

#### **Description**

JDTFUSE A16 Series Radial Leaded PTCs are designed to provide resettable overcurrent protection serving a wide range of electronics applications. With maximum 16 volts and maximum 100-ampere short circuit rating, they offer an ideal solution for USB protection.

#### **Features**

- 100A short circuit rating
- 16V Operating voltages
- Fast time-to-trip
- Meets all USB protection requirements
- WWW.Walli RoHS compliant, Lead-Free and Halogen-Free\*

### **Agency Approvals**

Agency	File Number			
c <b>FU</b> °us	E472196			
TOT OF APPROVED	pending			

# **Applications**

- Computers & peripherals
- Any USB application
- General Electronics

Regulation Standard 2002/95/EC RoHS Halogen Free EN14582

#### **Performance Specification**

Model	V max	ax I max I hold I trip P d		Pd	Maximum Time To Trip		Resistance			
Model	(V dc)	(A)	@25°C (A)	@25°C (A)	@25°С Тур.	Current (A)	Time (Sec)	R i min (W)	R i max (W)	R <sub>1max</sub> (W)
A16-090	16	40	0.90	1.80	0.60	8.00	1.2	0.070	0.1200	0.180
A16-110	16	40	1.10	2.20	0.70	8.00	2.3	0.050	0.0950	0.140
A16-135	16	40	1.35	2.70	0.80	8.00	4.5	0.040	0.0740	0.120
A16-160	16	40	1.60	3.20	0.90	8.00	9.0	0.030	0.0610	0.110
A16-185	16	40	1.85	3.70	1.00	8.00	10.0	0.030	0.0510	0.090
A16-250	16	40	2.50	5.00	1.20	12.50	5.0	0.020	0.0350	0.060
A16-300	16	40	3.00	5.10	2.30	15.00	1.0	0.034	0.0650	0.105
A16-400	16	40	4.00	6.80	2.40	20.00	1.7	0.020	0.0390	0.063
A16-500	16	40	5.00	8.50	2.60	25.00	2.0	0.014	0.0230	0.044
A16-600	16	40	6.00	10.20	2.80	30.00	3.3	0.009	0.0190	0.030
A16-700	16	40	7.00	11.90	3.00	35.00	3.5	0.006	0.0130	0.021
A16-800	16	40	8.00	13.60	3.00	40.00	5.0	0.005	0.0110	0.018
A16-900	16	40	9.00	15.30	3.30	45.00	5.5	0.004	0.0092	0.015
A16-1000	16	40	10.00	17.00	3.60	50.00	6.0	0.003	0.0071	0.012
A16-1100	16	40	11.00	18.70	3.70	55.00	7.0	0.003	0.0062	0.010
A16-1200	16	40	12.00	20.40	4.20	60.00	7.5	0.002	0.0060	0.009
A16-1300	16	40	13.00	23.00	4.40	65.00	8.5	0.002	0.0060	0.009
A16-1400	16	100	14.00	23.80	4.60	70.00	9.0	0.002	0.0045	0.008
	A16-110 A16-135 A16-160 A16-185 A16-250 A16-300 A16-400 A16-500 A16-600 A16-600 A16-700 A16-800 A16-900 A16-1000 A16-1100 A16-1200 A16-1300	A16-090 16 A16-110 16 A16-135 16 A16-160 16 A16-185 16 A16-250 16 A16-250 16 A16-300 16 A16-500 16 A16-600 16 A16-700 16 A16-800 16 A16-900 16 A16-1000 16 A16-1100 16 A16-1100 16 A16-1200 16 A16-1300 16	A16-090 16 40 A16-110 16 40 A16-135 16 40 A16-160 16 40 A16-185 16 40 A16-250 16 40 A16-300 16 40 A16-600 16 40 A16-500 16 40 A16-700 16 40 A16-900 16 40 A16-1000 16 40 A16-1000 16 40 A16-1000 16 40 A16-1100 16 40 A16-1200 16 40 A16-1300 16 40 A16-1300 16 40	A16-090 16 40 0.90 A16-110 16 40 1.10 A16-135 16 40 1.35 A16-160 16 40 1.85 A16-250 16 40 2.50 A16-300 16 40 3.00 A16-400 16 40 5.00 A16-500 16 40 5.00 A16-600 16 40 7.00 A16-700 16 40 8.00 A16-900 16 40 9.00 A16-1000 16 40 10.00 A16-1100 16 40 11.00 A16-1200 16 40 12.00 A16-1300 16 40 13.00	Model         (V dc)         (A)         @25°C (A)         @25°C (A)           A16-090         16         40         0.90         1.80           A16-110         16         40         1.10         2.20           A16-135         16         40         1.35         2.70           A16-160         16         40         1.60         3.20           A16-185         16         40         1.85         3.70           A16-250         16         40         2.50         5.00           A16-300         16         40         3.00         5.10           A16-400         16         40         4.00         6.80           A16-500         16         40         5.00         8,50           A16-600         16         40         7.00         11.90           A16-700         16         40         8.00         13.60           A16-900         16         40         9.00         15.30           A16-1000         16         40         10.00         17.00           A16-1200         16         40         11.00         18.70           A16-1300         16         40         12.00	Model         (V dc)         (A)         @25°C (A)         Typ. (W)           A16-090         16         40         0.90         1.80         0.60           A16-110         16         40         1.10         2.20         0.70           A16-135         16         40         1.35         2.70         0.80           A16-160         16         40         1.60         3.20         0.90           A16-185         16         40         1.85         3.70         1.00           A16-250         16         40         2.50         5.00         1.20           A16-300         16         40         3.00         5.10         2.30           A16-400         16         40         4.00         6.80         2.40           A16-500         16         40         5.00         8.50         2.60           A16-600         16         40         7.00         11.90         3.00           A16-700         16         40         7.00         11.90         3.00           A16-900         16         40         9.00         15.30         3.30           A16-1000         16         40         10.00	Model         V max (V dc)         I max (V dc)         I hold (A)         I trip (25°C (A)         Typ. (W)         Time Typ. (W)           A16-090         16         40         0.90         1.80         0.60         8.00           A16-110         16         40         1.10         2.20         0.70         8.00           A16-135         16         40         1.35         2.70         0.80         8.00           A16-160         16         40         1.60         3.20         0.90         8.00           A16-185         16         40         1.85         3.70         1.00         8.00           A16-300         16         40         2.50         5.00         1.20         12.50           A16-300         16         40         3.00         5.10         2.30         15.00           A16-400         16         40         4.00         6.80         2.40         20.00           A16-500         16         40         5.00         8.50         2.60         25.00           A16-700         16         40         7.00         11.90         3.00         35.00           A16-800         16         40         8.00	Model         V max (V dc)         I max (V dc)         I hold (A)         I trip (25°C (A)         P d Typ. (W)         Time To Trip Current (A)         Time (Sec)           A16-090         16         40         0.90         1.80         0.60         8.00         1.2           A16-110         16         40         1.10         2.20         0.70         8.00         2.3           A16-135         16         40         1.35         2.70         0.80         8.00         4.5           A16-160         16         40         1.60         3.20         0.90         8.00         9.0           A16-185         16         40         1.85         3.70         1.00         8.00         10.0           A16-250         16         40         2.50         5.00         1.20         12.50         5.0           A16-300         16         40         3.00         5.10         2.30         15.00         1.0           A16-500         16         40         5.00         8.50         2.60         25.00         2.0           A16-600         16         40         5.00         8.50         2.60         25.00         2.0           A16-900	Model         V max (V dc)         I max (V dc)         I hold (A)         I trip @25°C (A)         P d Typ. (W)         Time To Trip (A)         R i min (VI)           A16-090         16         40         0.90         1.80         0.60         8.00         1.2         0.070           A16-110         16         40         1.10         2.20         0.70         8.00         2.3         0.050           A16-135         16         40         1.35         2.70         0.80         8.00         4.5         0.040           A16-160         16         40         1.60         3.20         0.90         8.00         9.0         0.030           A16-185         16         40         1.85         3.70         1.00         8.00         10.0         0.030           A16-300         16         40         2.50         5.00         1.20         12.50         5.0         0.020           A16-300         16         40         3.00         5.10         2.30         15.00         1.0         0.034           A16-500         16         40         5.00         8.50         2.60         25.00         2.0         0.014           A16-800         16	Model         V max (V dc)         I max (A)         I hold e25°C (A)         I trip e25°C (A)         P d Typ. (W)         Time To Trip (W)         R i min (Sec)         R i min (W)         R i max (W)           A16-090         16         40         0.90         1.80         0.60         8.00         1.2         0.070         0.1200           A16-110         16         40         1.10         2.20         0.70         8.00         2.3         0.050         0.0950           A16-135         16         40         1.35         2.70         0.80         8.00         4.5         0.040         0.0740           A16-160         16         40         1.60         3.20         0.90         8.00         9.0         0.030         0.0610           A16-185         16         40         1.85         3.70         1.00         8.00         10.0         0.030         0.0510           A16-250         16         40         2.50         5.00         1.20         12.50         5.0         0.020         0.0350           A16-300         16         40         3.00         5.10         2.30         15.00         1.0         0.034         0.0650           A16-600

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<sub>max</sub> = 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<sub>d</sub> = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

Rymmax = Minimum/Maximum device resistance prior to tripping at 25°C.

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

AUXON: Operation and the specified ratings may result in damage and possible arcing and flame

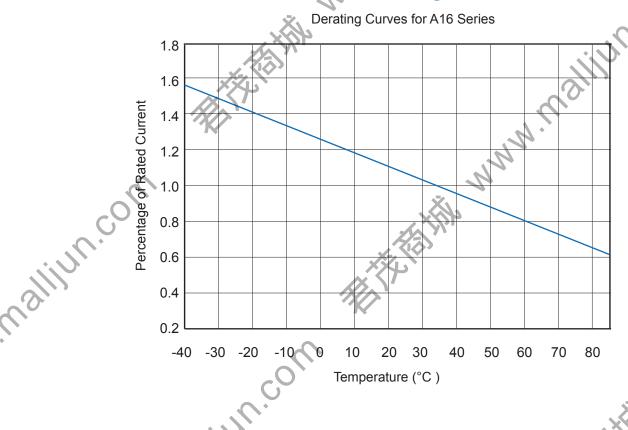
#### Environmental Specifications

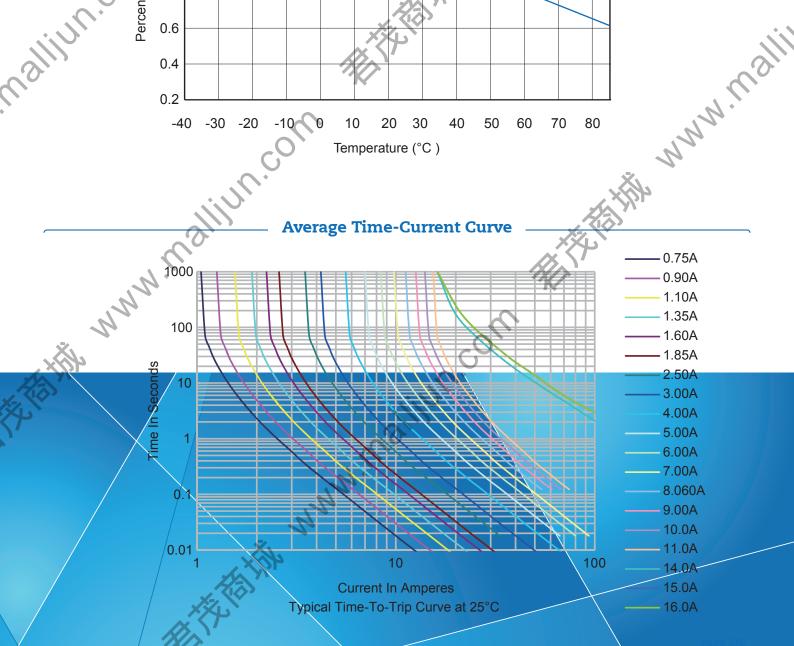
Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs.	±5% typical
Humidity aging	+85°C, 85% R.H., 168 hours	±5% typical
Thermal shock	+85°C to -40°C, 20 times	±33% typical
Resistance to solvent	MIL-STD-202,Method 215	No change
Vibration	MIL-STD-202,Method 201	No change

Ambient operating conditions 1 - 40 °C to +85 °C

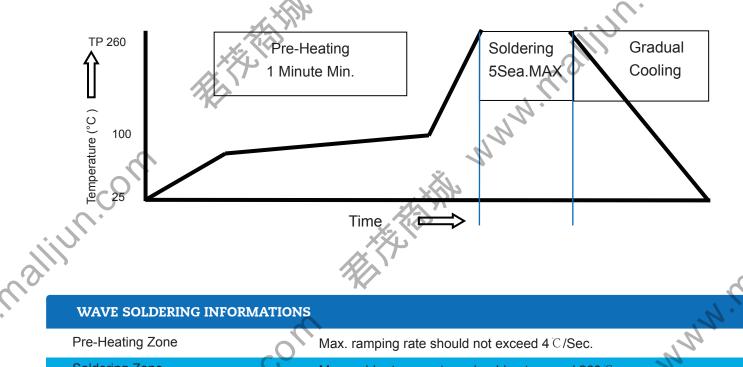
Maximum surface temperature of the device in the tripped state is 125 °C

#### **Thermal Derating Curve**





# Soldering Parameters



#### WAVE SOLDERING INFORMATIONS

MANIE

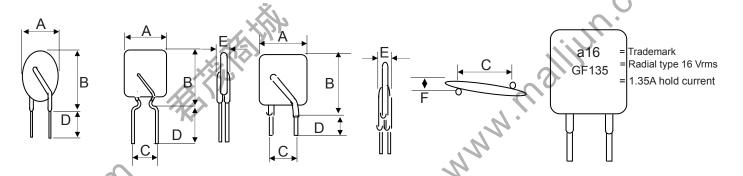
Pre-Heating Zone Max. ramping rate should not exceed 4 ℃/Sec.

Soldering Zone Max. solder temperature should not exceed 260 C

Cooling Zone Cooling by natural convection in air.

OSpecifications are subject to change without notice.

### Physical Dimensions(mm.)



Model	A Max.	B Max.	C Max.	D Max.	E Max.	Lead Style
A16-090	7.40	12.20	5.10	7.6	3	Kink
A16-110	7.40	14.20	5.10	7.6	3	Kink _
A16-135	8.90	13.50	5.10	7.6	3	Kink
A16-160	8.90	15.20	5.10	7.6	3	Kink
A16-185	10.20	15.70	5.10	7.6	3	Kink
A16-250	10.40	14.30	5.10	7.6	3	Kink
A16-300	7.10	11.00	5.10	7.6	3	Straight
A16-400	8.90	15.20	5.10	7.6	3	Straight
A16-500	10.40	15.70	5.10	7.6	3	Straight
A16-600	10.70	18.30	5.10	7.6	<b>4</b> 3	Straight
A16-700	12.70	19.70	5.10	7.6	3	Straight
A16-800	13.40	20.10	5.10	7.6	3	Straight
A16-900	14.00	24.90	5.10	7.6	3	Straight
A16-1000	16.50	24.90	5.10	7.6	3	Straight
A16-1100	17.50	24.90	5.10	7.6	3	Straight
A16-1200	18.50	26.70	10.20	7.6	3.5	Straight
A16-1300	23.50	27.90	10.20	7.6	3.5	Straight
A16-1400	23.50	27.90	10.20	7.6	3.5	Straight

#### PHYSICAL SPECIFICATIONS:

A16-090~250: Tin plated copper-clad steel, 24 AWG (0.51mm/0.020" Dia.) Materials: Leads

A16-300~1100 : Tin plated copper, 20 AWG (0.81mm/0.032" Dia.) A16-1200~1400 : Tin plated copper, 18 AWG (1.0mm/0.04" Dia.) Lead Solderability :/MIL-STD-202, Method 208E

Device Labeling: Device is marked with Logo, amperage rating, voltage rating & date code.

## **Packaging Quantity**

Ä.			
Model	Reel QTY	Bag QTY	
A16-090 ~ A16- 600	3000	500	
A16-700 ~ A16- 900	1500	500	
A16-1000 ~ A16-1400	-	500	

Tape & Reel packaging per EIA468-B standard.

# Cross Reference

Model	Cross Reference					
wodel	Tyco / PolySwitch®	Bourns / POLY-FUSE®	Polytronics / EVERFUSE®			
A16-090	RUSBF090	MF-RHT070	RLD16P090BF			
A16-110	RUSBF110	-	RLD16P110BF			
A16-135	RUSBF135	-	RLD16P135BF			
A16-160	RUSBF160	-	RLD16P160BF			
A16-185	RUSBF185	MF-RHT200	RLD16P185BF			
A16-250	RUSBF250	-	RLD16P250BF			
A16-300	RGEF300	MF-RG300	RLD16P300GF			
A16-400	RGEF400	MF-RHT450	RLD16P400GF			
A16-500	RGEF500	MF-RG500	RLD16P500GF			
A16-600	RGEF600	MF-RHT650	RLD16P600GF			
A16-700	RGEF700	MF-RHT750	RLD16P700GF			
A16-800	RGEF800	0	RLD16P800GF			
A16-900	RGEF900	<u> </u>	RLD16P900GF			
A16-1000	RGEF1000	10.	RLD16P1000GF			
A16-1100	RGEF1100	MF-R1100	RLD16P1100GF			
A16-1200	RGEF1200	_	RLD16P1200GF			
A16-1300	- 100	MF-RHT1300	-			
A16-1400	RGEF1400	-	RLD16P1400GF			

<sup>&</sup>quot;PolySwitch" is a registered trademark of Tyco Electronics.
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