

Polymer Positive Temperature Coefficient K60 Series

Features

- Radial leaded Devices
- Cured, flame retardant epoxy polymer insulating material meets UL94V-0 requirements
- Bulk packaging, or tape and reel available on most models
- Agency Approval: UL, ROHS

Applications

Almost anywhere there is a low voltage power supply, up to DC30V and a load to be protected, including:

- Automotive electronics
- Medical products
- Industrial controls

Dimensions

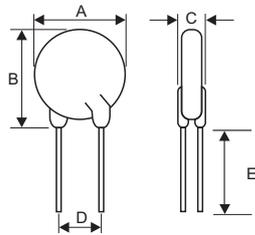


Fig 1

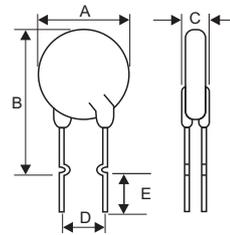


Fig 2

Dimensions in millimeters

Part Number	Fig	A(max.)	B(max.)	C(max.)	D(typ.)	E(min.)
K60-005	2	5.0	8.5	3	5.1	4.6
K60-010	2	5.5	9.5	3	5.1	4.6
K60-017	2	7.4	12.7	3	5.1	4.6
K60-020	2	7.4	12.7	3	5.1	4.6
K60-025	2	7.4	12.7	3	5.1	4.6
K60-030	2	7.4	13.0	3	5.1	4.6
K60-040	2	7.8	16.2	3	5.1	4.6
K60-050	2	7.8	16.2	3	5.1	4.6
K60-065	2	9.7	17.8	3	5.1	4.6
K60-075	2	10.4	18.4	3	5.1	4.6
K60-090	2	11.7	18.4	3	5.1	4.6
K60-110	1	13.0	18.0	3	5.1	4.6
K60-135	1	14.5	19.6	3	5.1	4.6
K60-160	1	16.3	21.3	3	5.1	4.6
K60-185	1	17.8	22.9	3	5.1	4.6
K60-200	1	17.8	22.9	3	5.1	4.6
K60-250	1	21.3	26.4	3	10.2	4.6
K60-300	1	21.3	26.4	3	10.2	4.6
K60-375	1	28.5	33.5	3	10.2	4.6
K60-500	1	28.5	33.5	3	10.2	4.6

Physical Characteristics

Material:Leads

K60-005~050	Tin plated copper,24AWG,0.50mm
K60-065~090	Tin plated copper,22AWG,0.60mm
K60-110~500	Tin plated copper,20AWG,0.80mm

Electrical Characteristics(25°C)

Part Number	I _{hold} (A)	I _{trip} (A)	V _{max.} (V)	I _{max.} (A)	P _{d max.} (W)	Maximum Time To Trip		Resistance		
						Current (A)	Time (Sec.)	R _{min.} (Ω)	R _{max.} (Ω)	R1 _{max.} (Ω)
K60-005	0.05	0.10	60	40	0.26	0.25	5	7.30	20.00	30.00
K60-010	0.10	0.20	60	40	0.38	0.50	5	2.50	7.50	12.00
K60-017	0.17	0.34	60	40	0.48	0.85	5	2.00	5.21	8.00
K60-020	0.20	0.40	60	40	0.41	1.00	5	1.50	2.84	4.49
K60-025	0.25	0.50	60	40	0.45	1.25	5	1.00	1.95	3.00
K60-030	0.30	0.60	60	40	0.49	1.50	5	0.76	1.38	2.20
K60-040	0.40	0.80	60	40	0.56	2.00	5	0.45	0.88	1.40
K60-050	0.50	1.00	60	40	0.77	2.50	5	0.40	0.79	1.20
K60-065	0.65	1.30	60	40	0.88	3.25	5	0.31	0.50	0.74
K60-075	0.75	1.50	60	40	0.92	3.75	5	0.25	0.42	0.62
K60-090	0.90	1.80	60	40	0.99	4.50	5	0.20	0.33	0.49
K60-110	1.10	2.20	60	40	1.50	5.50	8	0.15	0.27	0.40
K60-135	1.35	2.70	60	40	1.70	6.75	8	0.12	0.21	0.32
K60-160	1.60	3.20	60	40	1.90	8.00	8	0.09	0.16	0.24
K60-185	1.85	3.70	60	40	2.10	9.25	8	0.08	0.14	0.21
K60-200	2.00	4.00	60	40	2.30	10.00	8	0.07	0.14	0.21
K60-250	2.50	5.00	60	40	2.50	12.50	8	0.05	0.10	0.15
K60-300	3.00	6.00	60	40	2.80	15.00	8	0.04	0.08	0.12
K60-375	3.75	7.50	60	40	3.20	18.75	24	0.03	0.06	0.10
K60-500	5.00	10.00	60	40	3.50	25.00	24	0.02	0.06	0.10

Notes :

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.

V_{max} = Maximum operating volatge device can withstand without damage at ratde current(I_{max}).

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

P_d = Typical power dissipatde from device when in the tripped state in 25°C still air.

R_{min} = Minimum device resistance prior to tripping at 25°C.

R_{max} = Maximum device resistance prior to tripping at 25°C.

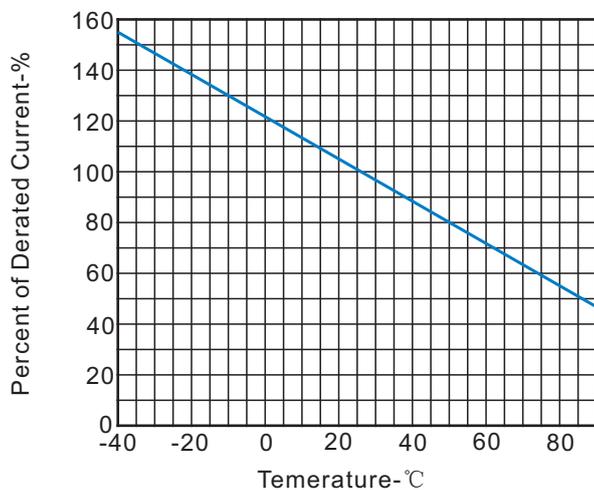
R1_{max} = Maximum resistance of device at 25°C measured one hour after trippde tripping.

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

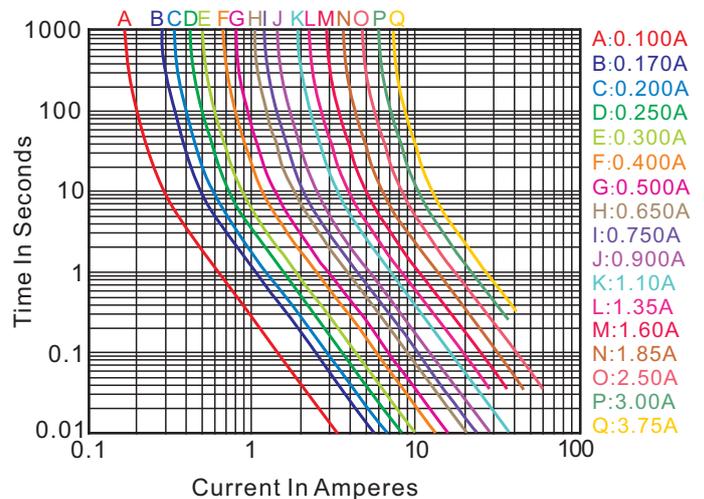
Thermal Derating Chart-I_{hold}(A)

Maximum ambient operating temperature (T _{mao})vs.hold current (I _{hold})									
Part Number	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
K60-005	0.077	0.068	0.060	0.050	0.041	0.036	0.032	0.027	0.020
K60-010	0.180	0.136	0.119	0.100	0.081	0.072	0.063	0.054	0.040
K60-017	0.280	0.231	0.202	0.170	0.138	0.122	0.107	0.092	0.068
K60-020	0.340	0.272	0.238	0.200	0.162	0.144	0.126	0.108	0.080
K60-025	0.420	0.340	0.298	0.250	0.203	0.180	0.158	0.135	0.100
K60-030	0.520	0.408	0.357	0.300	0.243	0.216	0.189	0.162	0.120
K60-040	0.660	0.544	0.476	0.400	0.324	0.288	0.252	0.216	0.160
K60-050	0.830	0.680	0.595	0.500	0.405	0.360	0.315	0.270	0.200
K60-065	1.100	0.884	0.774	0.650	0.527	0.468	0.410	0.351	0.260
K60-075	1.260	1.020	0.893	0.750	0.608	0.540	0.473	0.405	0.300
K60-090	1.520	1.224	1.071	0.900	0.729	0.648	0.567	0.486	0.360
K60-110	1.820	1.496	1.309	1.100	0.891	0.792	0.693	0.594	0.440
K60-135	2.200	1.836	1.607	1.350	1.094	0.972	0.851	0.729	0.540
K60-160	2.600	2.176	1.904	1.600	1.296	1.152	1.008	0.864	0.640
K60-185	3.000	2.516	2.202	1.850	1.499	1.332	1.166	0.999	0.740
K60-200	3.210	2.720	2.380	2.000	1.620	1.440	1.260	1.080	0.800
K60-250	4.050	3.400	2.975	2.500	2.025	1.800	1.575	1.350	1.000
K60-300	4.820	4.080	3.570	3.000	2.430	2.160	1.890	1.620	1.200
K60-375	6.020	5.100	4.463	3.750	3.038	2.700	2.363	2.025	1.500
K60-500	8.000	6.800	5.950	5.000	4.050	3.600	3.150	2.700	2.000

Thermal Derating Curve



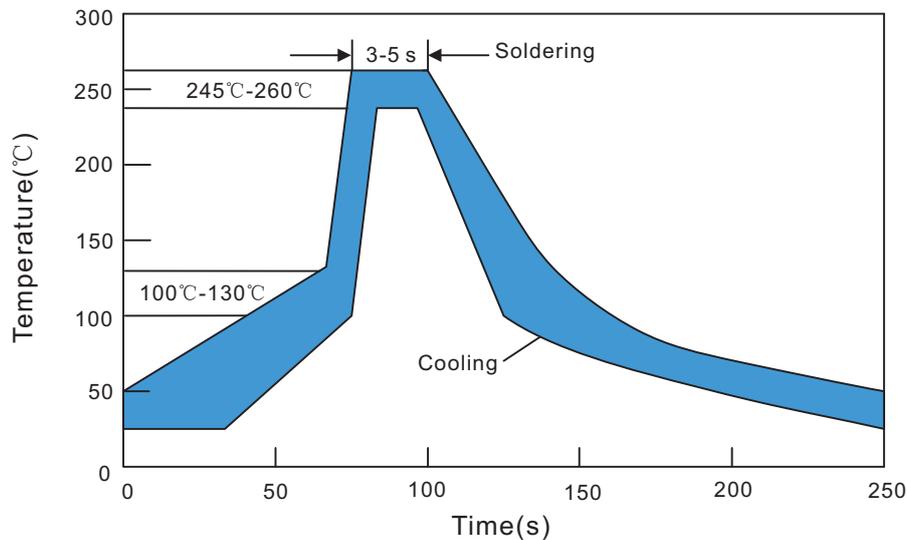
Typical Time To Trip At 25°C



Environmental Specifications

Test	Conditions	Resistance Change
Passive aging	+85°C, 1000 hrs.	±8% typical
Humidity aging	+85°C, 85% R.H. , 168 hours	±8% typical
Thermal shock	+125°C to -55°C, 10 times	±12% typical
Resistance to solvent	MIL-STD-202, Method 215	No change
Vibration	MIL-STD-202, Method 201	No change
Ambient operating conditions : - 40 °C to +85 °C		

Recommended Soldering Conditions



Items	Conditions
Pre-Heating Zone	Refer to the condition recommended by the flux manufacturer. Maximum ramping rate should not exceed 4 °C/sec.
Soldering Zone	Maximum solder temperature should not exceed 260 °C .
Cooling Zone	Forced cooling.

Packageing Information

Part Number	Packaging Option	Quantity
K60-005~110	Bulk	1000pcs per bag
K60-135~200	Bulk	500pcs per bag
K60-250~500	Bulk	200pcs per bag