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PRODUCT DATASHEET

PTC Devices

A72 Series PTC Devices

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Description

The JDTFUSE A72 Series is designed to provide overcurrent protection to 72Vdc maximum voltage with a maximum 40A short circuit rating.

Features

- 72Vdc max voltage w/max 40A short circuit rating
- RoHS compliant, Lead-Free and HalogenFree*
- Resettable feature
- Ideal for a broad range of general electronics using a low voltage power supply

Agency Approvals

Agency	File Number
c UL us	E472196
BAUART GEPRÜFT TYPE APPROVED	pending

Regulation	Standard
RoHS	2002/95/EC
Halogen Free	EN14582

Applications

- Load protection on wide range of low voltage power supplies
- Computers
- Computers peripherals
- General electronics

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)
A72-020	72	40	0.20	0.40	0.41	1.00	2.2	1.25	4.40
A72-025	72	40	0.25	0.50	0.45	1.25	2.5	0.65	3.00
A72-030	72	40	0.30	0.72	0.49	1.50	3.0	0.45	2.10
A72-040	72	40	0.40	0.80	0.56	2.00	3.8	0.40	1.29
A72-050	72	40	0.50	1.00	0.77	2.50	4.0	0.35	1.17
A72-065	72	40	0.65	1.30	0.88	3.25	5.3	0.25	0.72
A72-075	72	40	0.75	1.50	0.92	3.75	6.3	0.25	0.62
A72-090	72	40	0.90	1.80	0.99	4.50	7.2	0.20	0.49
A72-110	72	40	1.10	2.20	1.50	5.50	8.2	0.15	0.40
A72-135	72	40	1.35	2.70	1.70	6.75	9.6	0.12	0.32
A72-160	72	40	1.60	3.20	1.90	8.00	11.4	0.09	0.24
A72-185	72	40	1.85	3.70	2.10	9.25	12.6	0.08	0.21
A72-250	72	40	2.50	5.00	2.50	12.50	15.6	0.04	0.13
A72-300	72	40	3.00	6.00	2.80	15.00	19.8	0.03	0.10
A72-375	72	40	3.75	7.50	3.20	18.75	24.0	0.02	0.08
A72-500	72	40	5.00	10.0	3.20	18.75	24.0	0.02	0.08

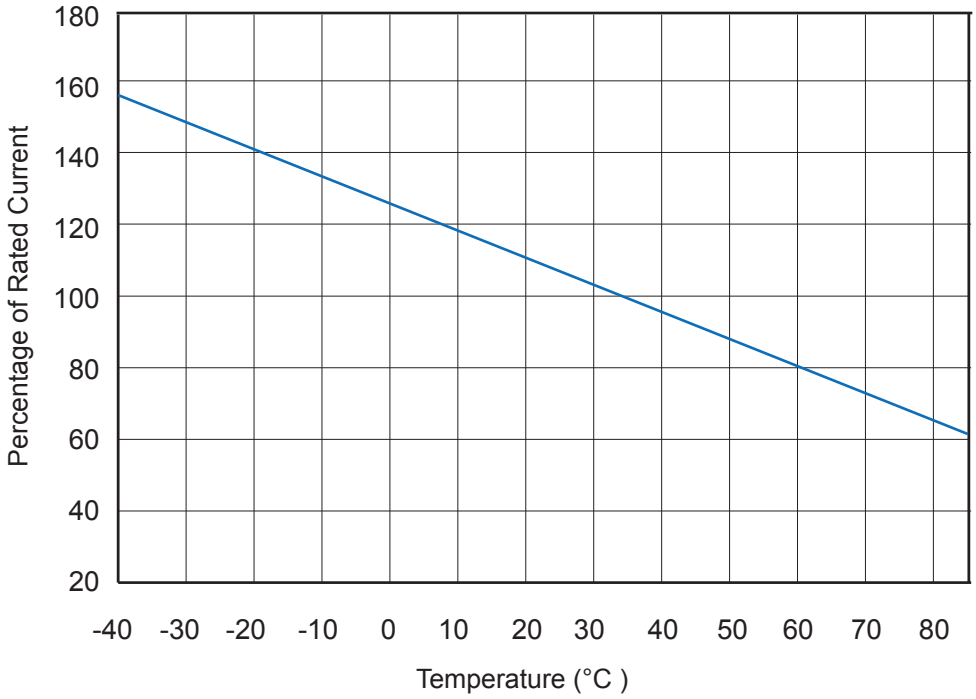
I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.
I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.
V_{max} = Maximum operating voltage device can withstand without damage at rated current (Imax).
I_{max} = Maximum fault current device can withstand without damage at rated voltage (V max).
P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.
$R_{i\ min/max}$ = Minimum/Maximum device resistance prior to tripping at 25°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

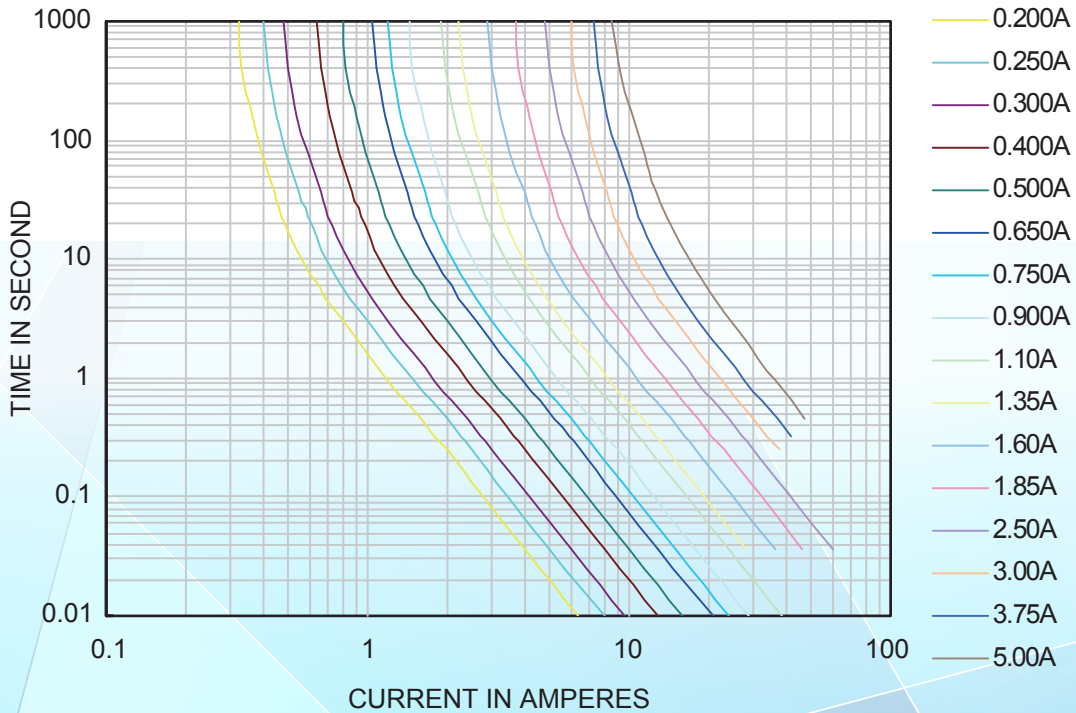
Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs.	±5% typical
Humidity aging	+85°C, 85% R.H. , 168 hours	±5% typical
Thermal shock	+85°C to -40°C, 20 times	±33% typical
Resistance to solvent	MIL-STD-202,Method 215	No change
Vibration	MIL-STD-202,Method 201	No change
Ambient operating conditions : - 40 °C to +85 °C		
Maximum surface temperature of the device in the tripped state is 125 °C		

Thermal Derating Curve

Derating Curves for A72 Series



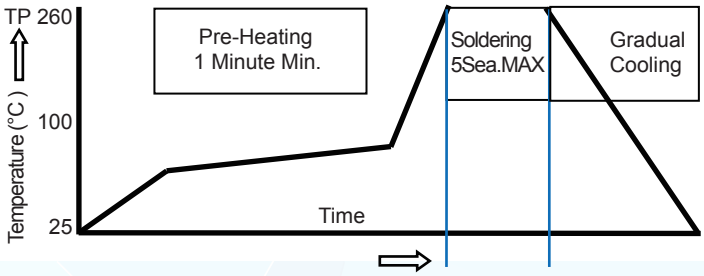
Average Time-Current Curve



I_{hold} Versus Temperature

Model	Maximum ambient operating temperature (T_{mao}) vs. hold current (I_{hold})								
	- 40°C	- 20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
A72-020	0.31	0.27	0.24	0.20	0.16	0.14	0.13	0.11	0.08
A72-025	0.39	0.34	0.30	0.25	0.20	0.18	0.16	0.14	0.10
A72-030	0.47	0.41	0.36	0.30	0.24	0.22	0.19	0.16	0.12
A72-040	0.62	0.54	0.48	0.40	0.32	0.29	0.25	0.22	0.16
A72-050	0.78	0.68	0.60	0.50	0.41	0.36	0.32	0.27	0.20
A72-065	1.01	0.88	0.77	0.65	0.53	0.47	0.41	0.35	0.26
A72-075	1.16	1.02	0.89	0.75	0.61	0.54	0.47	0.41	0.30
A72-090	1.40	1.22	1.07	0.90	0.73	0.65	0.57	0.49	0.36
A72-110	1.71	1.50	1.31	1.10	0.89	0.79	0.69	0.59	0.44
A72-135	2.09	1.84	1.61	1.35	1.09	0.97	0.85	0.73	0.54
A72-160	2.48	2.18	1.90	1.60	1.30	1.15	1.01	0.86	0.64
A72-185	2.87	2.52	2.20	1.85	1.50	1.33	1.17	1.00	0.74
A72-250	3.88	3.40	2.98	2.50	2.03	1.80	1.58	1.35	1.00
A72-300	4.65	4.08	3.57	3.00	2.43	2.16	1.89	1.62	1.20
A72-375	5.81	5.10	4.46	3.75	3.04	2.70	2.36	2.03	1.50
A72-500	6.59	5.78	5.15	4.50	3.64	3.00	2.65	2.42	1.60

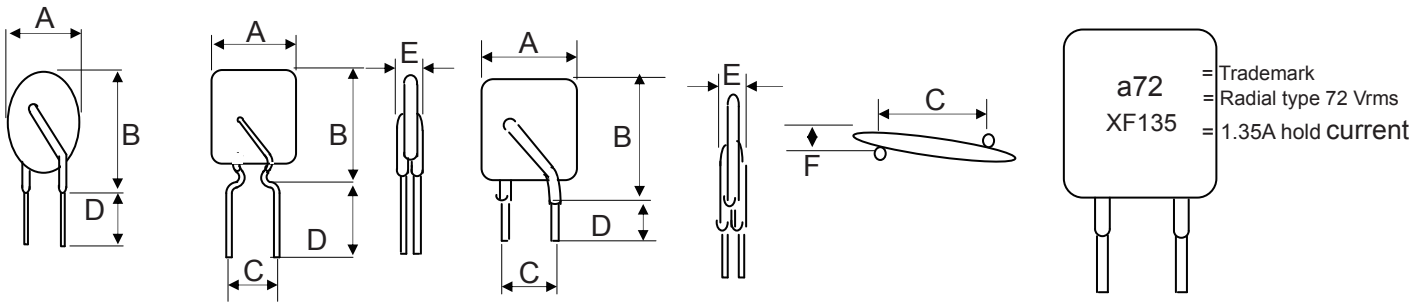
Soldering Parameters



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℃/second mac.
Preheat	
-Temperature Min(Ts min)	150℃
-Temperature Max(Ts max)	200℃
-Time(Ts min to Ts max)	60~180 seconds
Time maintained above:	
-Temperature(TL)	217℃
-Time(tL)	60~150 seconds
Peak Temperature(Tp)	260℃
Ramp-Down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max
Storage Condition	0℃~35℃,≤70%RH

Physical Dimensions(mm.)



Model	A Max.	B Max.	C Typ.	D Min.	E Max.	F Max.	Lead Style
A72-020	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
A72-025	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
A72-030	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
A72-040	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
A72-050	6.45/0.31	10.8/0.54	5.1/0.20	8.4/0.3	2.4/0.12	1.2/0.05	Kink
A72-065	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
A72-075	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
A72-090	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
A72-110	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
A72-135	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
A72-160	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
A72-185	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
A72-250	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
A72-300	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
A72-375	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
A72-500	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

PHYSICAL SPECIFICATIONS :

Materials : Leads A72-017 ~ 040: Tin-plJted copper-clJd steel, 0.205mm2 (24JWG), Φ0.51mm(0.020 in).
A72-050 ~ 090: Tin-plJted copper , 0.205mm2 (24JWG), Φ0.51mm(0.020 in).
A72-110 ~ 500: Tin-plJted copper , 0.52mm2 (20JWG), Φ0.81mm(0.032 in).
Lead Solderability : MIL-STD-202, Method 208E

Packaging Quantity

Order information				Packing		
A72	185	K or S	R or U	Model	Reel QTY	Bag QTY
Radial type	Hold	K= Kink leads	R= Tape &	A72-020 ~ A72-090	3000	500
	Current		Reel			
72 V	(A)	S=Straight	U= Bulk	A72-110 ~ A72-185	1500	500
		leads	packaged	A72-250 ~ A72-500	-	500

Tape & Reel packaging per EIA468-B standard.

Cross Reference

Model	Cross Reference		
	Tyco / PolySwitch®	Bourns / POLY-FUSE®	Polytronics / EVERFUSE®
A72-020	RXEF020	MF-R020	RLD72P020XF
A72-025	RXEF025	MF-R025	RLD72P025XF
A72-030	RXEF030	MF-R030	RLD72P030XF
A72-040	RXEF040	MF-R040	RLD72P040XF
A72-050	RXEF050	MF-R050	RLD72P050XF
A72-065	RXEF065	MF-R065	RLD72P065XF
A72-075	RXEF075	MF-R075	RLD72P075XF
A72-090	RXEF090	MF-R090	RLD72P090XF
A72-110	RXEF110	MF-RX110	RLD72P110XF
A72-135	RXEF135	MF-RX135	RLD72P135XF
A72-160	RXEF160	MF-RX160	RLD72P160XF
A72-185	RXEF185	MF-RX185	RLD72P185XF
A72-250	RXEF250	MF-RX250	RLD72P250XF
A72-300	RXEF300	MF-RX300	RLD72P300XF
A72-375	RXEF375	MF-RX375	RLD72P375XF
A72-500	RXEF500	MF-RX500	RLD72P500XF

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