

## Radial Leaded PTC Resettable Fuse: FHE Series

### 1. Summary

- (a) **RoHS Compliant (Lead Free) Product**
- (b) **Applications: Wide variety of electronic equipment**
- (c) **Product Features: Very Low resistance, Very High hold current, Solid state, Radial leaded product ideal for up to 32V and Operating temperatures up to 125°C.**
- (d) **Operation Current: 0.5A~10.0A**
- (e) **Maximum Voltage: 32V<sub>DC</sub>**
- (f) **Temperature Range: -40°C to 125°C**

### 2. Agency Recognition

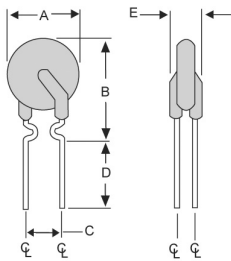
UL: File No. E211981  
 C-UL: File No. E211981  
 TÜV: File No. R50004084

### 3. Electrical Characteristics (23°C)

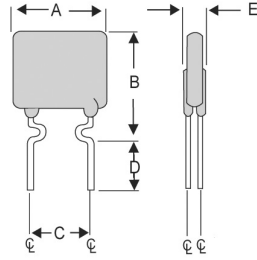
Part Number	Hold Current $I_H$ , A	Trip Current $I_T$ , A	Max. Time to Trip at $5 \times I_H$ , s	Maximum Current $I_{MAX}$ , A	Rated Voltage $V_{MAX}$ , V <sub>DC</sub>	Typical Power Pd, W	Resistance	
							$R_{MIN}$ Ohm	$R1_{MAX}$ Ohm
FHE050-32F	0.5	1.0	3.0	100	32	0.9	0.3500	1.1000
FHE070-32F	0.7	1.4	3.2	100	32	1.4	0.2300	0.8000
FHE100-32F	1.0	1.9	6.2	100	32	1.4	0.1500	0.4300
FHE200-32F	2.0	4.0	5.5	100	32	2.2	0.0650	0.2500
FHE300-32F	3.0	6.0	5.0	100	32	3.2	0.0350	0.1100
FHE500-32F	5.0	10.0	9.0	100	32	5.3	0.0150	0.0400
FHE750-32F	7.5	15.0	13.0	100	32	6.5	0.0074	0.0230
FHE1000-32F	10.0	20.0	15.0	100	32	7.0	0.0060	0.0160

$I_H$ =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.  
 $V_{MAX}$ =Maximum voltage device can withstand without damage at its rated current.  
 $I_{MAX}$ = Maximum fault current device can withstand without damage at rated voltage ( $V_{MAX}$ ).  
 Pd=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.  
 Physical specifications:  
 Lead material: FHE050-32F~FHE100-32F Tin plated copper clad steel, 24 AWG.  
 FHE200-32F~FHE750-32F Tin plated copper, 20 AWG.  
 FHE1000-32F Tin plated copper, 18 AWG.  
 Soldering characteristics: MIL-STD-202, Method 208E.  
 Insulating coating: Flame retardant epoxy, meets UL-94V-0 requirement.

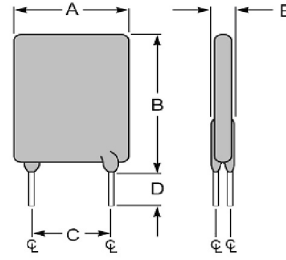
**4. Production Dimensions (millimeter)**



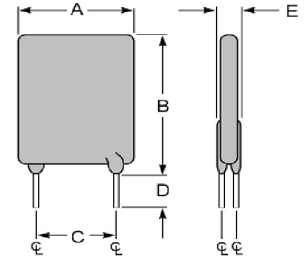
**Fig. 1**  
Lead Size: 24AWG  
φ0.51 mm Diameter



**Fig. 2**  
Lead Size: 24AWG  
φ0.51 mm Diameter



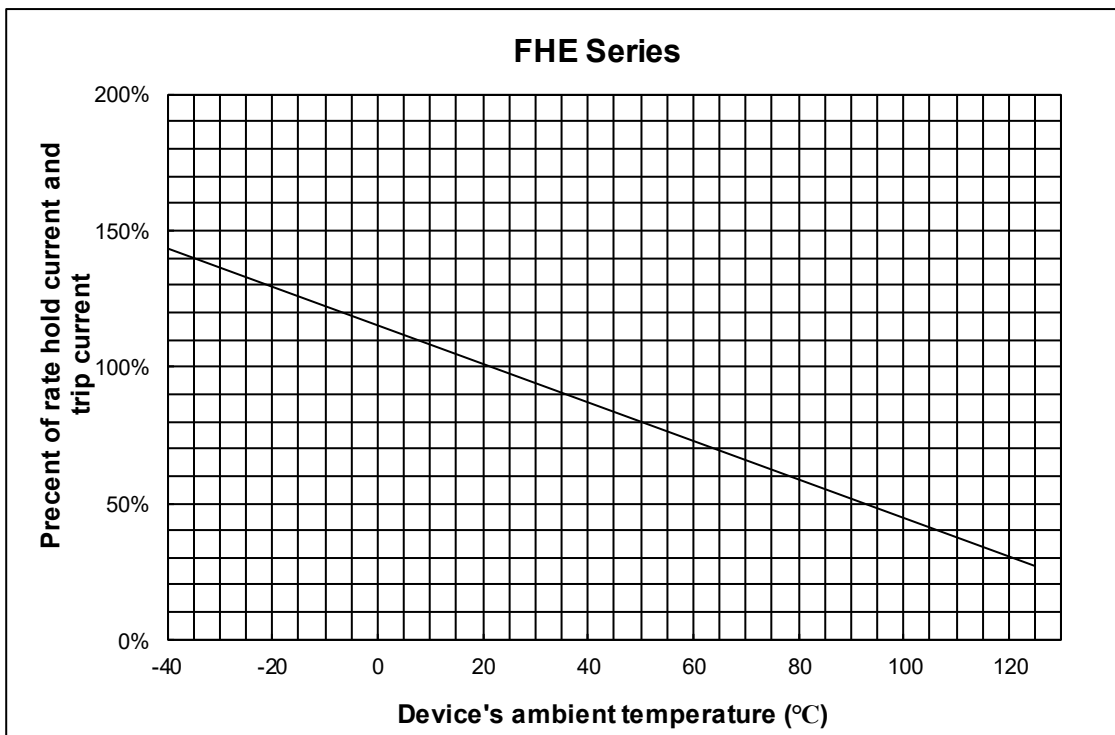
**Fig. 3**  
Lead Size: 20AWG  
φ0.81 mm Diameter



**Fig. 4**  
Lead Size: 18AWG  
φ1.00 mm Diameter

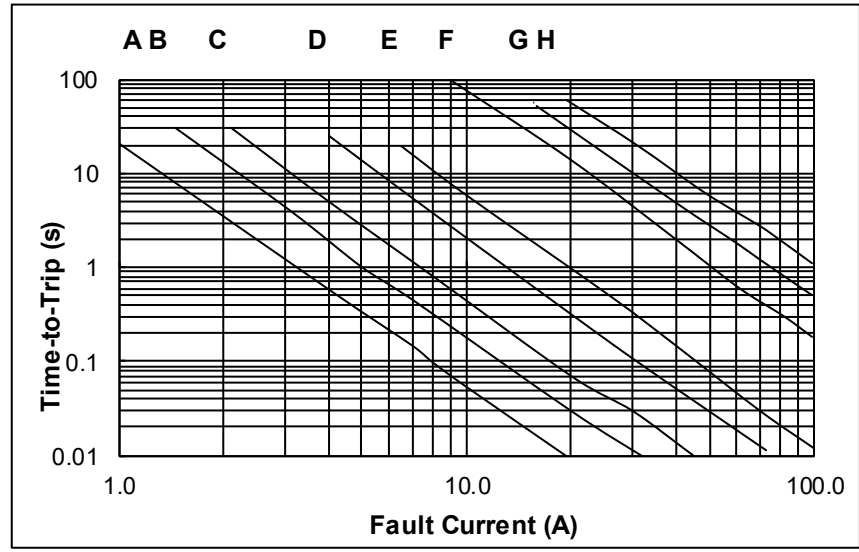
Part Number	Figure	A	B	C	D	E
		Maximum	Maximum	Typical	Minimum	Maximum
FHE050-32F	1	7.4	12.7	5.1	7.6	3.3
FHE070-32F	2	6.9	10.8	5.1	7.6	3.0
FHE100-32F	1	9.7	13.6	5.1	7.6	3.0
FHE200-32F	3	9.5	13.5	5.1	7.6	3.0
FHE300-32F	3	10.2	15.5	5.1	7.6	3.8
FHE500-32F	3	14.0	24.1	5.1	7.6	3.8
FHE750-32F	3	21.1	24.9	10.2	7.6	3.8
FHE1000-32F	4	23.5	27.9	10.2	7.6	4.0

**5. Thermal Derating Curve**



### 6. Typical Time-to-Trip at 23°C

- A = FHE050-32F
- B = FHE070-32F
- C = FHE100-32F
- D = FHE200-32F
- E = FHE300-32F
- F = FHE500-32F
- G = FHE750-32F
- H = FHE1000-32F



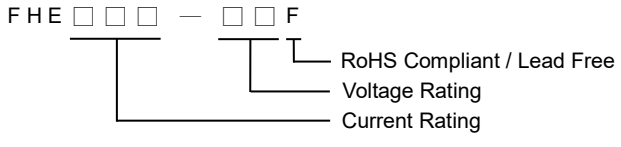
### 7. Material Specification

Lead material: FHE050-32F~FHE100-32F Tin plated copper clad steel, 24 AWG.  
 FHE200-32F~FHE750-32F Tin plated copper, 20 AWG.  
 FHE1000-32F Tin plated copper, 18 AWG.

Soldering characteristics: MIL-STD-202, Method 208E.  
 Insulating coating: Flame retardant epoxy, meets UL-94V-0 requirement.

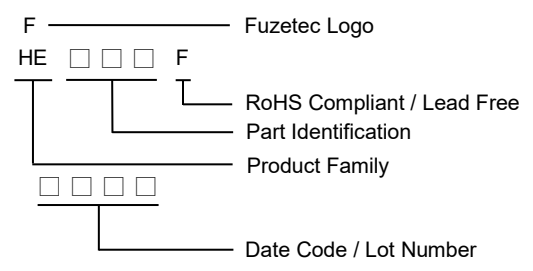
### 8. Part Numbering and Marking System

#### Part Numbering System



F  
 HE200F  
 91AA  
 Example

#### Part Marking System



Note: Font on Marking may look slightly different due to fine turnings of each Marking printer.

#### Warning:



- Each product should be carefully evaluated and tested for their suitability of application.
- Operation beyond the specified maximum rating or improper use may result in damage and possible electrical arcing and/or flame.
- PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.
- Avoid contact of PPTC device with chemical solvent, including some inert material such as silicone based oil, lubricant and etc. Prolonged contact will damage the device performance.
- Additional protection mechanism are strongly recommended to be used in conjunction with the PPTC device for protection against abnormal or failure conditions.
- Avoid use of PPTC device in a constrained space such as potting material, housing and containers where have limited space to accommodate device thermal expansion and/or contraction.