

476 Series Fuse



Agency Approvals

Agency	Agency File Number	Ampere Range
c SL [°] us	E10480	1A - 15A
PS	NBK240818-JP1021A NBK240818-JP1021B	1A - 1.6A 2A - 5A

Applications

LED Lighting

LCD/LED TVs

- Power Supply Units
- White Goods

Description

The 476 Series is a family of 250V rated fuses with a very small 2410 footprint. It is the smallest SMD fuse with this high voltage rating and is designed to mainly serve as primary side circuit protection for compact devices with high voltage requirements.

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Features

- Small 2410 Footprint
- 250V Voltage Rating (1A to 5A)
- High Interrupting Ratings
- Fast-Acting
- RoHS Compliant and Halogen-Free
- Wide Operating temperature range of -55°C to 125°C
- IEC 61547 Surge Compliant (tested per IEC 61000-4-5 with a combination wave of 500V, 1.2/50us and 250A, 8/20us for ≤25W Luminaires) – only for 3A and above

Electrical Characteristics for Series

% of Ampere Rating Ampere Rating		Opening Time	
100%	1A - 15A	4 Hour, Minimum	
125%	1A - 5A	1 Hour, Minimum	
200%	1A - 15A	120 Sec., Maximum	
1000%	1A - 5A	0.001 Sec., Min; 0.01 Sec., Max	

Electrical Characteristic

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating	Nominal	Nominal Malting	Agency Approvals	
				Cold Resistance (Ohms)	l ² t (A ² sec.)	c N us	PS E
1.00	001	250V		0.1575	0.193	x	х
1.25	1.25	250V		0.122	0.276	x	х
1.60	01.6	250V		0.0825	0.620	x	х
2.00	002	250V	100A @ 250VAC 300A @ 125VDC 10kA @ 86VDC	0.0448	0.530	x	х
2.50	02.5	250V		0.0363	0.910	x	х
3.00	003	250V		0.0277	1.660	х	х
3.50	03.5	250V		0.0234	2.356	х	х
4.00	004	250V		0.01839	2.820	х	х
5.00	005	250V		0.0157	4.000	х	х
6.30	06.3	125V		0.0126	7.500	х	-
7.00	007	125V	100A@125VAC 300A@125VDC 10kA@86VDC	0.0116	7.800	x	-
8.00	008	125V		0.0112	9.757	x	-
10.0	010	125V		0.0096	14.879	x	-
12.0	012	125V		0.006	20.635	x	-
15.0	015	125V		0.0045	61.286	x	-

Notes: 1. Cold resistance measured at less than 10% of rated current at 25°C

2. Agency Approval Table Key: X = Approved or Certified, P=Pending and Blank=Not Approved.

3. I²t values stated for 8msec opening time.

4. For 15A rating with 10kA@86VDC IR, please use suffix "S" for ordering. Refer to Part Numbering System for reference.



Surface Mount Fuses NANO^{2®} Fuse > 250V > Fast Acting > 476 Series

Temperature Rerating Curve



 $\ensuremath{\text{NOTE}}$: Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

Average Time Current Curves



Soldering Parameters

Reflow Condition		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 Rai to peak)	mp-up Rate (Liquidus Temp (T _L)	5°C/second max.	
T _{S(max)} to T _L -	Ramp-up Rate	5°C/second max.	
Reflow	- Temperature (T _L) (Liquidus)	217°C	
	- Temperature (t _L)	60 – 150 seconds	
Peak Temperature (T _P)		260 ^{+0/-5} °C	
Time within (t _p)	5°C of actual peak Temperature	20 – 40 seconds	
Ramp-down Rate		5°C/second max.	
Time 25°C to peak Temperature (T _P)		8 minutes max.	
Do not exce	ed	260°C	





Prod	uct	Chara	acter	istic

Materials	Body: Ceramic Cap: Silver Plated Brass/Sn Dipped Silver Plated Brass/Gold Plated Brass		
Product Marking	Body: Brand Logo, Current Rating		
Operating Temperature	-55°C to +125°C		
Moisture Sensitivity Level	Level 1		
Solderability	MIL-STD-202, Method 208		
Insulation Resistance (after opening)	IEC 60127-4 (0.1Mohm Min)		

Thermal Shock	MILSTD-202, Method 107 Test Condition B, 5 cycles, -65°C to 125°C, 15 minutes @ each extreme		
Mechanical Shock	MIL-STD-202, Method 213 Test Condition I: De-energized. 100G's peak amplitude, sawtooth wave 6ms duration, 3 cycles XYZ+xyz = 18 shocks		
Vibration	MIL-STD-202, Method 201: 0.03" amplitude, 10-55 Hz in 1 min. 2 hrs. each XYZ = 6hrs (10- 55 Hz)		
Moisture Resistance	MIL-STD-202, Method 106 10 cycles		
Salt Spray	MIL-STD-202, Method 101 Test Condition B (48 hrs)		
Resistance to Soldering Heat	MIL-STD-202, Method 210, Test Condition B (10 sec at 260°C)		

Dimensions





Recommended Pad Layout

Part Numbering System



Packaging				
Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Reel Size
12mm Tape and Reel	EIA-RS-481-2 (IEC 286 part 3)	1000	MR	N/A