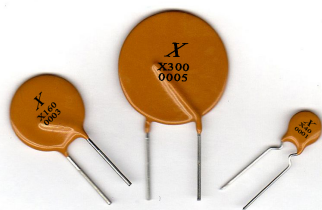


# Resettable PPTC Fuse



## Features

- Broadest range of Thru - Hole devices available in the industry
- Cured, Flame retardant epoxy, meets UL 94 V-0 requirement
- RoHS Compliant & Halogen Free

## Agency Approval and Environmental Compliance

| Agency   | File Number | Regulation |
|----------|-------------|------------|
| UL, C-UL | E211981     |            |
| TÜV      | R50004084   |            |

60V **XX** Series

Thru - Hole Devices

## Electrical Characteristics

| Part Number  | $I_H$ | $I_T$ | $T_{Trip}$ | $I_{MAX}$ | $V_{MAX}$ | $P_{D Typ}$ | $R_{MIN}$ | $R1_{MAX}$ |
|--------------|-------|-------|------------|-----------|-----------|-------------|-----------|------------|
|              | A     | A     | sec/A      | A         | V         | W           | $\Omega$  | $\Omega$   |
| <b>XX005</b> | 0.05  | 0.10  | 5.0/0.25   | 40        | 60        | 0.26        | 7.30      | 20.00      |
| <b>XX010</b> | 0.10  | 0.20  | 4.0/0.50   | 40        | 60        | 0.38        | 2.50      | 7.50       |
| <b>XX017</b> | 0.17  | 0.34  | 3.0/0.85   | 40        | 60        | 0.48        | 2.00      | 8.00       |
| <b>XX020</b> | 0.20  | 0.40  | 2.2/1.00   | 40        | 60        | 0.41        | 1.83      | 4.40       |
| <b>XX025</b> | 0.25  | 0.50  | 2.5/1.25   | 40        | 60        | 0.45        | 1.25      | 3.00       |
| <b>XX030</b> | 0.30  | 0.60  | 3.0/1.50   | 40        | 60        | 0.49        | 0.88      | 2.10       |
| <b>XX040</b> | 0.40  | 0.80  | 3.8/2.00   | 40        | 60        | 0.56        | 0.55      | 1.29       |
| <b>XX050</b> | 0.50  | 1.00  | 4.0/2.50   | 40        | 60        | 0.77        | 0.50      | 1.17       |
| <b>XX065</b> | 0.65  | 1.30  | 5.3/3.25   | 40        | 60        | 0.88        | 0.31      | 0.72       |
| <b>XX075</b> | 0.75  | 1.50  | 6.3/3.75   | 40        | 60        | 0.92        | 0.25      | 0.60       |
| <b>XX090</b> | 0.90  | 1.80  | 7.2/4.50   | 40        | 60        | 0.99        | 0.20      | 0.47       |
| <b>XX110</b> | 1.10  | 2.20  | 8.2/5.50   | 40        | 60        | 1.50        | 0.15      | 0.38       |
| <b>XX135</b> | 1.35  | 2.70  | 9.6/6.75   | 40        | 60        | 1.70        | 0.12      | 0.30       |
| <b>XX160</b> | 1.60  | 3.20  | 11.4/8.00  | 40        | 60        | 1.90        | 0.09      | 0.22       |
| <b>XX185</b> | 1.85  | 3.70  | 12.6/9.25  | 40        | 60        | 2.10        | 0.08      | 0.19       |
| <b>XX250</b> | 2.50  | 5.00  | 15.6/12.50 | 40        | 60        | 2.50        | 0.05      | 0.13       |
| <b>XX300</b> | 3.00  | 6.00  | 19.8/15.00 | 40        | 60        | 2.80        | 0.04      | 0.10       |
| <b>XX375</b> | 3.75  | 7.50  | 24.0/18.75 | 40        | 60        | 3.20        | 0.03      | 0.08       |

$I_H$ =Hold current-maximum current at which the device will not trip at 23°C still air.

$I_T$ =Trip current-minimum current at which the device will always trip at 23°C still air.

$T_{trip}$ =Maximum time to trip(s) at assigned current.

$I_{MAX}$ = Maximum fault current device can withstand without damage at rated voltage ( $V_{MAX}$ ).

$V_{MAX}$ =Maximum voltage device can withstand without damage at its rated current.

$P_{D Typ}$ =Typical power dissipated from device when in tripped state in 23°C still air environment.

$R_{MIN}$ =Minimum device resistance at 23°C.

$R1_{MAX}$ =Maximum device resistance at 23°C, 1 hour after tripping .

All specifications are subject to revise without notice.

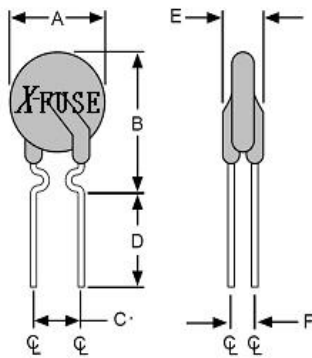
[Http://x-protection.com](http://x-protection.com)

# Resettable PPTC Fuse



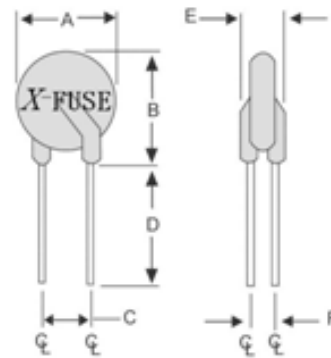
## Product Dimensions (Millimeter)

| Part Number  | Figure | A       | B       | C       | D       | E       | F       |
|--------------|--------|---------|---------|---------|---------|---------|---------|
|              |        | Maximum | Maximum | Typical | Minimum | Maximum | Typical |
| <b>XX005</b> | 1      | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX010</b> | 1      | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX017</b> | 1      | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX020</b> | 1      | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX025</b> | 1      | 7.4     | 12.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX030</b> | 1      | 7.4     | 13.0    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX040</b> | 1      | 7.6     | 13.5    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX050</b> | 1      | 7.9     | 13.7    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX065</b> | 1      | 9.7     | 14.5    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX075</b> | 1      | 10.4    | 15.2    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX090</b> | 1      | 11.7    | 15.8    | 5.1     | 7.6     | 3.1     | 1.1     |
| <b>XX110</b> | 2      | 13.0    | 18.0    | 5.1     | 7.6     | 3.1     | 1.4     |
| <b>XX135</b> | 2      | 14.5    | 19.6    | 5.1     | 7.6     | 3.1     | 1.4     |
| <b>XX160</b> | 2      | 16.3    | 21.3    | 5.1     | 7.6     | 3.1     | 1.4     |
| <b>XX185</b> | 2      | 17.8    | 22.9    | 5.1     | 7.6     | 3.1     | 1.4     |
| <b>XX250</b> | 2      | 21.3    | 26.4    | 10.2    | 7.6     | 3.1     | 1.4     |
| <b>XX300</b> | 2      | 24.9    | 30.0    | 10.2    | 7.6     | 3.1     | 1.4     |
| <b>XX375</b> | 2      | 28.5    | 33.5    | 10.2    | 7.6     | 3.1     | 1.4     |



**Figure 1**

Lead Size: 24AWG,  
 $\Phi$  0.51 mm Diameter



**Figure 2**

Lead Size: 20AWG,  
 $\Phi$  0.81 mm Diameter

# Resettable PPTC Fuse

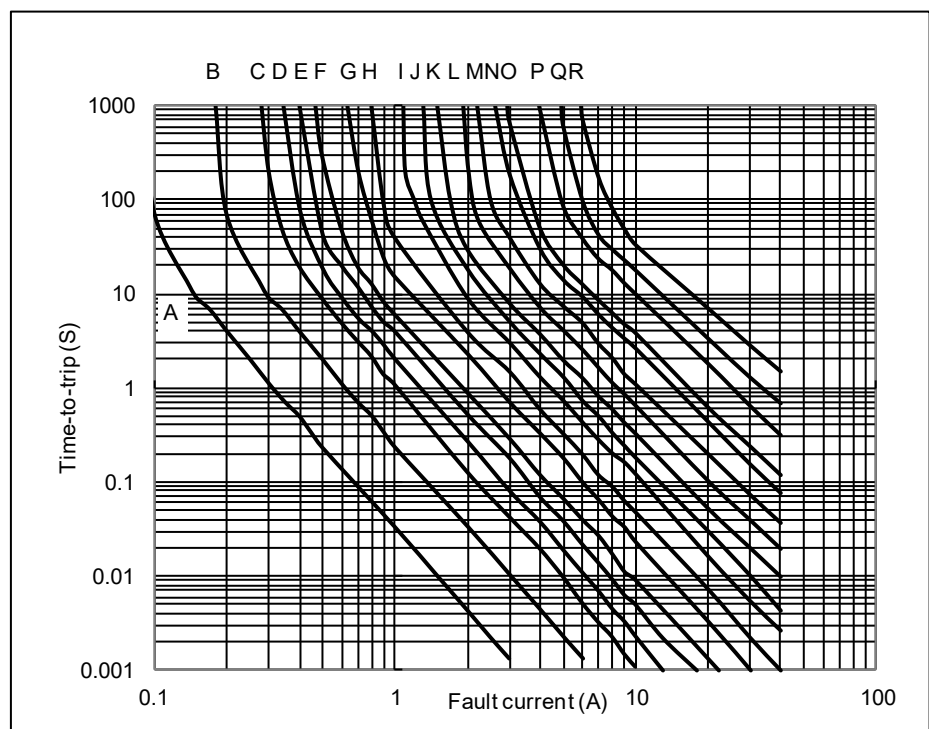


## Thermal Derating Chart-I<sub>H</sub> (A)

| Part Number  | Maximum ambient operating Temperature(°C) |       |       |       |       |       |       |       |       |       |
|--------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|              | -40                                       | -20   | 0     | 23    | 30    | 40    | 50    | 60    | 70    | 85    |
| <b>XX005</b> | 0.079                                     | 0.068 | 0.060 | 0.050 | 0.045 | 0.041 | 0.036 | 0.032 | 0.027 | 0.020 |
| <b>XX010</b> | 0.16                                      | 0.14  | 0.12  | 0.10  | 0.09  | 0.08  | 0.07  | 0.06  | 0.05  | 0.04  |
| <b>XX017</b> | 0.27                                      | 0.23  | 0.20  | 0.17  | 0.15  | 0.14  | 0.12  | 0.11  | 0.09  | 0.07  |
| <b>XX020</b> | 0.32                                      | 0.27  | 0.24  | 0.20  | 0.18  | 0.16  | 0.14  | 0.13  | 0.11  | 0.08  |
| <b>XX025</b> | 0.40                                      | 0.34  | 0.30  | 0.25  | 0.23  | 0.20  | 0.18  | 0.16  | 0.14  | 0.10  |
| <b>XX030</b> | 0.47                                      | 0.41  | 0.36  | 0.30  | 0.27  | 0.24  | 0.22  | 0.19  | 0.16  | 0.12  |
| <b>XX040</b> | 0.63                                      | 0.54  | 0.48  | 0.40  | 0.36  | 0.32  | 0.29  | 0.25  | 0.22  | 0.16  |
| <b>XX050</b> | 0.79                                      | 0.68  | 0.60  | 0.50  | 0.45  | 0.41  | 0.36  | 0.32  | 0.27  | 0.20  |
| <b>XX065</b> | 1.03                                      | 0.88  | 0.77  | 0.65  | 0.59  | 0.53  | 0.47  | 0.41  | 0.35  | 0.26  |
| <b>XX075</b> | 1.19                                      | 1.02  | 0.89  | 0.75  | 0.68  | 0.61  | 0.54  | 0.47  | 0.41  | 0.30  |
| <b>XX090</b> | 1.42                                      | 1.22  | 1.07  | 0.90  | 0.81  | 0.73  | 0.65  | 0.57  | 0.49  | 0.36  |
| <b>XX110</b> | 1.74                                      | 1.50  | 1.31  | 1.10  | 0.99  | 0.89  | 0.79  | 0.69  | 0.59  | 0.44  |
| <b>XX135</b> | 2.13                                      | 1.84  | 1.61  | 1.35  | 1.22  | 1.09  | 0.97  | 0.85  | 0.73  | 0.54  |
| <b>XX160</b> | 2.53                                      | 2.18  | 1.90  | 1.60  | 1.44  | 1.30  | 1.15  | 1.01  | 0.86  | 0.64  |
| <b>XX185</b> | 2.92                                      | 2.52  | 2.20  | 1.85  | 1.67  | 1.50  | 1.33  | 1.17  | 1.00  | 0.74  |
| <b>XX250</b> | 3.95                                      | 3.40  | 2.98  | 2.50  | 2.25  | 2.03  | 1.80  | 1.58  | 1.35  | 1.00  |
| <b>XX300</b> | 4.74                                      | 4.08  | 3.57  | 3.00  | 2.70  | 2.43  | 2.16  | 1.89  | 1.62  | 1.20  |
| <b>XX375</b> | 5.93                                      | 5.10  | 4.46  | 3.75  | 3.38  | 3.04  | 2.70  | 2.36  | 2.03  | 1.50  |

## Typical Time-To-Trip at 23°C

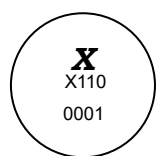
- A = **XX005**
- B = **XX010**
- C = **XX017**
- D = **XX020**
- E = **XX025**
- F = **XX030**
- G = **XX040**
- H = **XX050**
- I = **XX065**
- J = **XX075**
- K = **XX090**
- L = **XX110**
- M = **XX135**
- N = **XX160**
- O = **XX185**
- P = **XX250**
- Q = **XX300**
- R = **XX375**



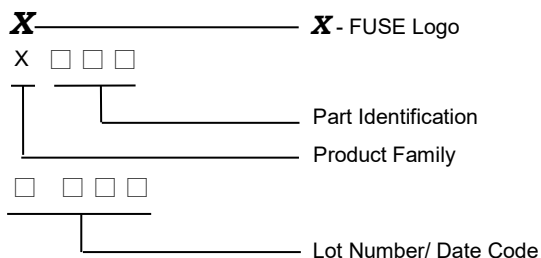
# Resettable PPTC Fuse



## Marking System



Example



## Package Information

### Bulk:

- XX005~XX050**-----500pcs per bag
- XX065~XX110**-----300pcs per bag
- XX135~XX185**-----200pcs per bag
- XX250~XX375**-----100pcs per bag

### Tape & Reel:

- XX005~XX075**-----3000pcs per reel
- XX090~XX185**-----1500pcs per reel
- XX250**-----800pcs per reel
- XX300~XX375**-----600pcs per reel

**Caution :** Operation beyond the specified maximum ratings or misuse can result in damage and possible electrical arcing and/or flame.  
PPTC device are designed for occasional overcurrent protection. Not for continuously overcurrent circumstance and/or prolonged trip are not anticipated.  
Keep PPTC device away from chemical solvent contact. Prolonged contact will damage the device performance.