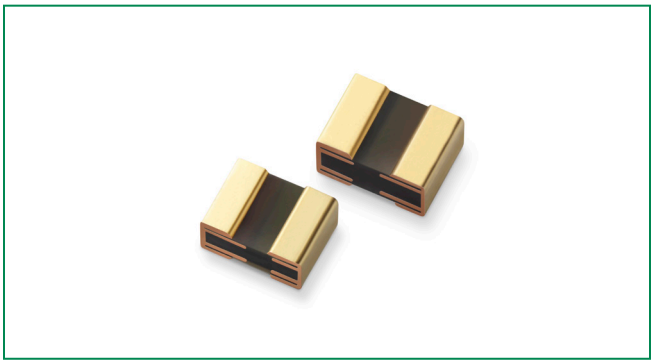
PPTC zeptoSMDC Series

HF RoHS



Description

Littelfuse zeptoSMDC Series PPTC is developed for overcurrent and overtemperature protection at low-cost in mobile application components. It works as a 'fail-safe' to protect battery management ICs and fuel gauges.

Features

- Maximum electrical rating: 13 VDC
- Short circuit current: 82~200mA
- Small footprint 0201 size
- RoHS compliant
- ISO/TS 16949 certified

Applications

- Mobile phone
- Wearable device
- Lithium battery management

Benefits

- Resettable
- Save space in PCBs due to small footprint

Electrical Characteristics

Part Number	Initial Resistance Ohms @ 25°C		V_{MAX} [2] (Vdc)	I_{MAX} [3] (mA)	Trip Temperature °C TYP	Hold Current [4] (mA) @ 25°C	Time to Trip [5]		Post Process Resistance [6]	
	Min [1]	Max					Current (mA)	Time (ms) Max	ohms @ -20°C Min	ohms @ 60°C Max
zeptoSMDC0011F	10	80	13	82	125	11	80	20	68	290
zeptoSMDC0015F	10	60	13	200	125	15	80	20	28	150

Notes:

1. R_{min} = Minimum resistance of device in initial (un-soldered) state
2. V_{max} = Maximum voltage device can withstand without damage at rated current (I_{max})
3. I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max})
4. I_{hold} = Hold current: maximum current device will pass without tripping in 25°C still air. Values specified using PCB's with 0.004" x 1.0 ounce copper traces
5. Time to trip values specified using PCB's with 0.004" x 1.0 ounce copper traces
6. With LOCTITE ECCOBOND UF 3915, curing condition: 140°C/20mins, resistance is measured 12 hours post coating curing process

Environmental Specifications

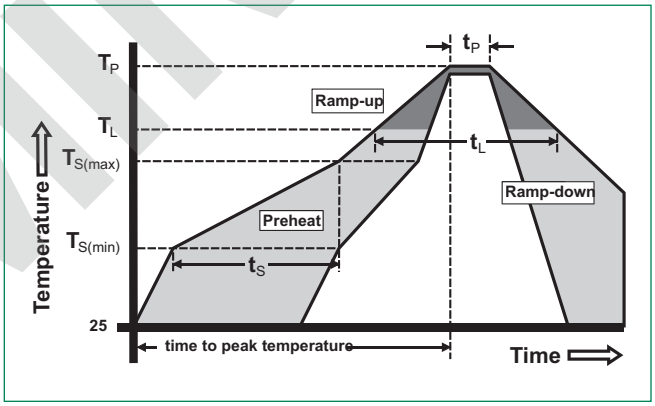
Operating Temperature	-20°C to 60°C
Passive Aging	+85°C, 1000 hours -25% typical resistance change
Humidity Aging	+65°C, 90% R.H.,100 hours -/+15% typical resistance change
Thermal Shock	MIL–STD–202, Method 107G -33% typical resistance change -40°C to +85°C (20 Times)
Vibration	MIL–STD–202, Method 204, Condition A No change
Moisture Sensitivity Level	Level 2a, J–STD–020

Physical Specifications

Terminal Materials	Solder-Plated Copper (Solder Material: NiAu)
Lead Solderability	Meets EIA Specification RS186-9E, ANSI/J- STD-002B, Test S

Soldering Parameters

Profile Feature		Pb-free assembly
Average Ramp-Up Rate (Liquidus Temp (T_L) to peak		1~3°C/second max.
Preheat	**Temperature Min. (Ts_{min})**	130°C
	Temperature Max. (Ts_{max})	180°C
	Time Min. to Max. (Ts)	90-110 seconds
Ts_{max} to T_L Ramp-up Rate		≤2°C/seconds max.
Reflow	**Temperature (T_L) (Liquidus)**	217°C
	Time (t_L)	60~70 seconds
Peak Temperature (T_P)		240°C
Time within 3°C of actual Peak Temperature (t_P)		35 seconds
Ramp-Down Rate		2~4°C/seconds
Time 25°C to Peak Temperature (T_P)		300 seconds max.



- All temperature refer to topside of the package, measured on the package body surface.
- If reflow temperature exceeds the recommended profile, devices may not meet the performance requirements.
- Recommended reflow methods:IR, vapor phase oven, hot air oven.
- Customer should validate that the solder paste amount and reflow recommendations to meet its application
- Recommended maximum paste thickness is 0.25 mm (0.010 inch).
- Devices can be cleaned using standard industry methods and aqueous solvents.
- Devices can be reworked using the standard industry practices (avoid contact to the device).

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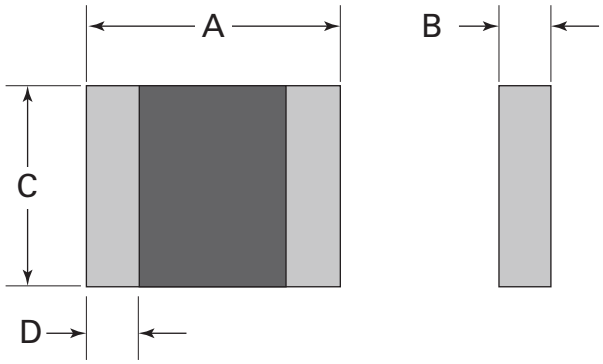
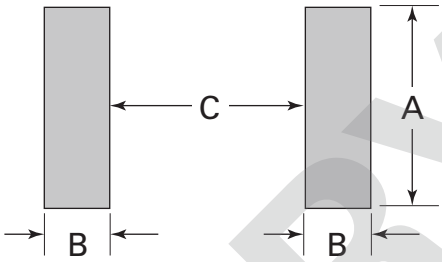
Physical Dimension



Solder Pad Layout

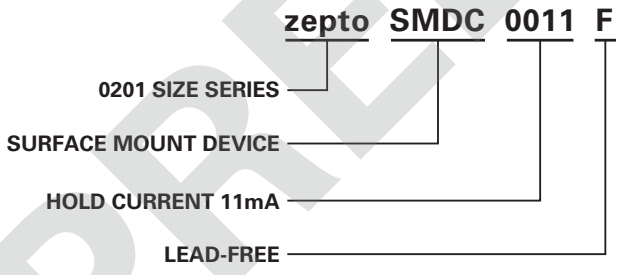


Part Number	A		B		C		D	
	Min	Max	Min	Max	Min	Max	Min	Max
zeptoSMDC0011F	0.55 (0.022)	0.65 (0.026)	---	0.40 (0.016)	0.40 (0.016)	0.50 (0.020)	0.10 (0.004)	0.25 (0.010)
zeptoSMDC0015F	0.55 (0.022)	0.65 (0.026)	---	0.40 (0.016)	0.40 (0.016)	0.50 (0.020)	0.10 (0.004)	0.25 (0.010)

Packaging

Part Number	Ordering	Tape & Reel Quantity	Minimum Orgder Quantity	Recommneded Pad Layout Figures [mm(in)]		
				Dimension A (Nom)	Dimension B (Nom)	Dimension C (Nom)
zeptoSMDC0011F	RF5005-000	15,000	15,000	0.45 (0.0178)	0.325 (0.013)	0.250 (0.010)
zeptoSMDC0015F	RF5006-000	15,000	15,000	0.45 (0.0178)	0.325 (0.013)	0.250 (0.010)

Part Numbering System



Warning

- Electrical performance of the device can differ according to installation conditions. Users should independently evaluate the suitability of the device under the actual application conditions.
- Operation beyond maximum ratings may result in device damage.
- Exposure to silicon-based oils, solvents, electrolytes, acids, or similar materials can adversely affect device performance.
- The device undergoes thermal expansion during fault conditions. It should be provided with adequate space to allow expansion and should be protected against mechanical stress.
- Consult with Littelfuse if the device will experience thermal process other than reflow onto PCB board, such as molding or hand soldering.

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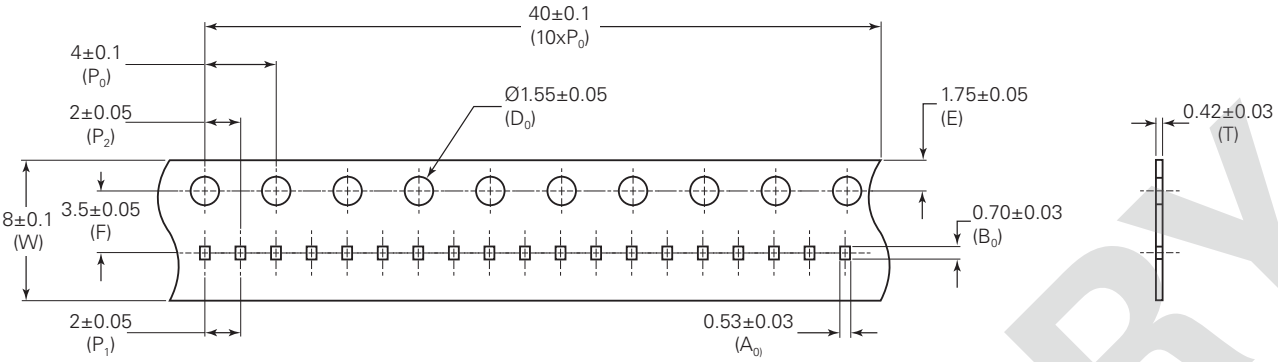
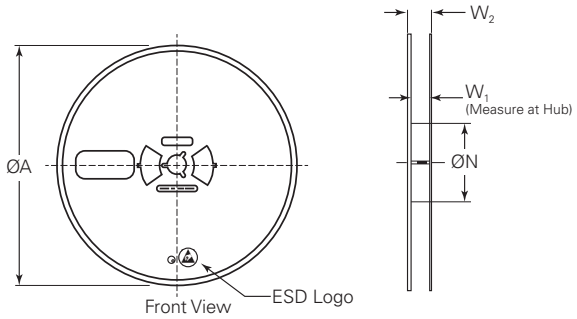
Tape and Reel Specifications





All dimensions in mm	
W	8 ± 0.1
P_0	4 ± 0.1
P_1	2 ± 0.05
P_2	2 ± 0.05
A_0	0.53 ± 0.03
B_0	0.70 ± 0.03
D_0	1.55 ± 0.05
F	3.5 ± 0.05
E	1.75 ± 0.05
T	0.42 ± 0.03
A	178.0 ± 1.0
N	54.0 ± 0.5
W_1	9.5 ± 0.5
$W_{2\ max}$	15.0

Standard Pack Quantity: 15,000 pcs
Minimum Order Quantity: 15,000 pcs

Revised: 05/04/20

单击下面可查看定价，库存，交付和生命周期等信息

>>Littelfuse(美国力特)