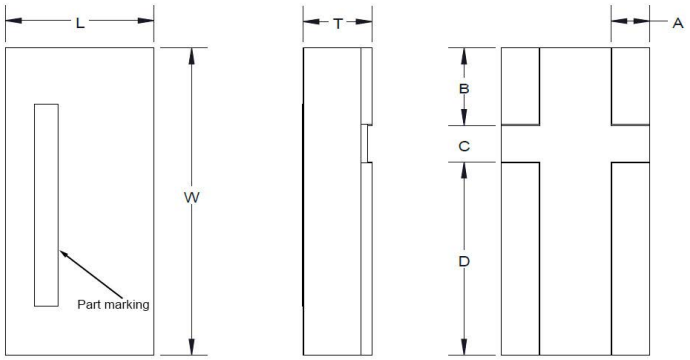
Pb HALOGEN HF FREE RoHS

Table 1. Part numbering

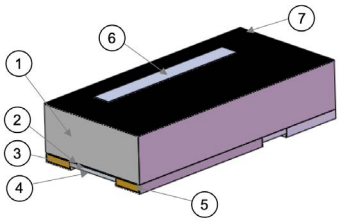


Powering Business Worldwide

Mechanical parameters- mm



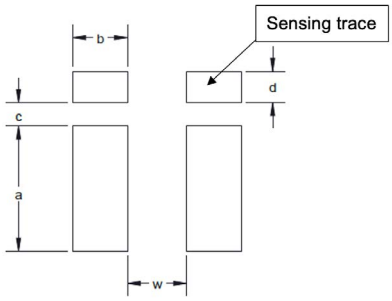
Construction



Number	Materials
1	Alumina ceramic
2	Epoxy
3	Cu-alloy
4	Protective coating
5	Terminal electrode copper - nickel - matte tin
6	Marking
7	Coating

Family	Size code	W	L	A	B	C	D	T
CSLA1206	1206 (3216 metric)	3.20 ± 0.20	1.55 ± 0.20	0.41 ± 0.20	0.46 ± 0.20	0.50 ± 0.20	2.16 ± 0.20	0.50 ± 0.20

Recommended PCB layout- mm



Family	a	b	c	d	w
CSLA1206	2.29	1.014	0.381	0.762	0.762

Electrical specifications

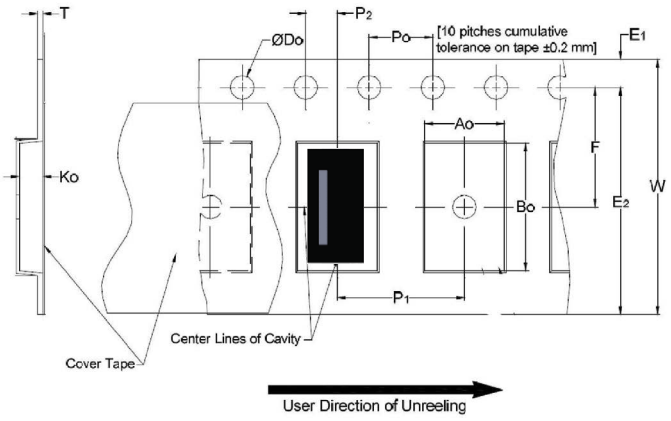
Part number	Size	Power rating @ +125 °C (W)	Resistance[2] (mΩ)	Resistance tolerance	Material	TCR[1] (ppm/°C)	Operating temperature
CSLA12064SR0010FM	1206 (3216 metric)	1	1	±1%	MnCu	±100	-55 °C to +170 °C
CSLA12064SR0020FM	1206 (3216 metric)	1	2	±1%	MnCu	±100	-55 °C to +170 °C
CSLA12064SR0030FM	1206 (3216 metric)	1	3	±1%	MnCu	±100	-55 °C to +170 °C
CSLA12064SR0050FM	1206 (3216 metric)	1	5	±1%	MnCu	±100	-55 °C to +170 °C
CSLA12064SR0100FM	1206 (3216 metric)	1	10	±1%	MnCu	±100	-55 °C to +170 °C
CSLA12064SR0150FM	1206 (3216 metric)	1	15	±1%	MnCu	±100	-55 °C to +170 °C
CSLA12064SR0200FM	1206 (3216 metric)	1	20	±1%	MnCu	±100	-55 °C to +170 °C
CSLA12064SR0250FM	1206 (3216 metric)	1	25	±1%	MnCu	±100	-55 °C to +170 °C

1. Temperature coefficient of resistance (TCR) parameters: +25 °C to +125 °C
2. Resistance should be measured at +23 °C ±5 °C in accordance with the recommended land pattern.

Packaging information- mm

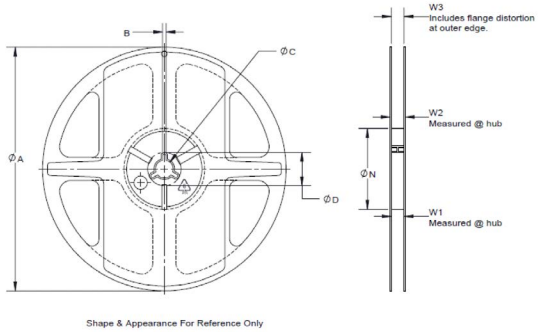
Supplied in tape and reel on a 7.0" diameter reel

Tape carrier and dimensions



Dimension	CSLA
W	8.00 ± 0.30
F	3.50 ± 0.10
E1	1.75 ± 0.10
E2	NA
P0	4.00 ± 0.10
P1	4.00 ± 0.10
P2	2.00 ± 0.05
ØD0	1.50 ± 0.10
A0	1.90 ± 0.20
B0	3.50 ± 0.20
K0	0.85 ± 0.20
T	0.20 ± 0.10

Reel dimensions



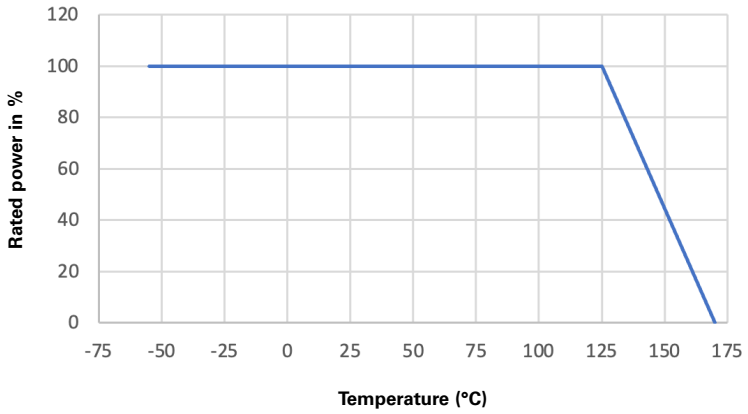
Shape & Appearance For Reference Only

Size	A	B	C	D	N	W1	W2	W3
CSLA1206	178 ± 2.0	2.0 ± 0.5	13.0 ± 1.0	20.2 minimum	58 ± 2.0	9.5 ± 1.0	14.4 maximum	NA

General specifications

Temperature coefficient of resistance: MIL-STD-202, Method 304, TCR =(R-R0)/R0(T2-T1)*106. Test temperature: T1=+25 °C, T2=+125 °C
Short time overload: IEC60115-1 4.13, 2.5 X rated power for 5 s
High temperature storage: MIL-STD202 Method 108, 1000 hours, +170 °C, unpowered
Temperature cycling: JESD22 Method JA-104, 1000 Cycles (-55 °C to +150 °C)
Biased humidity: MIL-STD-202 Method 103, 1000 hours, +85 °C/85% RH, at rated power
Operational life: MIL-STD-202 Method 108, 1000 hours, +125 °C ±2 °C at rated power, 1.5 hours on, 0.5 hours off.
Resistance to solvents: MIL-STD-202 Method 215, Immersed in three solvents after 3 to 3.5 minutes immersion, brush wipe 10 times, a total of 3 times, washing with washing and cleaning agent, room temperature on the surface of the ventilation drying.
Mechanical shock: MIL-STD-202 Method 213, 100 g's. 6 ms, 5 pulses
Vibration: MIL-STD-202 Method 204, 10 Hz to 2000 Hz, 5 g's for 20 min., 12 cycles each of 3 orientations
Resistance to soldering heat: MIL-STD-202 Method 210, Immerse the specimens in and eutectic solder at +260 ± 5 °C for 10 ± 1 s
ESD: AEC-Q200-002 or ISO/DIS 10605, 25 kV
Solderability: J-STD-002, solder bath at 245 ± 5 °C, Dipping time: 3 ± 0.3 seconds, > 95% area covered with tin
Flammability: UL-94, V-0 or V-1 are acceptable. Electrical test not required.
Board flex (bending): AEC-Q200-005, Bending width 2 mm, PCB thickness 1.6 mm, Fulcrums distance 90 mm
Terminal strength: AEC-Q200-006, Force of 17.7 N for 60 seconds

Temperature derating curve



Rated current & voltage

The rated Current and Voltage are calculated by the following formula:

$I=\sqrt{P \div R}$

I: Rated current (A)

P: Rated power (W)

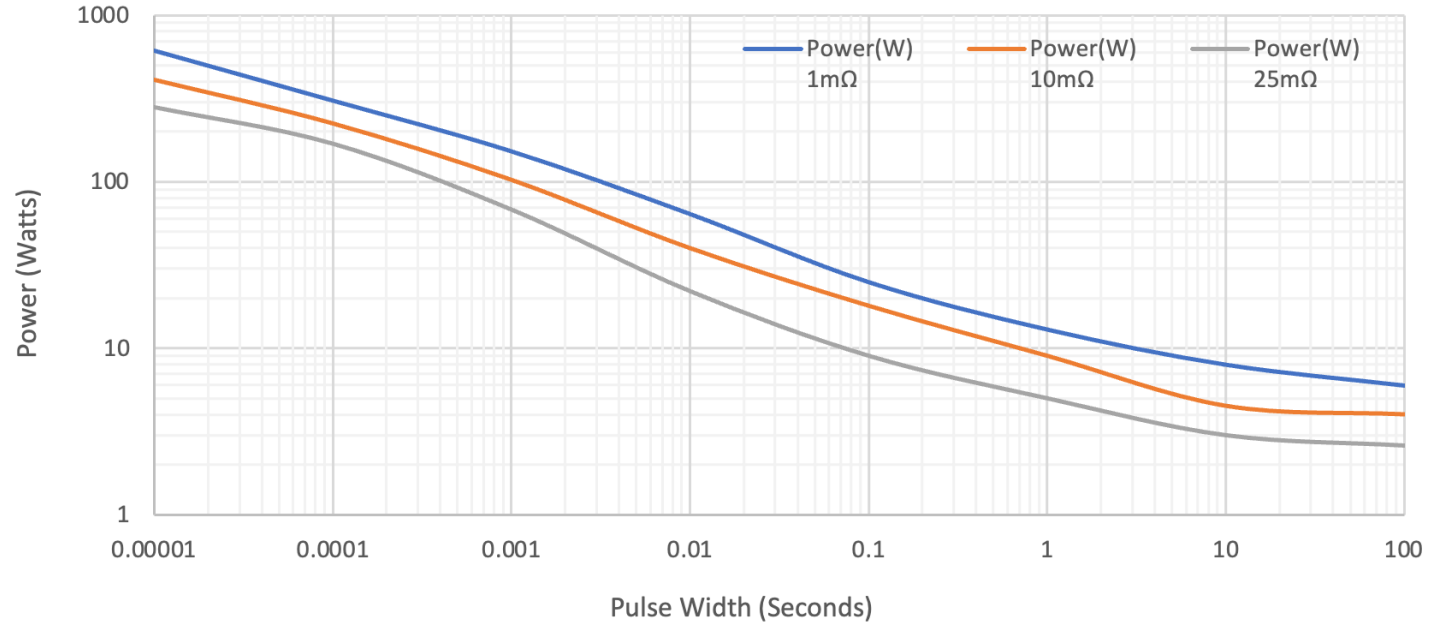
$V=\sqrt{P \times R}$

V: Rated voltage (V)

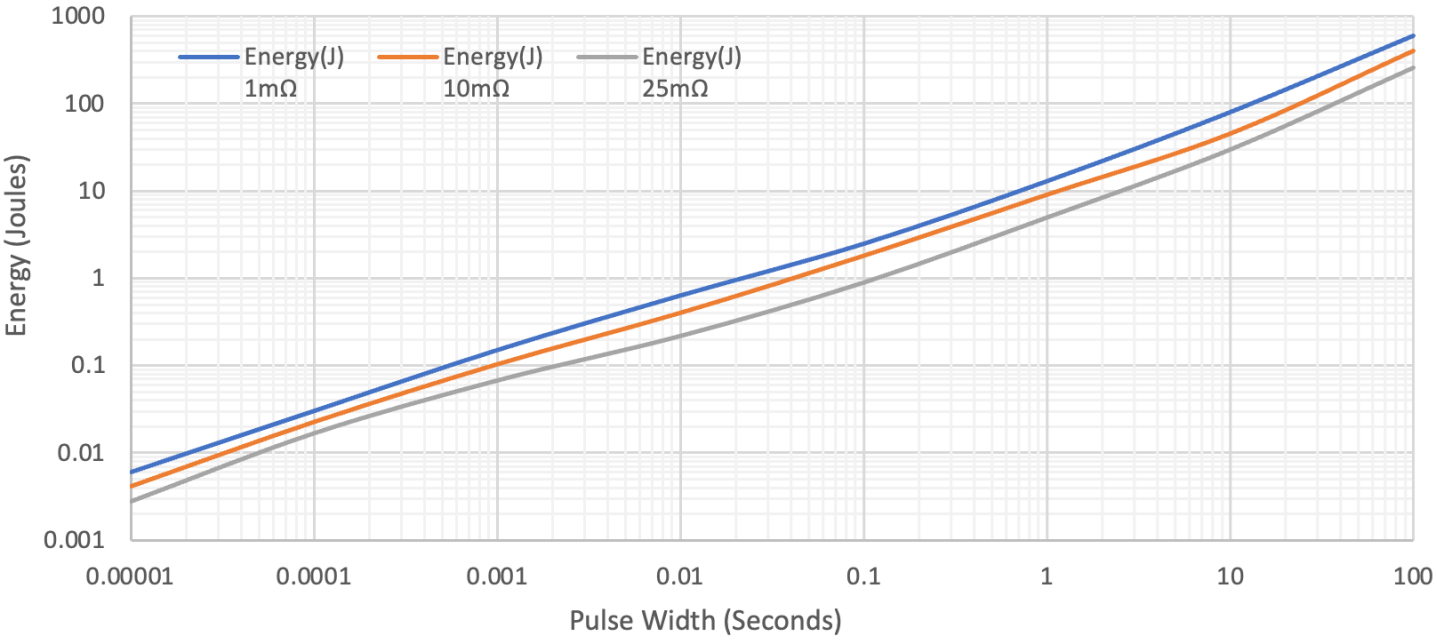
R: Resistance value (Ω)

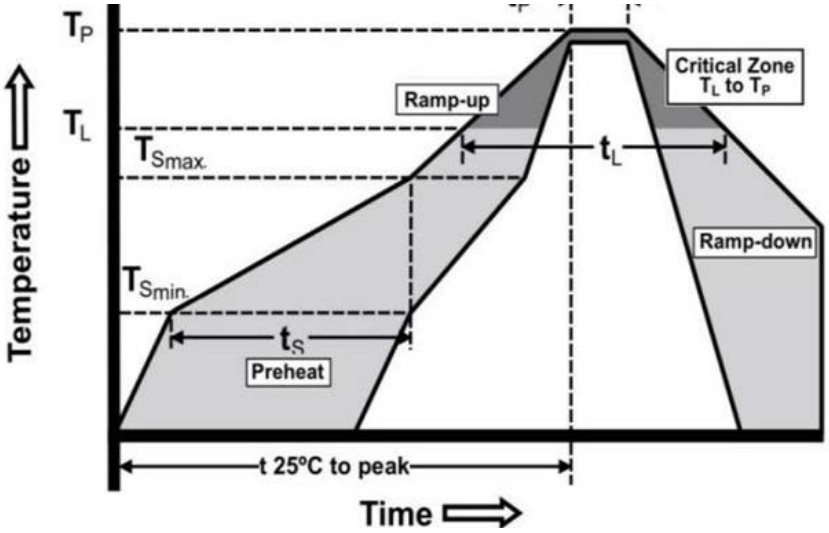
Curves

Maximum pulse power



Maximum pulse energy





Profile feature		Lead (Pb) free solder
Preheat and soak	• Temperature min. (T_{smin})	150 °C
	• Temperature max. (T_{smax})	200 °C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds
Ramp up rate T_{smax} to T_p		3 °C/ second max.
Melting tin time (tL)		20 s - 30 s
Peak package body temperature (T_P)*		260 °C
Time (t_p)* within 5 °C of the specified classification temperature (T_c)		5 seconds
Ramp-down rate (T_p to T_L)		6 °C/ second max.
Time 25 °C to peak temperature		8 minutes max.

Manual solder

+350 °C ±10 °C , 5 seconds maximum (by soldering iron), generally manual, hand soldering is not recommended

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