

**Application**

All high-density boards

**Product Features**

0805 Chip Size, Fast Trip Time, Low DCR Resistance

**Operating (Hold Current) Range**

100mA ~ 1A

**Maximum Voltage**

6V ~ 15V (per table)

**Temperature Range**

-40°C to 85°C

**Agency Approval**

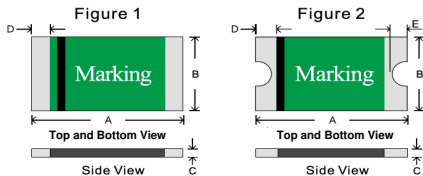
TUV (Std. EN60738-1-1, Cert. R50102117)

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  | Fig. | A    |      | B    |      | C    |      | D    |      | E    |      |
|--------------|------|------|------|------|------|------|------|------|------|------|------|
|              |      | Min  | Max  | Min  | Max  | Min  | Max  | Min  | Max  | Min  | Max  |
| OZCE0010FF2G | 1    | 2.00 | 2.30 | 1.20 | 1.50 | 0.55 | 1.00 | 0.20 | 0.60 | ---- | ---- |
| OZCE0020FF2G | 1    | 2.00 | 2.30 | 1.20 | 1.50 | 0.55 | 1.00 | 0.20 | 0.60 | ---- | ---- |
| OZCE0035FF2G | 1    | 2.00 | 2.30 | 1.20 | 1.50 | 0.45 | 0.75 | 0.20 | 0.60 | ---- | ---- |
| OZCE0050FF2E | 2    | 2.00 | 2.20 | 1.20 | 1.50 | 0.55 | 1.25 | 0.20 | 0.60 | 0.10 | 0.45 |
| OZCE0075FF2E | 2    | 2.00 | 2.20 | 1.20 | 1.50 | 0.55 | 1.25 | 0.20 | 0.60 | 0.10 | 0.45 |
| OZCE0100FF2E | 2    | 2.00 | 2.20 | 1.20 | 1.50 | 0.75 | 1.80 | 0.20 | 0.60 | 0.10 | 0.45 |

**Standard Package**

| Part Number                          | Reel/Tape |
|--------------------------------------|-----------|
| OZCE0010FF2G<br>Thru<br>OZCE0035FF2G | 4K        |
| OZCE0050FF2E<br>Thru<br>OZCE0100FF2E | 3K        |

4000 and 3000 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  | IH Code |
|--------------|---------|
| OZCE0010FF2G | D       |
| OZCE0020FF2G | F       |
| OZCE0035FF2G | J       |
| OZCE0050FF2E | M       |
| OZCE0075FF2E | P       |
| OZCE0100FF2E | 1       |

**Surface Mount PTC  
OZCE Series**

0805 Chip  
RoHS6 Compliant & Halogen-Free



**Electrical Characteristics (23°C)**

| Part Number    | Hold Current |         | Trip Current |         | Max. Time to Trip |           | Maximum Current | Rated Voltage | Typical Power | Resistance Tolerance |           |            | Agency Approvals |     |
|----------------|--------------|---------|--------------|---------|-------------------|-----------|-----------------|---------------|---------------|----------------------|-----------|------------|------------------|-----|
|                | Current      | Current | Current, A   | Seconds | Imax, A           | Vmax, Vdc |                 |               |               | Rmin Ohms            | Rmax Ohms | R1max Ohms | UL               | TUV |
| A OZCE0010FF2G | 0.10         | 0.30    | 0.5          | 1.50    | 100               | 15        | 0.5             | 0.70          | 3.50          | 6.00                 | Y         | Y          |                  |     |
| B OZCE0020FF2G | 0.20         | 0.50    | 0.80         | 0.02    | 100               | 9         | 0.5             | 0.40          | 2.00          | 3.50                 | Y         | Y          |                  |     |
| C OZCE0035FF2G | 0.35         | 0.75    | 8.0          | 0.10    | 100               | 6         | 0.5             | 0.25          | 0.75          | 1.20                 | Y         | Y          |                  |     |
| D OZCE0050FF2E | 0.50         | 1.00    | 8.0          | 0.10    | 100               | 6         | 0.5             | 0.15          | 0.50          | 0.85                 | Y         | Y          |                  |     |
| E OZCE0075FF2E | 0.75         | 1.50    | 8.0          | 0.20    | 40                | 6         | 0.6             | 0.09          | 0.22          | 0.35                 | Y         | Y          |                  |     |
| F OZCE0100FF2E | 1.00         | 1.95    | 8.0          | 0.30    | 40                | 6         | 0.6             | 0.06          | 0.14          | 0.21                 | Y         | Y          |                  |     |

- IH** Hold current-maximum current at which the device will not trip in still air at 23°C.
- It** Trip current-minimum current at which the device will always trip in still air at 23°C.
- Imax** Maximum fault current device can withstand without damage at rated voltage (Vmax).
- Vmax** Maximum voltage device can withstand without damage at its rated current.
- Pd** Typical power dissipated by device when in tripped state in 23°C still air environment.
- Rmin** Minimum device resistance at 23°C.
- Rmax** Maximum device resistance at 23°C.
- R1max** Maximum device resistance at 23°C, 1 hour after initial device trip.

**Termination pad characteristics**

**Termination pad materials**

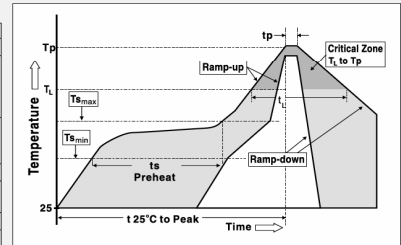
Matte Tin-plated Copper

**Pad Layout, Solder Reflow and Rework Recommendations**

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

| A   | Nominal |      | B     | Nominal |       | C | Nominal |      |
|-----|---------|------|-------|---------|-------|---|---------|------|
|     | mm      | inch |       | mm      | inch  |   | mm      | inch |
| 1.2 | 0.047   | 1    | 0.039 | 1.5     | 0.059 |   |         |      |

| Profile Feature                      | Pb-Free Assembly |
|--------------------------------------|------------------|
| Average Ramp-Up Rate (Tsmax to Tp)   | 3 °C/second max. |
| Preheat:                             |                  |
| Temperature Min (TsmIn)              | 150 °C           |
| Temperature Max (Tsmax)              | 200 °C           |
| Time (tsmin to tsmax)                | 60-180 seconds   |
| Time maintained above:               |                  |
| Temperature (Tl)                     | 217 °C           |
| Time (tl)                            | 60-150 seconds   |
| Peak/Classification Temperature (Tp) | 260 °C           |
| Time within 5°C of actual Peak:      |                  |
| Temperature (tp)                     | 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 OZCE 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.

HALOGEN FREE =

LEAD FREE =

Specifications subject to change without notice

# Surface Mount PTC

## OZCE Series

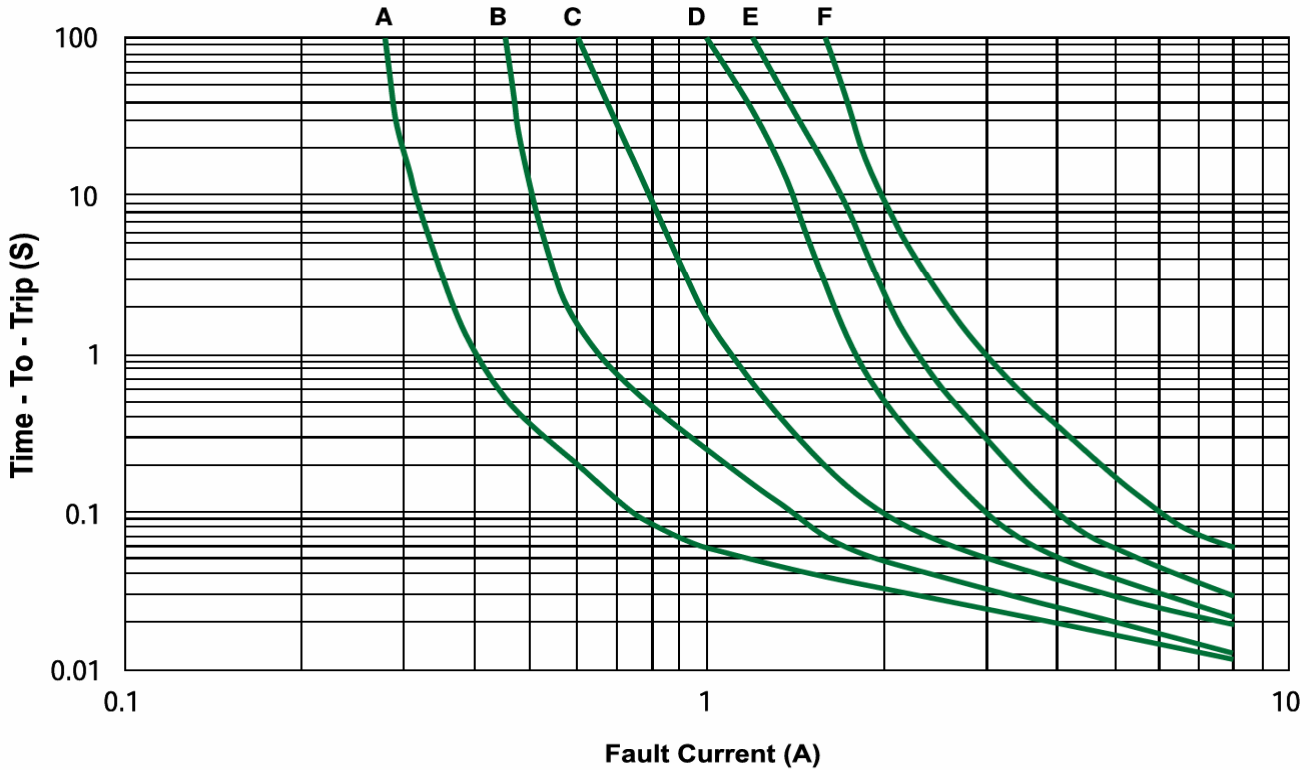
0805 Chip  
RoHS6 Compliant & Halogen-Free



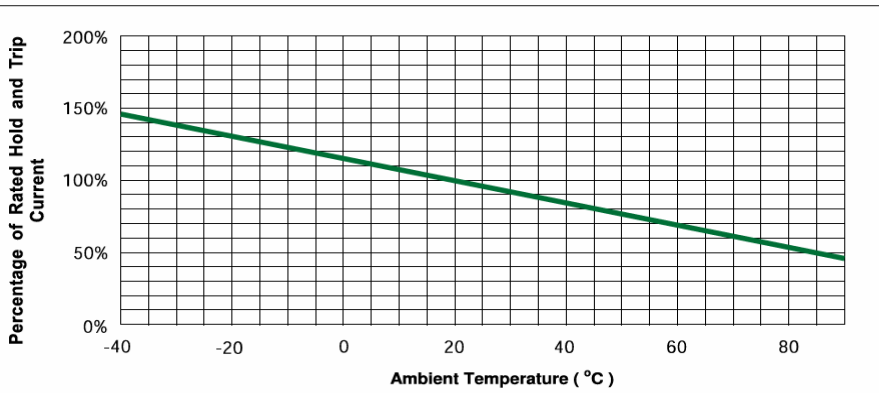
OZCEJAN2011

### Typical Time - To - Trip at 23°C

(See Elec. Characteristics Table for P/N - Curve Correlation)



### 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](mailto:belfuse@belfuse.com)  
Website: [www.belfuse.com](http://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](mailto: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](mailto:cprebeck@bel-stewart.com)