



R60 Series

Features

- Radial Leaded Devices
- Cured, flame retardant epoxy polymer insulating material meets UL 94V-0 requirements
- Bulk packaging, or tape and reel available on most models
- Agency recognition:UL/CSA/TÜV approved

Applications

- Almost anywhere there is a low voltage power supply, up to 60V and a load to be protected, including:
- Industrial controls
 - Automotive electronics
 - Medical products

Sea & Land

Electrical Properties

Model	V _{max} (Vdc)	I _{max} (A)	I _{hold} @23°C (A)	I _{trip} @23°C (A)	P _d Typ. (W)	Maximum Time To Trip		Resistance		
						Current (A)	Time (Sec)	R _{imin} (Ω)	R _{imax} (Ω)	R _{1max} (Ω)
R60-010	60	40	0.10	0.20	0.38	0.50	4.0	2.50	4.50	7.50
R60-017	60	40	0.17	0.34	0.48	0.85	3.0	2.50	5.21	8.00
R60-020	60	40	0.20	0.40	0.41	1.00	2.2	1.83	2.75	4.40
R60-025	60	40	0.25	0.50	0.45	1.25	2.5	1.00	1.95	3.00
R60-030	60	40	0.30	0.60	0.49	1.50	3.0	0.88	1.33	2.10
R60-040	60	40	0.40	0.80	0.56	2.00	3.8	0.55	0.86	1.29
R60-050	60	40	0.50	1.00	0.77	2.50	4.0	0.50	0.77	1.17
R60-065	60	40	0.65	1.30	0.88	3.25	5.3	0.31	0.48	0.72
R60-075	60	40	0.75	1.50	0.92	3.75	6.3	0.25	0.40	0.60
R60-090	60	40	0.90	1.80	0.99	4.50	7.2	0.20	0.31	0.47
R60-110	60	40	1.10	2.20	1.50	5.50	8.2	0.15	0.25	0.38
R60-135	60	40	1.35	2.70	1.70	6.75	9.6	0.12	0.19	0.30
R60-160	60	40	1.60	3.20	1.90	8.00	11.4	0.09	0.14	0.22
R60-185	60	40	1.85	3.70	2.10	9.25	12.6	0.08	0.12	0.19
R60-250	60	40	2.50	5.00	2.50	12.50	15.6	0.05	0.08	0.13
R60-300	60	40	3.00	6.00	2.80	15.00	19.8	0.04	0.06	0.10
R60-375	60	40	3.75	7.50	3.20	18.75	24.0	0.03	0.05	0.08

I_{hold} = Hold Current. Maximum current device will not trip in 23°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 23°C still air.

V_{max} = Maximum operating 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 = Typical power dissipated from device when in the tripped state in 23°C still air environment at rated voltage.

R_{imin/max} = Minimum/Maximum device resistance prior to tripping at 23°C

R_{1max} = Maximum device resistance one hour after it is tripped at 23°C.

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

Environmental Specifications

Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs	±5% typical
Humidity aging	+85°C, 85% R.H., 1000 hrs	±5% typical
Thermal shock	+85°C to -40°C, 20 times	±10% typical
Resistance to solvent	MIL-STD-202, Method 215	No change
Vibration	MIL-STD-202, Method 201	No change
Ambient operating /storage conditions : - 40 °C to 85 °C		
Maximum surface temperature of the device in the tripped state is 125 °C		

AGENCY APPROVALS :



UL/CSA/TÜV approved



AGENCY FILE NUMBERS : UL FILE NO. E201504; CSA FILE NO. 216999, TÜV FILE NO. B 02 11 43486

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
 Http://www.100y.com.tw

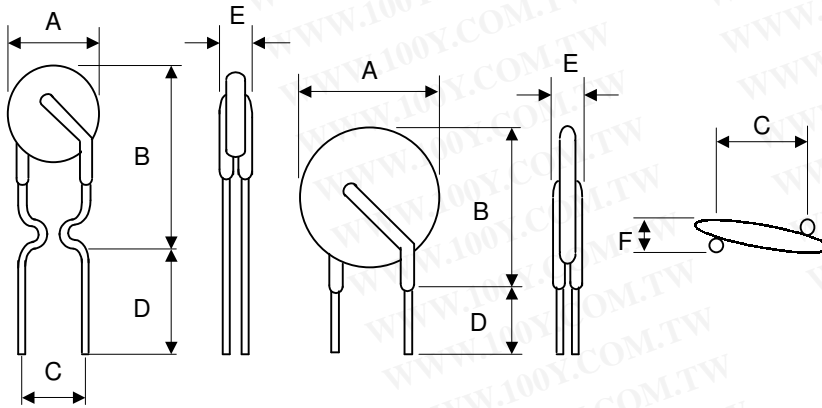
R60 Series

Sea & Land

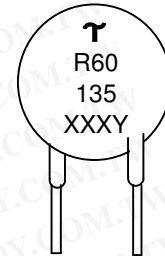
Physical Dimensions (Unit: mm/inch)

Model	A	B	C	D	E	F	Lead Style
	Max.	Max.	Typ.	Min.	Max.	Max.	
R60-010	7.4/0.29	12.7/0.50	5.1/0.20	7.6/0.3	3.1/0.12	1.0/0.04	Kink
R60-017	7.4/0.29	12.7/0.50	5.1/0.20	7.6/0.3	3.1/0.12	1.7/0.07	Kink
R60-020	7.4/0.29	12.7/0.48	5.1/0.20	7.6/0.3	3.1/0.12	1.0/0.04	Kink
R60-025	7.4/0.29	12.7/0.50	5.1/0.20	7.6/0.3	3.1/0.12	1.0/0.04	Kink
R60-030	7.4/0.29	13.0/0.51	5.1/0.20	7.6/0.3	3.1/0.12	1.0/0.04	Kink
R60-040	7.6/0.30	13.5/0.53	5.1/0.20	7.6/0.3	3.1/0.12	1.2/0.05	Kink
R60-050	7.9/0.31	13.7/0.54	5.1/0.20	7.6/0.3	3.1/0.12	1.2/0.05	Kink
R60-065	9.7/0.38	14.5/0.57	5.1/0.20	7.6/0.3	3.1/0.12	1.5/0.06	Kink
R60-075	10.4/0.41	15.2/0.60	5.1/0.20	7.6/0.3	3.1/0.12	1.5/0.06	Kink
R60-090	11.7/0.46	15.8/0.62	5.1/0.20	7.6/0.3	3.1/0.12	1.5/0.06	Kink
R60-110	13.0/0.51	18.0/0.71	5.1/0.20	7.6/0.3	3.1/0.12	1.2/0.05	Straight
R60-135	14.5/0.57	19.6/0.77	5.1/0.20	7.6/0.3	3.1/0.12	1.2/0.05	Straight
R60-160	16.3/0.64	21.3/0.84	5.1/0.20	7.6/0.3	3.1/0.12	1.5/0.06	Straight
R60-185	17.8/0.70	22.9/0.90	5.1/0.20	7.6/0.3	3.1/0.12	1.5/0.06	Straight
R60-250	21.3/0.84	26.4/1.04	10.2/0.40	7.6/0.3	3.1/0.12	1.7/0.07	Straight
R60-300	24.9/0.98	30.0/1.18	10.2/0.40	7.6/0.3	3.1/0.12	2.0/0.08	Straight
R60-375	28.5/1.12	33.5/1.32	10.2/0.40	7.6/0.3	3.1/0.12	2.0/0.08	Straight

Dimensions



Marking



Y = Trademark
 R60 = Radial type 60 V
 135 = 1.35A hold current
 XXX = Date code
 Y = Factory code

Physical Characteristics

Lead Material :

R60-010: Tin-plated nickel-copper alloy, 0.205mm² (24AWG), Φ 0.51mm(0.020 in).
 R60-017 ~ 040: Tin-plated copper-clad steel, 0.205mm² (24AWG), Φ 0.51mm(0.020 in).
 R60-050 ~ 090: Tin-plated copper steel, 0.205mm² (24AWG), Φ 0.51mm(0.020 in).
 R60-110 ~ 375: Tin-plated copper steel, 0.52mm² (20AWG), Φ 0.81mm(0.032 in).

Lead Solderability : MIL-STD-202, Method 208E

Order information

Packing

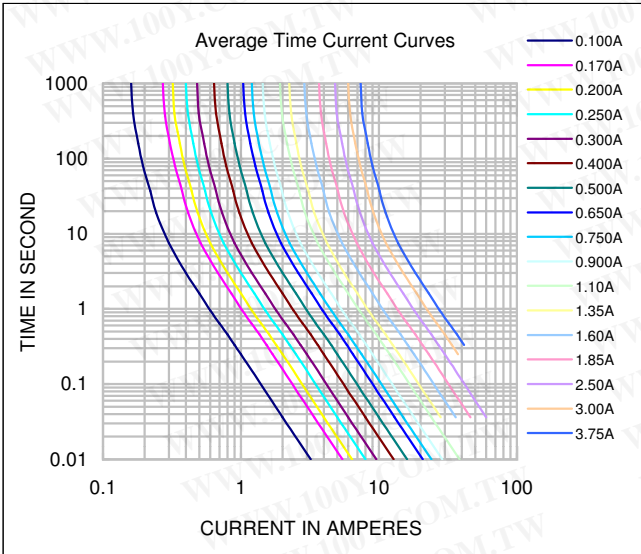
<u>R60</u>	<u>185</u>	<u>K or S</u>	<u>R or U</u>	<u>Model</u>	<u>Reel Q'ty</u>	<u>Bag Q'ty</u>
Radial type	Hold	K=Kink leads	R= Tape &	R60-010 ~ R60-090	3000	500
60 V	Current		Reel	R60-017	2500	500
	(A)	S=Straight	U= Bulk	R60-110 ~ R60-185	1500	500
		leads	packaged	R60-250 ~ R60-375	-	500

Tape & Reel packaging per EIA468-B standard.

R60 Series

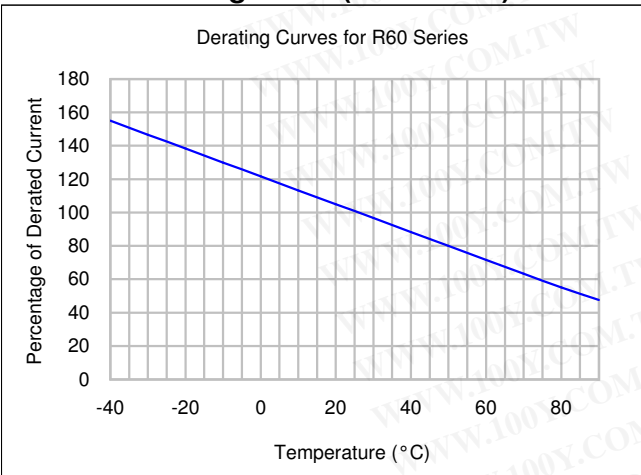
Sea & Land

Typical time-to-trip curve at 23 °C (R60 Series)



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Thermal derating curve (R60 Series)



I_{hold} versus temperature

Model	Maximum ambient operating temperature (T_{mao}) vs. hold current (I_{hold})								
	-40 °C	-20 °C	0 °C	20 °C	40 °C	50 °C	60 °C	70 °C	85 °C
R60-010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.04
R60-017	0.26	0.23	0.20	0.17	0.14	0.12	0.11	0.09	0.07
R60-020	0.31	0.27	0.24	0.20	0.16	0.14	0.13	0.11	0.08
R60-025	0.39	0.34	0.30	0.25	0.20	0.18	0.16	0.14	0.10
R60-030	0.47	0.41	0.36	0.30	0.24	0.22	0.19	0.16	0.12
R60-040	0.62	0.54	0.48	0.40	0.32	0.29	0.25	0.22	0.16
R60-050	0.78	0.68	0.60	0.50	0.41	0.36	0.32	0.27	0.20
R60-065	1.01	0.88	0.77	0.65	0.53	0.47	0.41	0.35	0.26
R60-075	1.16	1.02	0.89	0.75	0.61	0.54	0.47	0.41	0.30
R60-090	1.40	1.22	1.07	0.90	0.73	0.65	0.57	0.49	0.36
R60-110	1.71	1.50	1.31	1.10	0.89	0.79	0.69	0.59	0.44
R60-135	2.09	1.84	1.61	1.35	1.09	0.97	0.85	0.73	0.54
R60-160	2.48	2.18	1.90	1.60	1.30	1.15	1.01	0.86	0.64
R60-185	2.87	2.52	2.20	1.85	1.50	1.33	1.17	1.00	0.74
R60-250	3.88	3.40	2.98	2.50	2.03	1.80	1.58	1.35	1.00
R60-300	4.65	4.08	3.57	3.00	2.43	2.16	1.89	1.62	1.20
R60-375	5.81	5.10	4.46	3.75	3.04	2.70	2.36	2.03	1.50