TFPI60V Series

Recoverable Fuse

TOP-EMC

FEATURES

- Less Characteristics change after mounting and energization
- RoHS Compliant and Halogen Free
- Wide range of Operating Temperature(-40 to 85 degree)
- Voltage up to 60V
- Current 0.1 to 3.75A

APPLICATIONS

- Automotive
- (LED Lamp/Navigation/Motor/Electrical Component)
- Factory Automation Equipment(Motor Drive, Sensor controller)
- Charger

PRODUCT IDENTIFICATION

TFPI ① 60V ② 010 ③

- ① Type ：Resettable Fuse（DIP）
- ② Voltage: 60V=60V
- ③ Electricity: 010=0.1A

Environmental Specifications

Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs.	±5% typical
Humidity aging	+85°C, 85% R.H. , 168 hours	±5% typical
Thermal shock	+85°C to -40°C, 20 times	±33% 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		
Maximum surface temperature of the device in the tripped state is 125 °C		

Performance Specification

Model	V_{max}	I_{max}	I_{hold}	I_{trip}	P_d	Maximum Time To Trip		Resistance		
					Typ.	Current	Time	Rimin	Rimax	R1max
	(Vdc)	(A)	(A)	(A)	(W)	(A)	(Sec)	(Ω)	(Ω)	(Ω)
TFPI60V010	60	40	0.10	0.20	0.38	0.50	4.0	2.50	4.50	7.50
TFPI60V017	60	40	0.17	0.34	0.48	0.85	3.0	2.50	5.21	8.00
TFPI60V020	60	40	0.20	0.40	0.41	1.00	2.2	1.25	2.75	4.40
TFPI60V025	60	40	0.25	0.50	0.45	1.25	2.5	0.65	1.95	3.00
TFPI60V030	60	40	0.30	0.60	0.49	1.50	3.0	0.45	1.33	2.10
TFPI60V040	60	40	0.40	0.80	0.56	2.00	3.8	0.40	0.86	1.29
TFPI60V050	60	40	0.50	1.00	0.77	2.50	4.0	0.35	0.77	1.17
TFPI60V065	60	40	0.65	1.30	0.88	3.25	5.3	0.25	0.48	0.72
TFPI60V075	60	40	0.75	1.50	0.92	3.75	6.3	0.20	0.40	0.60
TFPI60V090	60	40	0.90	1.80	0.99	4.50	7.2	0.15	0.31	0.47
TFPI60V110	60	40	1.10	2.20	1.50	5.50	8.2	0.13	0.25	0.38
TFPI60V135	60	40	1.35	2.70	1.70	6.75	9.6	0.10	0.19	0.30
TFPI60V160	60	40	1.60	3.20	1.90	8.00	11.4	0.07	0.14	0.22
TFPI60V185	60	40	1.85	3.70	2.10	9.25	12.6	0.06	0.12	0.19
TFPI60V250	60	40	2.50	5.00	2.50	12.50	15.6	0.04	0.08	0.13
TFPI60V300	60	40	3.00	6.00	2.80	15.00	19.8	0.03	0.06	0.10
TFPI60V375	60	40	3.75	7.50	3.20	18.75	24.0	0.02	0.05	0.08

V max = Maximum operating voltage device can withstand without damage at rated current (Imax).

I max = Maximum fault current device can withstand without damage at rated voltage (Vmax).

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.

Pd = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

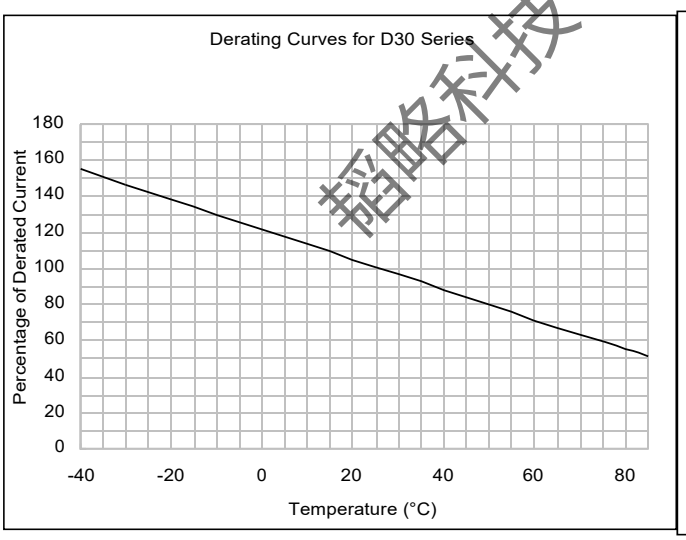
Ri min/max = Minimum/Maximum device resistance prior to tripping at25°C.

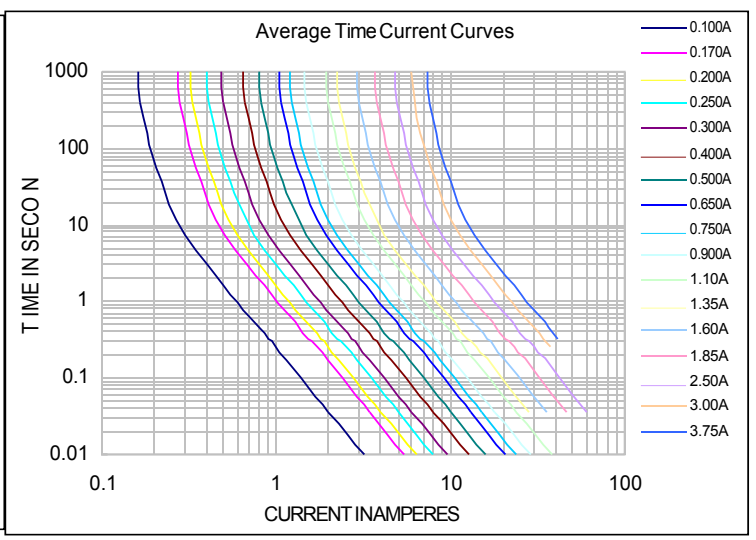
R1max = Maximum device resistance is measured one hour post reflow.

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

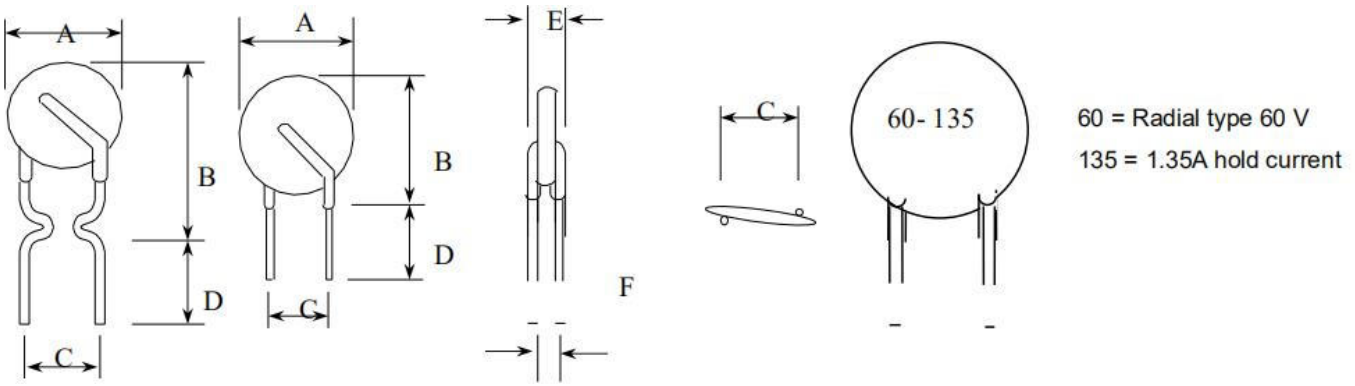
Ihold Versus Temperature

Model	Maximum ambient operating temperature (T_{mao}) vs. hold current (I_{hold})								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
TFPI60V010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.04
TFPI60V017	0.26	0.23	0.20	0.17	0.14	0.12	0.11	0.09	0.07
TFPI60V020	0.31	0.27	0.24	0.20	0.16	0.14	0.13	0.11	0.08
TFPI60V025	0.39	0.34	0.30	0.25	0.20	0.18	0.16	0.14	0.10
TFPI60V030	0.47	0.41	0.36	0.30	0.24	0.22	0.19	0.16	0.12
TFPI60V040	0.62	0.54	0.48	0.40	0.32	0.29	0.25	0.22	0.16
TFPI60V050	0.78	0.68	0.60	0.50	0.41	0.36	0.32	0.27	0.20
TFPI60V065	1.01	0.88	0.77	0.65	0.53	0.47	0.41	0.35	0.26
TFPI60V075	1.16	1.02	0.89	0.75	0.61	0.54	0.47	0.41	0.30
TFPI60V090	1.40	1.22	1.07	0.90	0.73	0.65	0.57	0.49	0.36
TFPI60V110	1.71	1.50	1.31	1.10	0.89	0.79	0.69	0.59	0.44
TFPI60V135	2.09	1.84	1.61	1.35	1.09	0.97	0.85	0.73	0.54
TFPI60V160	2.48	2.18	1.90	1.60	1.30	1.15	1.01	0.86	0.64
TFPI60V185	2.87	2.52	2.20	1.85	1.50	1.33	1.17	1.00	0.74
TFPI60V250	3.88	3.40	2.98	2.50	2.03	1.80	1.58	1.35	1.00
TFPI60V300	4.65	4.08	3.57	3.00	2.43	2.16	1.89	1.62	1.20
TFPI60V375	5.81	5.10	4.46	3.75	3.04	2.70	2.36	2.03	1.50





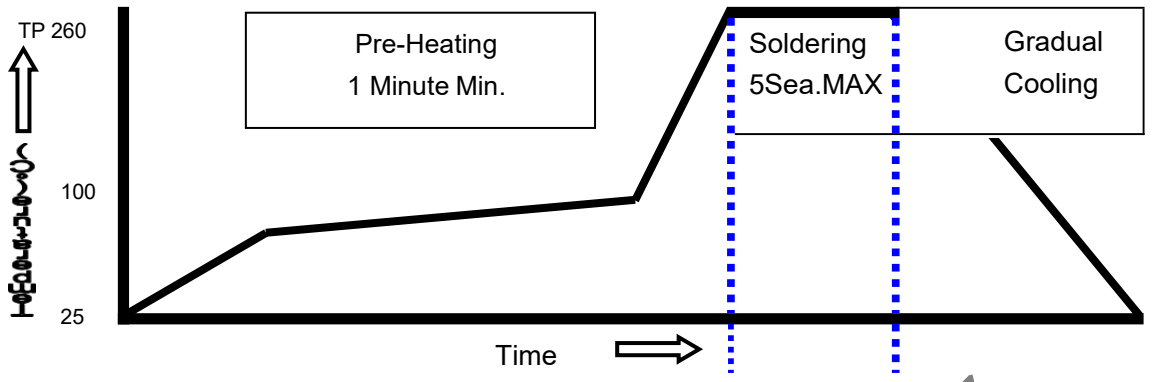
Physical Dimensions(mm.)



Model	A	B	C	D	E	F	Lead
	Max.	Max.	Typ.	Min.	Max.	Max.	Style
TFPI60V010	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
TFPI60V017	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
TFPI60V020	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
TFPI60V025	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
TFPI60V030	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
TFPI60V040	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
TFPI60V050	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
TFPI60V065	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
TFPI60V075	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
TFPI60V090	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
TFPI60V110	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
TFPI60V135	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
TFPI60V160	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
TFPI60V185	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
TFPI60V250	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
TFPI60V300	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
TFPI60V375	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

Materials : TFPI60V010 : Tin-plated nickel-copper alloy, 0.205mm2 (24AWG), Φ0.51mm(0.020 in).
TFPI60V017 ~ 040: Tin-plated copper-clad steel, 0.205mm2 (24AWG), Φ0.51mm(0.020 in).
TFPI60V050 ~ 090: Tin-plated copper , 0.205mm2 (24AWG), Φ0.51mm(0.020 in).
TFPI60V110 ~ 375: Tin-plated copper , 0.52mm2 (20AWG), Φ0.81mm(0.032 in).
Lead Solderability : MIL-STD-202, Method 208E.

Soldering Parameters



WAVE SOLDERING INFORMATIONS	
Pre-Heating Zone	Max. ramping rate should not exceed 4℃/Sec.
Soldering Zone	Max. solder temperature should not exceed 260℃
Cooling Zone	Cooling by natural convection in air.
◎ Specifications are subject to change without notice.	

CONTACT INFORMATION

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