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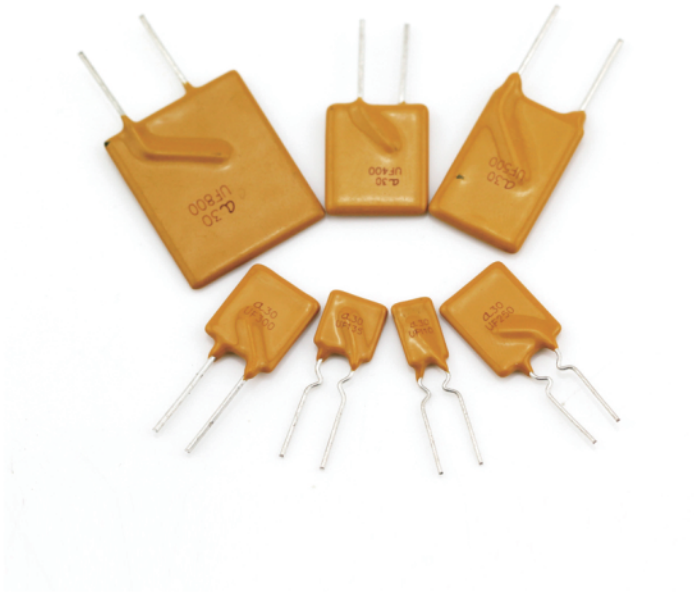
PRODUCT DATASHEET

PTC Devices

A30 Series PTC Devices



Description

The JDTFUSE A30 Series radial leaded device is designed to provide overcurrent protection for low voltage (≤30V) applications where space is not a concern and resettable protection is preferred.

Features

- Cured, flame retardant epoxy polymer insulating material meets UL 94V-0 requirements
- Fast time-to-trip
- RoHS compliant, Lead-Free and Halogen-Free*

Agency Approvals

Agency	File Number
c UL us	E472196

Applications

- USB hubs, ports and peripherals
- Computers & peripherals
- Motor protection
- General electronics
- Automotive applications

Regulation	Standard
RoHS	2002/95/EC
Halogen Free	EN14582

Performance Specification

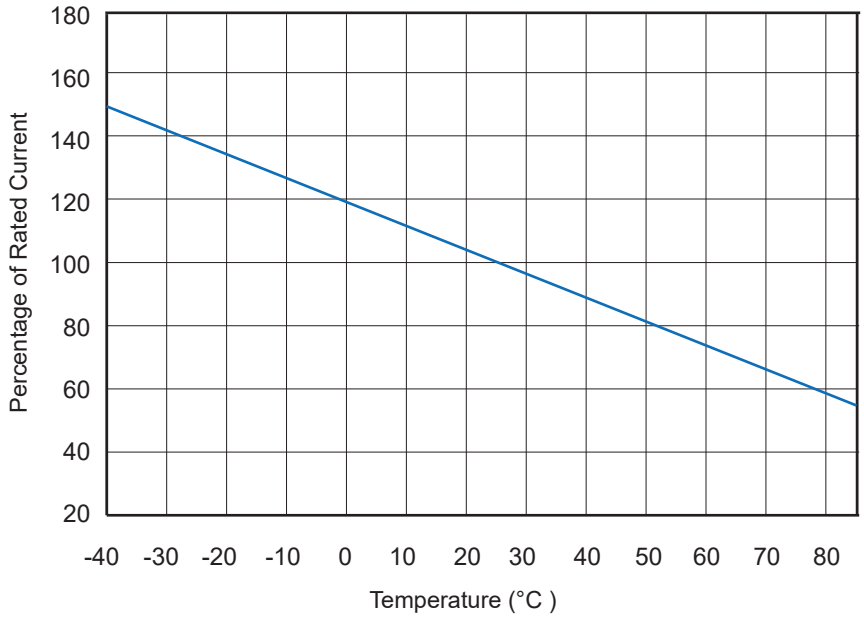
Model	V max (V dc)	I max (A)	I hold @25°C (A)	I trip @25°C (A)	P d Typ. (W)	Maximum Time To Trip		Resistance	
						Current (A)	Time (Sec)	R i min (Ω)	R1max (Ω)
A30-030	30	40	0.30	0.60	0.44	1.50	3.00	0.300	1.600
A30-040	30	40	0.40	0.80	0.45	2.00	5.00	0.200	1.300
A30-050	30	40	0.50	1.00	1.00	2.50	10.0	0.290	1.100
A30-070	30	40	0.70	1.40	1.00	3.50	10.0	0.140	0.450
A30-075	30	40	0.75	1.50	1.00	3.75	10.0	0.120	0.400
A30-090	30	40	0.90	2.00	1.00	4.50	10.0	0.070	0.180
A30-110	30	40	1.10	2.50	1.00	5.50	10.0	0.050	0.150
A30-135	30	40	1.35	2.70	1.00	6.75	10.0	0.040	0.120
A30-160	30	40	1.60	3.20	1.00	8.00	10.0	0.030	0.105
A30-185	30	40	1.85	3.70	1.00	9.25	10.0	0.030	0.090
A30-200	30	40	2.00	4.00	1.50	10.0	12.0	0.030	0.085
A30-250	30	40	2.50	5.50	1.20	12.5	10.3	0.020	0.060
A30-300	30	40	3.00	6.00	2.00	15.0	10.8	0.020	0.075
A30-400	30	40	4.00	8.00	2.50	20.0	12.7	0.010	0.045
A30-500	30	40	5.00	10.00	3.00	25.0	14.5	0.010	0.045
A30-600	30	40	6.00	12.00	3.50	30.0	16.0	0.005	0.030
A30-700	30	40	7.00	14.00	3.80	35.0	17.5	0.005	0.030
A30-800	30	40	8.00	16.00	4.00	40.0	18.8	0.005	0.030
A30-900	30	40	9.00	18.00	4.20	40.0	30.0	0.005	0.015

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 (Imax).
I_{max} = Maximum fault current device can withstand without damage at rated voltage (V max).
P_d = Power dissipation when device is in the tripped state in 23°C still air environment at rated voltage.
$R_{i\ min/max}$ = Minimum/Maximum device resistance prior to tripping at 23°C.
R_{1max} = Maximum device resistance is measured one hour post reflow.
CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

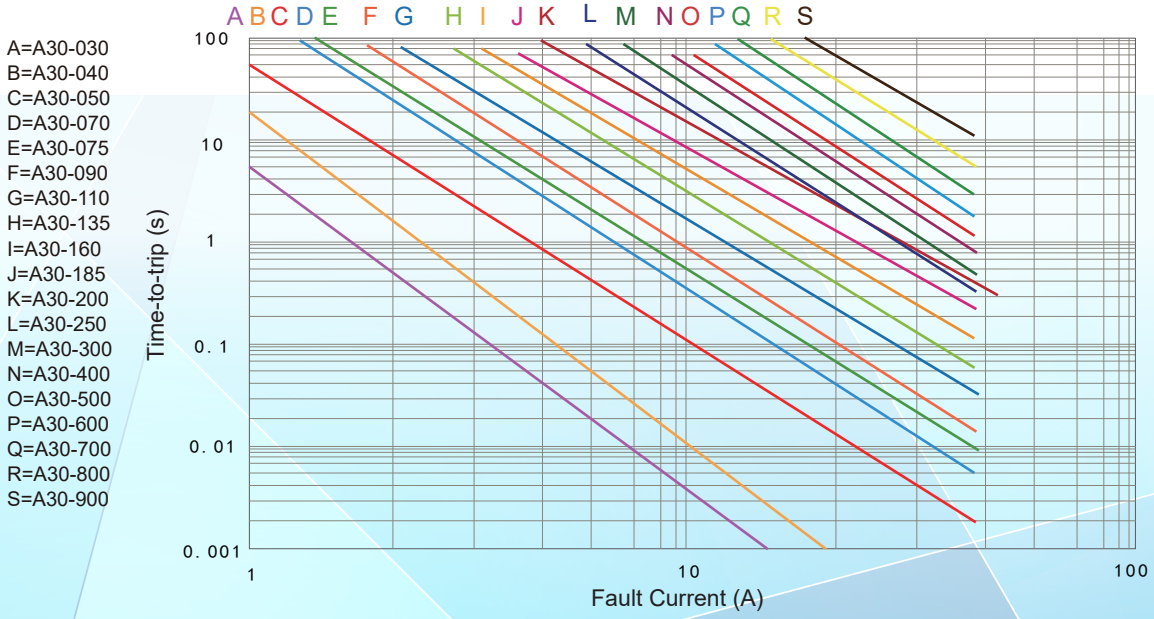
Environmental Specifications

Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs.	±5% typical
Humidity aging	+85°C, 85% R.H. , 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		

Thermal Derating Curve



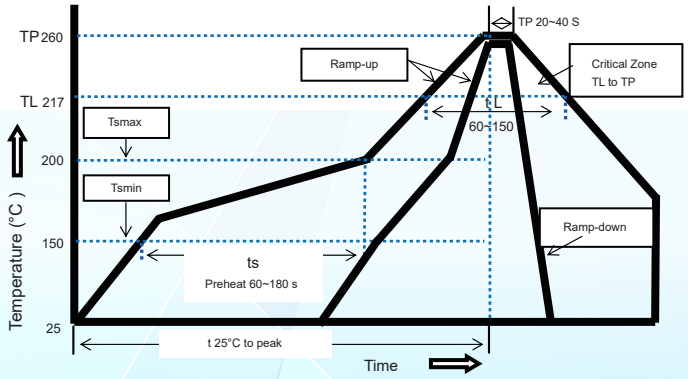
Average Time-Current Curve



I_{hold} Versus Temperature

Model	Maximum ambient operating temperature (T_{mao}) vs. hold current (I_{hold})									
	- 40°C	- 20°C	0°C	23°C	30°C	40°C	50°C	60°C	70°C	85°C
A30-030	0.435	0.402	0.348	0.300	0.276	0.252	0.228	0.210	0.183	0.150
A30-040	0.580	0.536	0.464	0.400	0.368	0.336	0.304	0.280	0.244	0.200
A30-050	0.725	0.650	0.575	0.500	0.460	0.420	0.380	0.350	0.305	0.250
A30-070	1.015	0.910	0.805	0.700	0.644	0.588	0.532	0.490	0.427	0.350
A30-075	1.088	0.975	0.863	0.750	0.690	0.630	0.570	0.525	0.458	0.375
A30-090	1.305	1.170	1.035	0.900	0.828	0.756	0.684	0.630	0.549	0.450
A30-110	1.595	1.430	1.265	1.100	1.012	0.924	0.836	0.770	0.671	0.550
A30-135	1.958	1.755	1.553	1.350	1.242	1.134	1.026	0.945	0.824	0.675
A30-160	2.320	2.080	1.840	1.600	1.472	1.344	1.216	1.120	0.976	0.800
A30-185	2.683	2.405	2.128	1.850	1.702	1.554	1.406	1.295	1.129	0.925
A30-200	2.900	2.680	2.320	2.000	1.840	1.680	1.520	1.400	1.220	1.000
A30-250	3.625	3.250	2.875	2.500	2.300	2.100	1.900	1.750	1.525	1.250
A30-300	4.350	3.900	3.450	3.000	2.760	2.520	2.280	2.100	1.830	1.500
A30-400	5.800	5.200	4.600	4.000	3.680	3.360	3.040	2.800	2.440	2.000
A30-500	7.250	6.500	5.750	5.000	4.600	4.200	3.800	3.500	3.050	2.500
A30-600	8.700	7.800	6.900	6.000	5.520	5.040	4.560	4.200	3.660	3.000
A30-700	10.15	9.100	8.050	7.000	6.440	5.880	5.320	4.900	4.270	3.500
A30-800	11.60	10.40	9.200	8.000	7.360	6.720	6.080	5.600	4.880	4.000
A30-900	13.05	11.70	10.35	9.000	8.280	7.560	6.840	6.300	5.490	4.500

Soldering Parameters



Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free

Recommended maximum paste thickness is 0.25mm

Devices can be cleaned using standard industry methods and solvents.

Note 1:All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (Ts max to T p)	3°C/second mac.
Preheat	
-Temperature Min(Ts min)	150°C
-Temperature Max(Ts max)	200°C
-Time(Ts min to Ts max)	60~180 seconds
Time maintained above:	
-Temperature(TL)	217°C
-Time(tL)	60~150 seconds
Peak Temperature(Tp)	260°C
Ramp-Down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max
Storage Condition	0°C~35°C,≤70%RH

Physical Dimensions(mm.)

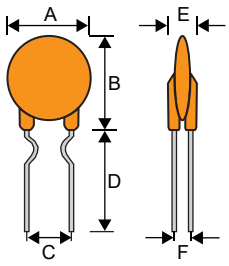


FIG 1

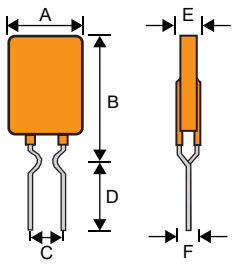


FIG 2

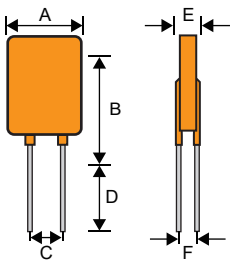


FIG 3

Model	A Max.	B Max.	C Typ.	D Min.	E Max.	F Typ.	Lead φ	FIG
A30-030	7.00	12.80	5.1±0.5	7.6	4.40	1.00	0.6	1
A30-040	7.00	12.80	5.1±0.5	7.6	4.40	1.00	0.6	1
A30-050	7.40	14.00	5.1±0.5	7.6	3.00	1.00	0.5	1
A30-070	7.40	15.00	5.1±0.5	7.6	3.00	1.00	0.5	2
A30-075	7.40	15.00	5.1±0.5	7.6	3.00	1.00	0.5	2
A30-090	7.40	16.50	5.1±0.5	7.6	3.00	1.00	0.5	2
A30-110	7.40	16.50	5.1±0.5	7.6	3.00	1.00	0.5	2
A30-135	8.90	15.50	5.1±0.5	7.6	3.00	1.10	0.6	2
A30-160	8.90	17.30	5.1±0.5	7.6	3.00	1.10	0.6	2
A30-185	10.20	18.20	5.1±0.5	7.6	3.00	1.10	0.6	2
A30-200	9.00	15.50	5.1±0.5	7.6	4.40	1.10	0.6	2
A30-250	11.40	20.40	5.1±0.5	7.6	3.00	1.10	0.6	2
A30-300	11.40	17.30	5.1±0.5	7.6	3.00	1.30	0.8	3
A30-400	14.00	20.20	5.1±0.5	7.6	3.00	1.30	0.8	3
A30-500	14.00	25.00	10.2±0.5	7.6	3.00	1.30	0.8	3
A30-600	16.50	25.10	10.2±0.5	7.6	3.00	1.30	0.8	3
A30-700	19.10	27.80	10.2±0.5	7.6	3.00	1.30	0.8	3
A30-800	21.60	29.90	10.2±0.5	7.6	3.00	1.30	0.8	3
A30-900	25.50	29.90	10.2±0.5	7.6	3.00	1.30	0.8	3

PHYSICAL SPECIFICATIONS :

Lead Materials : A30-050~A30-185:Tinned copper clad steel wire (CP wire);
A360-250~A30-900:Tinned copper wire.

Lead Solderability: MIL-STD-202.

Encapsulation: Flame retardant epoxy resin, This meets the requirements of UL-94V-0.

Packaging Quantity

Model	Bag QTY
A30 Series	500
Tape & Reel packaging per EIA468-B standard.	

Cross Reference

Model	Cross Reference		
	Tyco / PolySwitch®	Bourns / POLY-FUSE®	Polytronics / EVERFUSE®
A30-030	-	-	-
A30-040	-	-	-
A30-050	-	-	-
A30-065	-	-	-
A30-075	-	-	-
A30-075	-	-	-
A30-090	RUEF090	MF-R090-0-9	RLD30P090UF
A30-110	RUEF110	MF-R110	RLD30P110UF
A30-135	RUEF135	MF-R135	RLD30P135UF
A30-160	RUEF160	MF-R160	RLD30P160UF
A30-185	RUEF185	MF-R185	RLD30P185UF
A30-250	RUEF250	MF-R250	RLD30P250UF
A30-300	RUEF300	MF-R300	RLD30P300UF
A30-400	RUEF400	MF-R400	RLD30P400UF
A30-500	RUEF500	MF-R500	RLD30P500UF
A30-600	RUEF600	MF-R600	RLD30P600UF
A30-700	RUEF700	MF-R700	RLD30P700UF
A30-800	RUEF800	MF-R800	RLD30P800UF
A30-900	RUEF900	MF-R900	RLD30P900UF