

## Surface Mount PTC 0ZCD Series

2920 Chip  
RoHS6 Compliant & Halogen-Free



### Application

All high-density boards

### Product Features

2920 Chip Size, Fast Trip Time, High Hold Currents

### Operating (Hold Current) Range

300mA ~ 3A

### Maximum Voltage

6V ~ 60V (per table)

### Temperature Range

-40°C to 85°C

### Agency Approval

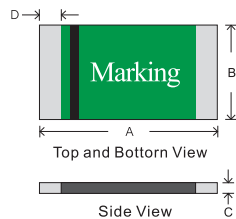
TUV (Std. EN60738-1-1, Cert. R50102117)

UL Component (Std. UL1434, File E305051)

### UL Conditions of Acceptability:

1. These devices have been investigated for use in safety circuits and are suitable as a limiting device.
2. These devices have been calibrated to limit the current to 8 amps within 5 seconds, per ANSI/NFPA 70, "National Electrical Code"

### Product Dimensions



All dimensions in mm.

Part Number	A		B		C		D
	Min	Max	Min	Max	Min	Max	Min
0ZCD0030FF2C	6.73	7.98	4.80	5.44	0.60	1.55	0.35
0ZCD0050FF2C	6.73	7.98	4.80	5.44	0.60	1.55	0.35
0ZCD0075FF2C	6.73	7.98	4.80	5.44	0.40	1.15	0.35
0ZCD0110FF2C	6.73	7.98	4.80	5.44	0.40	1.00	0.35
0ZCD0125FF2C	6.73	7.98	4.80	5.44	0.40	0.90	0.35
0ZCD0150FF2C	6.73	7.98	4.80	5.44	0.40	0.90	0.35
0ZCD0185FF2C	6.73	7.98	4.80	5.44	0.30	0.90	0.35
Thur							
0ZCD0300FF2C							

### Standard Package

2,000 fuses in 7 inches dia. reel, 8mm wide tape, 4mm pitch, per EIA-481 (equivalent IEC-286 part 3).

### PTC Marking

" b ", IH code.

Part Number	I <sub>H</sub> Code
0ZCD0030FF2C	0030
0ZCD0050FF2C	0050
0ZCD0075FF2C	0075
0ZCD0110FF2C	0110
0ZCD0125FF2C	0125
0ZCD0150FF2C	0150
0ZCD0185FF2C	0185
0ZCD0200FF2C	0200
0ZCD0250FF2C	0250
0ZCD0260FF2C	0260
0ZCD0300FF2C	0300

### Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max. Time to Trip		Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance			Agency Approvals	
	I <sub>H</sub> , A	I <sub>T</sub> , A	Current, A	Seconds	I <sub>max</sub> , A	V <sub>max</sub> , Vdc	P <sub>d</sub> , W	R <sub>min</sub> Ohms	R <sub>max</sub> Ohms	R <sub>1max</sub> Ohms	UL	TUV
A	0.30	0.60	1.5	3.0	10	60	1.5	1.00	2.00	4.80	Y	Y
B	0.50	1.00	2.5	4.0	10	60	1.5	0.30	0.70	1.40	Y	Y
C	0.75	1.50	8.0	0.3	40	33	1.5	0.18	0.31	1.00	Y	Y
D	1.10	2.20	8.0	0.5	40	33	1.5	0.09	0.17	0.41	Y	Y
E	1.25	2.50	8.0	2.0	40	33	1.5	0.05	0.13	0.25	Y	Y
F	1.50	3.00	8.0	2.0	40	33	1.5	0.05	0.11	0.23	Y	Y
G	1.85	3.70	8.0	2.5	40	33	1.5	0.040	0.076	0.150	Y	Y
H	2.00	4.00	8.0	4.5	40	16	1.5	0.035	0.065	0.120	Y	Y
I	2.50	5.00	8.0	16	40	16	1.5	0.025	0.041	0.085	Y	Y
J	2.60	5.20	8.0	20	40	6	1.5	0.020	0.037	0.075	Y	Y
K	3.00	5.20	8.0	25	40	6	1.5	0.015	0.033	0.048	Y	Pending

- I<sub>H</sub>** Hold current-maximum current at which the device will not trip in still air at 23°C.
- I<sub>T</sub>** Trip current-minimum current at which the device will always trip in still air at 23°C.
- I<sub>max</sub>** Maximum fault current device can withstand without damage at rated voltage (V<sub>max</sub>).
- V<sub>max</sub>** Maximum voltage device can withstand without damage at its rated current.
- P<sub>d</sub>** Typical power dissipated by device when in tripped state in 23°C still air environment.
- R<sub>min</sub>** Minimum device resistance at 23°C.
- R<sub>max</sub>** Maximum device resistance at 23°C.
- R<sub>1max</sub>** Maximum device resistance at 23°C, 1 hour after initial device trip.

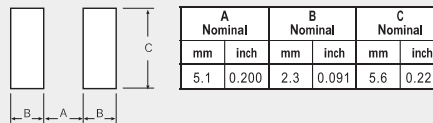
### Termination pad characteristics

#### Termination materials

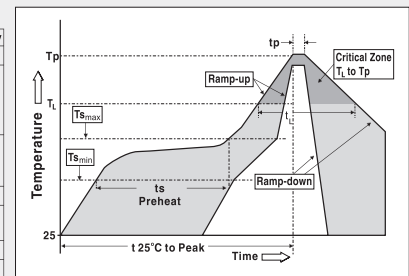
Matte Tin-plated Copper

### Pad Layout, Solder Reflow and Rework Recommendations

The dimensions in the table below provide the recommended pad layout for each 0ZCD device



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T <sub>smax</sub> to T <sub>p</sub> )	3 °C/second max.
Preheat :	
Temperature Min (T <sub>smin</sub> )	150 °C
Temperature Max (T <sub>smax</sub> )	200 °C
Time (t <sub>sm</sub> to t <sub>smax</sub> )	60-180 seconds
Time maintained above:	
Temperature (T <sub>i</sub> )	217 °C
Time (t <sub>i</sub> )	60-150 seconds
Peak/Classification Temperature (T <sub>p</sub> )	260 °C
Time within 5°C of actual Peak :	
Temperature (t <sub>p</sub> )	20-40 seconds
Ramp-Down Rate :	6 °C/second max.
Time 25 °C to Peak Temperature :	8 minutes max.



#### Solder Reflow

\* Due to "lead free/RoHS6" construction of these PTC devices, the required Temperature and Dwell Time in the "Soldering" zone of the reflow profile are greater than those used for non-RoHS devices.

1. Recommended reflow methods; IR, vapor phase oven, hot air oven.
2. The 0ZCD Series is suitable for wave solder application methods.
3. Recommended maximum paste thickness is 0.25mm.
4. Devices are compatible with standard industry cleaning solvents and methods.

#### Caution

If reflow temperature/dwell times exceed the recommended profile, the electrical performance of the PTC may be affected.

#### Rework

MIL-STD-202G Method 210F. Test Condition A.

Specifications subject to change without notice

# Surface Mount PTC

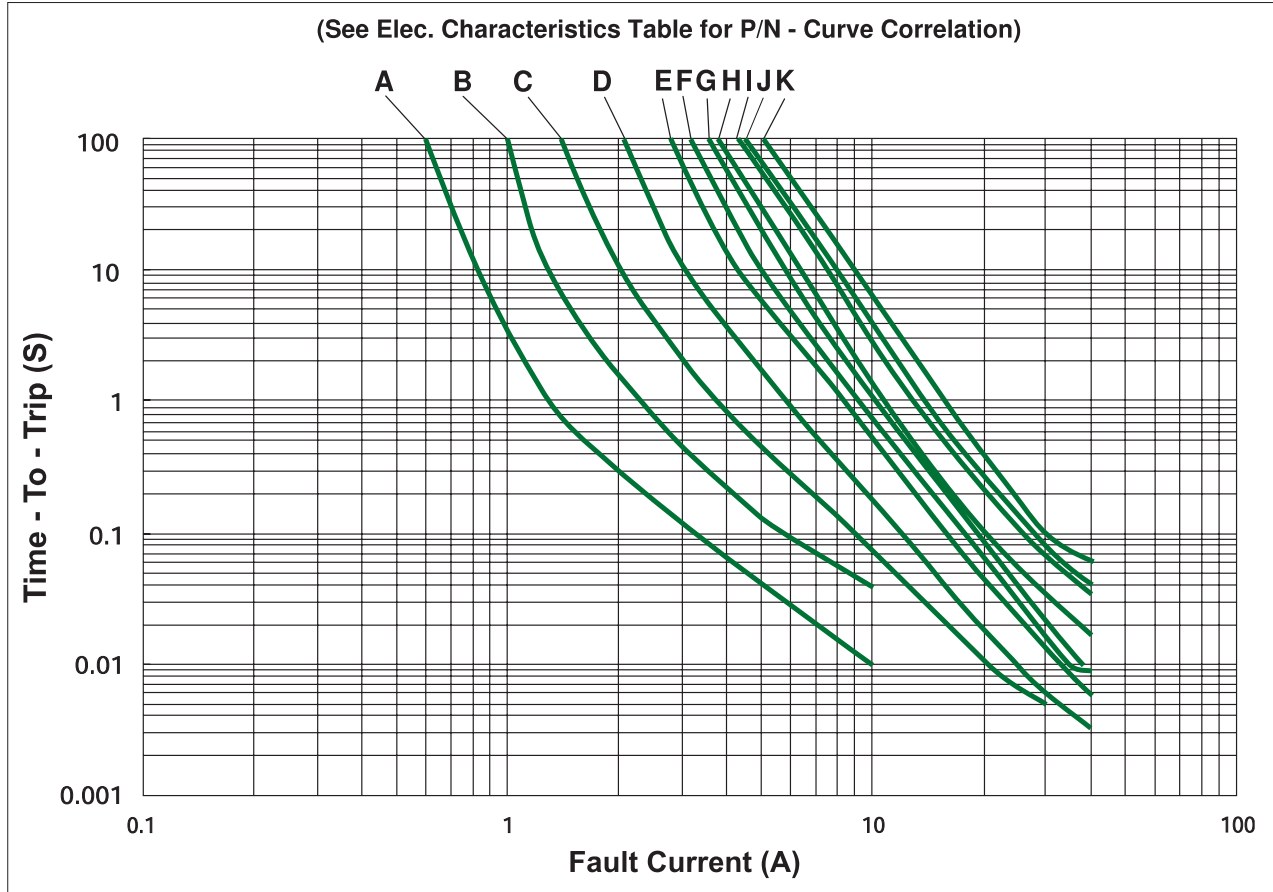
## 0ZCD Series

2920 Chip  
RoHS6 Compliant & Halogen-Free

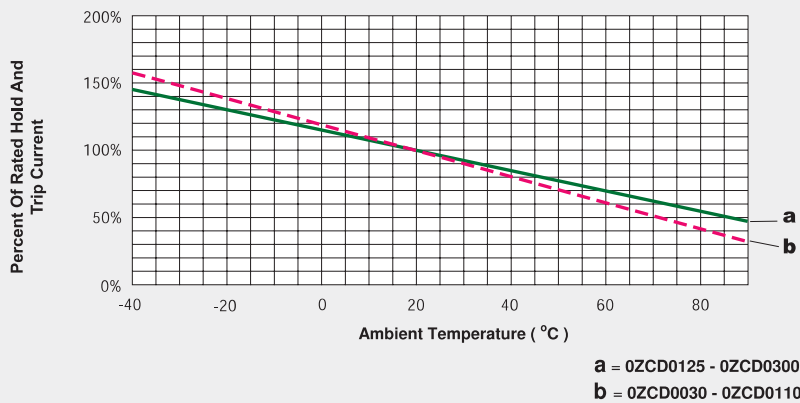


0ZCDC0809

### Typical Time - To - Trip at 23°C



### Thermal Derating Curve



### Cautionary Notes

1. Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.
2. These Polymer PTC (PPTC) devices are intended for protection against occasional overcurrent/ overtemperature fault conditions and may not be suitable for use in applications where repeated and/ or prolonged fault conditions are anticipated.
3. Avoid contact of PTC device with chemical solvent. Prolonged contact may adversely impact the PTC performance.
4. These PTC devices may not be suitable for use in circuits with a large inductance, as the PTC trip can generate circuit voltage spikes above the PTC rated voltage.

Specifications subject to change without notice

#### Corporate Office

##### Bel Fuse Inc.

206 Van Vorst Street, Jersey City, NJ 07302  
Tel: 201-432-0463  
Fax: 201-432-9542  
E-Mail: belfuse@belfuse.com  
Website: www.belfuse.com

#### Far East Office

##### Bel Fuse Ltd.

8F / 8 Luk Hop Street  
San Po Kong  
Kowloon, Hong Kong  
Tel 852-2328-5515  
Fax 852-2352-3706  
E-Mail : bel\_hk@belfuse.com

#### European Office

##### Bel Stewart GmbH

Industriestrasse 20  
61381 Friedrichsdorf  
Germany  
Tel 49-6172-9552-0  
Fax 49-6172-9552-40  
E-Mail : cprebeck@bel-stewart.com