

## PICO® 304 Series – 277V Intrinsically Safe Fuse

# ROHS C TIL US (EX) IEC IECE



Agency Approvals				
Agency	Agency File Number	Ampere Rating		
(Ex)	DEMKO 13 ATEX 1200U	50 - 750mA		
c <b>FL</b> ® us	E358130	50 - 750mA		
	IECEx UL 13.0077U Ex ia IIC	50 - 750mA		

Reference Standards				
Agency	Standards			
ATEX	EN 60079-0, EN 60079-11, EN 60079-26			
IECEx	IEC 60079-0, IEC 60079-11, IEC 60079-26			
United States	UL 913, UL 60079-0, UL 60079-11, UL 248-1, UL 248-14			
Canada	CAN/CSA C22.2 No. 157, CAN/CSA C22.2 No. 60079-0, CAN/CSA C22.2 No. 60079-11, CSA 248-1, CSA 248-14			

## Description

The PICO<sup>®</sup> 304 Series offers a range of suface mountable encapsulated fuses certified as intrinsically safe components that can be used in hazardous locations. Ideal for use in oil, gas, mine, chemical, pharmaceutical and process industries, the PICO<sup>®</sup> 304 Series surface mountable fuse was designed to limit the energy and temperature generated during its operation. The fuse design and its encapsulant are suitable for use in intrinsically safe apparatus and associated apparatus for peak voltage not exceeding 375V.

## Features

- Surface Mountable
- Encapsulated and sealed (1mm minimum)
- High breaking capacity of 1500A at 277V AC/DC
- Current rating options from 0.050 to 0.750A
- Global hazardous location certifications
- Suitable for Class I, Class II, Class III, Class III, and Zone 0 Hazardous Location.

## Applications

- Testing, measuring or processing electronic and electrical equipment
- Motor controllers
- Communication handsets/ 
   Flow/g
  two-way radios
- Process control and automation
- Sensors
- Lighting
  - Flow/gas meters

## **Electrical Characteristics for Series**

% of Ampere Rating	OpeningTime	
110%	4 Hours, Minimum	
300%	10 Seconds, Maximum	

Catalog Ampere Amp	Interrupting	Nominal	Minimum Cold	Minimum Cold	Nominal Cold	Agency Approvals				
Number	Rating (A)	Code	Rating	Melting I <sup>2</sup> t (A <sup>2</sup> Sec.)	Resistance at -20°C (Ohms)	Resistance at -40°C (Ohms)		(Ex)	c 🔨 us	
0304.050	0.050	.050		0.00019	9.202	9.010	12.00	X	X	Х
0304.080	0.080	.080		0.00035	6.031	5.963	8.19	X	X	Х
0304.100	0.100	.100	1500A @ 277VAC/DC	0.00070	2.709	2.668	5.00	X	X	X
0304.160	0.160	.160		0.00202	2.297	2.292	3.00	X	X	X
0304.200	0.200	.200		0.00288	1.935	1.839	2.68	X	X	Х
0304.250	0.250	.250		0.00662	1.268	1.105	1.60	Х	X	X
0304.500	0.500	.500		0.04462	0.392	0.368	0.46	Х	X	X
0304.750	0.750	.750		0.13448	0.219	0.196	0.27	X	X	X

Notes: 1) The fuse must be mounted so that creepage and clearance distances are not impaired in any way.

The fuse is suitable for use in intrinsically safe equipment and associated apparatus for voltage not exceeding 375V peak.
 Maximum surface temperature rise at 170% rated current: ≤200mA = 88°C, 250mA = 52°C, 500mA = 52°C, and 750mA = 45°C

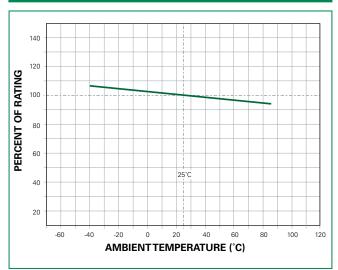
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Specifications are subject to change without notice. Revised: 06/26/18

**Flectrical Specifications by Items** 



## **Temperature Rerating Curve**



#### Notes:

1) Rerating depicted in this curve is in addition to the standard rerating of 25% for continuous operation.

2) The temperature rerating curve represents the nominal conditions. For questions about temperature rerating curve, please consult Littlefuse technical support for assistance.

### **Product Characteristics**

OperatingTemperature				
Current Rating	AmbientTemperature			
≤0.200A	-40°C to +60°C			
0.250A	-40°C to +56°C			
0.500A	-40°C to +84°C			
0.750A	-40°C to +56°C			

#### Notes:

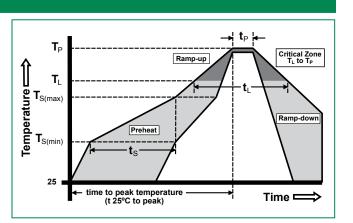
 Any use of the 304 Series fuse outside of the ambient temperature ranges specified in the table is subject to additional investigation.

2) Specified ambient temperature range is for intrinsic safety certification.

Molding Material	Polyamide 6T/66 CTI 175 volts minimum Continuous Operating Temperature: 140°C		
Thermal Shock	Withstands 5 cycles of –55°C to 125°C		
Mechanical Shock	MIL-STD-202, Method 213		
Insulation Resistance (After Opening)	Greater than 10,000 ohms (at twice rated DC voltage)		
Resistance to Soldering Heat	MIL-STD-202, Method 210		
Moisture Resistance	MIL-STD-202, Method 106		
Salt Fog Test	MIL-STD-202, Method 101		

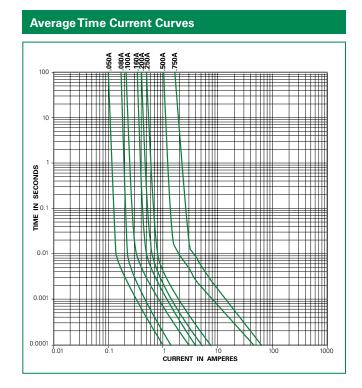
### **Soldering Parameters**

Reflow Cond	ition	Pb-free assembly	
Pre Heat	-Temperature Min (Ts(min))	150°C	
	-Temperature Max (Ts(max))	200°C	
	-Time (Min to Max) (t <sub>s</sub> )	60 – 120 seconds	
Average Ram (Liquidus Tem	np-up Rate np (T∟) to peak)	5°C/second max	
Ts(max) to TL -	Ramp-up Rate	5°C/second max	
Beflow	- Temperature (TL) (Liquidus)	217°C	
nellow	-Temperature (tL)	60 – 150 seconds	
Peak Tempera	ature (T <sub>P</sub> )	260+ <sup>0/-5°</sup> C	
Time within s actual peak Te	5°C of emperature (t <sub>P</sub> )	20 – 40 seconds	
Ramp-down	Rate	5°C/second max	
Time 25°C to	Peak Temperature (TP)	8 minutes max	
Do not excee	ed	260°C	
Wave Solderi	ing	260°C, 10 sec. max	

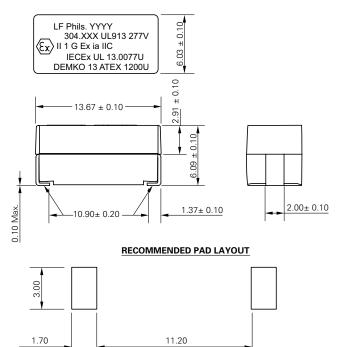


## **Special Application Fuses** Intrinsically Safe > Surface Mount > PICO<sup>®</sup> 304 Series Fuse

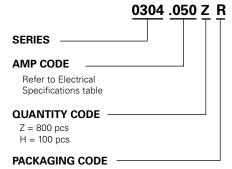




## **Dimensions (mm)**



## **Part Numbering System**



R = Tape and Reel

Packaging					
Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code		
24mm Tape and Reel		800	ZR		
	EIA 481-1	100	HR		