

Positive Temperature Coefficient (PTC) Datasheet

Features

- Max Dc voltage 60 V
- Radial leaded Devices
- Over-current protection
- Fast responding to fault current
- RoHS compliant & Lead-Free & Halogen Free
- Cured,flame retardant epoxy polymer insulating material meets UL94V-0

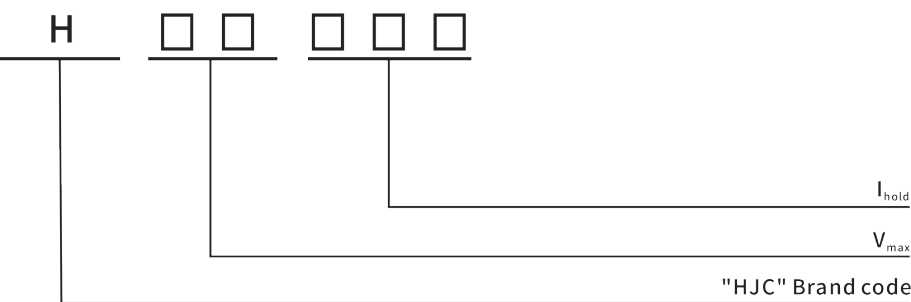
Max Dc voltage 60V

I Hold 0.05A to 5A

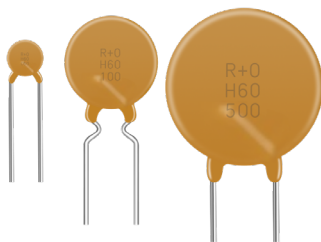
Applications

- Powered supplies
- General electronics
- Industrial controls
- Motor protection
- Game machines, Portable electronics,Battery
- Plug and play protection for motherboards and peripherals

Part Number Code

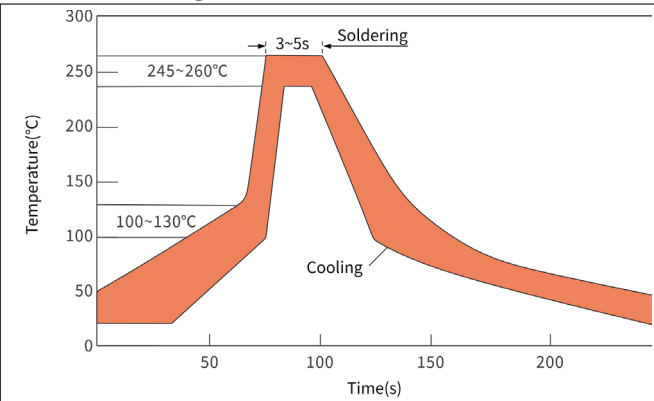


H60 Series



Recommended Soldering Conditions

Wave Soldering Recommendation Parameters



Profile Feature	Pb-Free Assembly
Pre-Heating Zone	Maximum ramping rate should not exceed 4 /sec.
Soldering Zone	Maximum solder temperature should not exceed 260°C ; Soldering Time:3-5sec.
Cooling Zone	Forced cooling

Manual Soldering Recommendation Parameters

Items	Conditions
Soldering condition	The highest power of the manual soldering iron should be 30W or less, soldering temperature should not be higher than 280°C .
Soldering time	The soldering time should be kept within 3 seconds, otherwise it might cause insulation layer cracking, and increased part resistance.
Soldering position	The distance on the leads between the soldering point and bottom of the PPTC body should be equal or greater than 4mm. Iron should not contact the PPTC body except the leads.

● Electrical Characteristics (Ta=25°C Unless otherwise specified)

Part Number	Marking	I_{hold}	I_{trip}	V_{max}	I_{max}	$P_{d\ typ}$	Max. Time-to-trip		R_{min}	R_{max}
		(A)	(A)	(V) _{DC}	(A)	(W)	(A)	(Sec)	(Ω)	(Ω)
H60-005	H60 005	0.05	0.15	60	40	0.26	0.25	8.0	7.3	20
H60-010	H60 010	0.10	0.3	60	40	0.38	0.5	5.0	2.5	7.5
H60-017	H60 017	0.17	0.34	60	40	0.48	0.85	5.0	2	5.21
H60-020	H60 020	0.2	0.4	60	40	0.41	1.0	5.0	1.5	2.84
H60-025	H60 025	0.25	0.5	60	40	0.45	1.25	5.0	1.0	1.95
H60-030	H60 030	0.30	0.6	60	40	0.49	1.5	5.0	0.76	1.38
H60-040	H60 040	0.40	0.8	60	40	0.56	2.0	5.0	0.45	0.88
H60-050	H60 050	0.50	1.0	60	40	0.77	2.5	5.0	0.40	0.79
H60-065	H60 065	0.65	1.3	60	40	0.88	3.25	5.0	0.31	0.50
H60-075	H60 075	0.75	1.5	60	40	0.92	3.75	5.0	0.25	0.42
H60-090	H60 090	0.90	1.8	60	40	0.99	4.5	5.0	0.20	0.33
H60-110	H60 110	1.10	2.2	60	40	1.5	5.5	8.0	0.15	0.27
H60-135	H60 135	1.35	2.7	60	40	1.7	6.75	8.0	0.12	0.21
H60-160	H60 160	1.60	3.2	60	40	1.9	8.0	8.0	0.09	0.16
H60-185	H60 185	1.85	3.7	60	40	2.1	9.25	8.0	0.08	0.14
H60-200	H60 200	2.00	4.0	60	40	2.3	10.0	8.0	0.07	0.14
H60-250	H60 250	2.50	5.0	60	40	2.5	12.5	8.0	0.05	0.10
H60-300	H60 300	3.00	6.0	60	40	2.8	15.0	8.0	0.04	0.08
H60-375	H60 375	3.75	7.5	60	40	3.2	18.75	24.0	0.03	0.06
H60-500	H60 500	5.00	10	60	40	3.5	25.0	24.0	0.02	0.06

● Vocabulary

- I_{hold} = Hold current: maximum current device will pass without tripping in 25°C still air.
- I_{trip} = Trip current: minimum current at which the device will trip in 25°C still air.
- V_{max} = Maximum voltage device can withstand without damage at rated current (I_{max}).
- I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max}).
- $P_{d\ typ}$ = Typical power dissipated from device when in the tripped state at 25°C still air.
- R_{min} = Minimum device resistance at 25°C prior to tripping.
- R_{max} = Maximum device resistance at 25°C prior to tripping.

Caution: Operation beyond the specified ratings may result in damage and possible arcing and flame.

H60 SERIES

Radial leaded PTC devices.

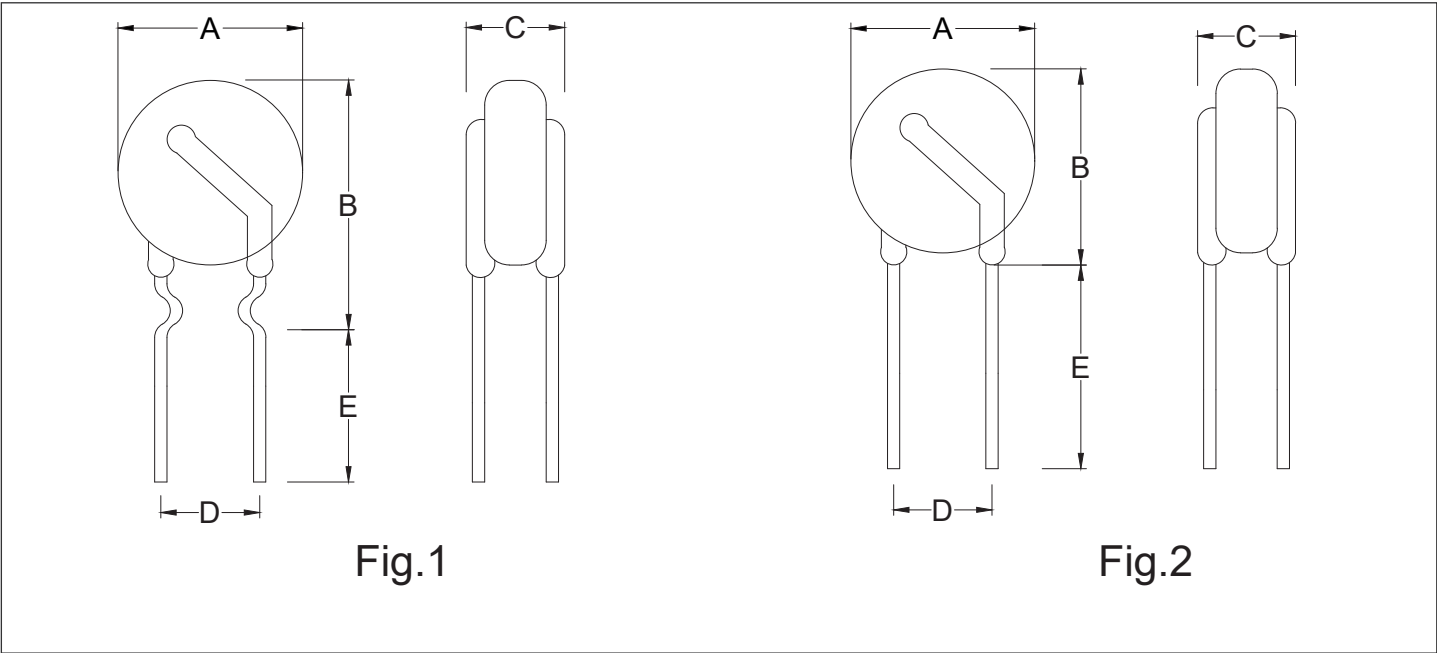
Thermal Derating Chart - I Hold

Part Number	Ambient operating temperature hold current(Ihold)									
	-40℃	-20℃	0℃	25℃	30℃	40℃	50℃	60℃	70℃	85℃
H60 SERIES	147%	136%	119%	100%	90%	81%	72%	63%	54%	40%

Environmental Specifications

Operating / Storage temperature:	-40℃ to +85℃
Passive Aging :	+85℃ , 1000 hours
Humidity Aging :	+85℃ , 85%R.H. 1000hours
Thermal Shock :	+125℃ /-55℃ 10 times
Solvent Resistance:	MIL-STD-202, Method 215 No change
Vibration:	MIL-STD-202,Method 201 No change
Moisture Level Sensitivity	Level 1, J-STD-020C
Storage Conditions:	Light-proof, Hermetically Sealed, Moisture-proof

Physical Dimensions & Recommended Pad Layout



Part Number	Dimensions (mm)					Lead material	Shape
	A (max)	B (max)	C (max)	D (typ)	E (min)	Tinned matel(mm)	Fig.
H60-005	5.5	9.5	3.0	5.1±0.75	4.6	24AWG/Φ0.5	1
H60-010	5.5	9.5	3.0	5.1±0.75	4.6	24AWG/Φ0.5	1
H60-017	7.4	12.7	3.0	5.1±0.75	4.6	24AWG/Φ0.5	1
H60-020	7.4	12.7	3.0	5.1±0.75	4.6	24AWG/Φ0.5	1
H60-025	7.4	12.7	3.0	5.1±0.75	4.6	24AWG/Φ0.5	1
H60-030	7.4	13.0	3.0	5.1±0.75	4.6	24AWG/Φ0.5	1
H60-040	7.8	16.2	3.0	5.1±0.75	4.6	24AWG/Φ0.5	1

H60 SERIES

Radial leaded PTC devices.

Part Number	Dimensions (mm)					Lead material	Shape
	A max	B max	C max	D	E min	Tinned matel(mm)	Fig.
H60-050	7.8	16.2	3.0	5.1±0.75	4.6	24AWG/Φ0.5	1
H60-065	9.7	17.8	3.0	5.1±0.75	4.6	22 AWG/Φ0.6	1
H60-075	10.4	18.4	3.0	5.1±0.75	4.6	22 AWG/Φ0.6	1
H60-090	11.7	18.4	3.0	5.1±0.75	4.6	22 AWG/Φ0.6	1
H60-110	13.0	18.0	3.0	5.1±0.75	4.6	20 AWG/Φ0.8	2
H60-135	14.5	19.6	3.0	5.1±0.75	4.6	20 AWG/Φ0.8	2
H60-160	16.3	21.3	3.0	5.1±0.75	4.6	20 AWG/Φ0.8	2
H60-185	17.8	22.9	3.0	5.1±0.75	4.6	20 AWG/Φ0.8	2
H60-200	17.8	22.9	3.0	5.1±0.75	4.6	20 AWG/Φ0.8	2
H60-250	21.3	26.4	3.0	10.2±0.75	4.6	20 AWG/Φ0.8	2
H60-300	21.3	26.4	3.0	10.2±0.75	4.6	20 AWG/Φ0.8	2
H60-375	28.5	33.5	3.0	10.2±0.75	4.6	20 AWG/Φ0.8	2
H60-500	28.5	33.5	3.0	10.2±0.75	4.6	20 AWG/Φ0.8	2

Note: Dimensions A, B, and C are the maximum values, and the standard tolerance for value D is + 0.75mm.

● Ordering Information

DELIVERY MODE	Part Number	MPQ(PCS)
Bulk	H60-005 ~ H60-110	1,000
	H60-135 ~ H60-200	500
	H60-250 ~ H60-500	200

● Warning

- Users shall independently assess the suitability of these devices for each of their applications.
- Operation of these devices beyond the stated maximum ratings could result in damage to the devices and lead to electrical arcing and/or fire.
 - These devices are intended to protect against the effects of temporary over-current or over-temperature conditions and are not intended to perform as protective devices where such conditions are expected to be repetitive or prolonged in duration.
 - Exposure to silicon-based oils, solvents, electrolytes, acids, and similar materials can adversely affect the prolonged of these PPTC devices.
 - These devices undergo thermal expansion under fault conditions, and thus shall be provided with adequate space and be protected against mechanical stresses.
 - Circuits with inductance may generate a voltage (L di/dt) above the rated voltage of the PPTC device.