Surface Mount Fuses

Ceramic Fuse > 469 Series



RoHS P HF C W US SP.

469 Series - 1206 Slo-Blo® Fuse



Agency Approvals					
AGENCY	AGENCY FILE NUMBER	AMPERE RANGE			
c 🔊 us	E10480	2A – 8A			
<u>ج</u>	29862	2A – 8A			

Electrical Characteristics for Series

Electrical Specifications by Item

% of Ampere Rating	Ampere Rating	OpeningTime at 25°C	
100%	2A – 8A	4 hours, Minimum	
200%	2A – 8A	1 sec., Min.; 120 secs., Max.	
300%	2A – 8A	0.1 sec., Min.; 3 secs., Max.	
800%	2A – 8A	0.002 sec., Min.; 0.05 sec., Max.	

Description

The 469 Series is a 100% Lead-free, RoHS compliant and Halogen-free fuse series designed specifically to provide over-current protection to circuits that operate under high working ambient temperature up to 150°C.

The general design ensures excellent temperature stability and performance reliability.

The high I²t values, typical in the Littelfuse Ceramic fuse family, ensure high inrush current withstand capability.

Features

- Operating Temperature from -55°C to +150°C
- Suitable for both leaded and lead-free reflow / wave soldering
- 100% Lead-free, RoHS compliant and Halogenfree

Applications

- LCD Displays
- Servers
- Notebook Computers
- Printers

Additional Information







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Datasheet

• Scanners

Data Modems

Gaming Consoles



Ampere	mpere Max.			Nominal	Nominal	Nominal Voltage	Nominal Power	Agency Appro	
Rating (A)	Amp Code	Voltage Rating (V)	Interrupting Rating	Resistance (Ohms) ²		Drop At Rated Current (V) ⁴	Dissipation At Rated Current (W)	c Nus	
2.00	002.	63	60 A @ 63 VDC	0.166	0.2250	0.455	0.91	Х	
4.00	004.	32	60 A @ 32 VDC	0.052	3.560	0.236	0.944	X	
5.00	005.	32	00 A @ 32 VDC	0.033	5.620	0.216	1.080	X	
6.00	006.	24		0.026	9.410	0.274	1.644	X	
7.00	007.	24	60 A @ 24 VDC	0.020	14.400	0.216	1.512	X	
8.00	008.	24		0.016	23.720	0.233	1.864	X	

Notes:

1. AC Interrupting Rating tested at rated voltage with unity power factor. DC Interrupting Rating tested at rated voltage with time constant < 0.8 msec.

2. Nominal Resistance measured with < 10% rated current.

3. Nominal Melting I²t measured at 1 msec opening time.

4. Nominal Voltage Drop measured at rated current after temperature has stabilized.

Devices designed to be mounted with marking code facing up.

Devices designed to carry rated current for 4 hours minimum. It is recommended that devices be operated continuously at no more than 80% rated current. See "Temperature Re-rating Curve" for additional re-rating information



Temperature Re-rating Curve



Note:

1. Re-rating depicted in this curve is in addition to the standard re-rating of 20% for continuous operation.

Example:

For continuous operation at 75 degrees celsius, the fuse should be rerated as follows:

 $I = (0.80)(0.85)I_{RAT} = (0.68)I_{RAT}$



Soldering Parameters

Reflow Co	ndition	Pb – free assembly	
	-Temperature Min (T _{s(min)})	150°C	
Pre Heat	-Temperature Max (T _{s(max)})	200°C	
	-Time (Min to Max) (t _s)	60 – 180 seconds	
Average R (T _L) to pea	amp-up Rate (LiquidusTemp k)	3°C/second max.	
T _{S(max)} to T _L - Ramp-up Rate		5°C/second max.	
D (1	-Temperature (T _L) (Liquidus)	217°C	
Reflow	-Temperature (t _L)	60 – 150 seconds	
PeakTemp	erature (T _P)	260 ^{+0/-5} °C	
Time with Temperatu	in 5°C of actual peak ıre (t _p)	10 – 30 seconds	
Ramp-dov	vn Rate	6°C/second max.	
Time 25°C	to peakTemperature (T _P)	8 minutes max.	
Do not exc	ceed	260°C	

Wave Soldering

260°C, 10 seconds max.



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Product Characteristics

Materials	Body: Advanced Ceramic Terminations: Ag / Ni / Sn (100% Lead-free) Element Cover Coating: Lead-free Glass		
Moisture Sensitivity Level	IPC/JEDEC J-STD-020, Level 1		
Solderability	IPC/EIC/JEDEC J-STD-002, Condition B		
Humidity	MIL-STD-202, Method 103, Conditions D		
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition B		

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Moisture Resistance	MIL-STD-202, Method 106		
Thermal Shock	MIL-STD-202, Method 107, Condition B		
Mechanical Shock	MIL-STD-202, Method 213, Condition A		
Vibration	MIL-STD-202, Method 201		
Vibration, High Frequency	MIL-STD-202, Method 204, Condition D		
Dissolution of Metallization	IPC/EIC/JEDEC J-STD-002, Condition D		
Terminal Strength	IEC 60127-4		

3.27 + 0.12/-0.25 [0.129 + 0.005/-0.010] [0.039 ± 0.008 1.63 + 0.1/-0.2 [0.664 + 0.004/-0.008]

Dimensions





Part Marking System				
Amp Code	Marking Code			
002.	N			
004.	<u>s</u>			
005.	I			
006.	<u>U</u>			
007.	w			
008.	<u>x</u>			



Packaging					
Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code		
8mm Tape and Reel	EIA-481, IEC 60286, Part 3	3000	WR		

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