505 Series, Lead-free 3AB, Fast-Acting Fuse



Description

A 500VAC/VDC rated ceramic fuse with remarkable interrupting rating in a compact 6.3 x 32mm package, which is well suited for circuit protection in high energy applications.

Features

- In accordance with Underwriters Laboratories Standard UL 248-14
- Available in cartridge and axial lead form and with various lead forming dimensions.
- RoHS compliant and Lead-free
- Superior Interrupting rating of 20,000 Amperes
- Compact form factor of 6.3mm x 32mm

Agency Approvals

Agency	Agency File Number	Ampere Range
c UL us	E10480	10A - 30A
	1620079	10A - 12A
CE	N/A	10A - 30A
	T5026910801	15 - 30A

Applications

- Uninterruptible Power Supplies (UPS)
- Three-Phase Power Supplies

Electrical Characteristics for Series

% of Ampere Rating	Ampere Rating	Opening Time
150%	10 – 30	30 minutes, Maximum
200%		30 minutes, Maximum
300%		10 sec., Maximum

Additional Information

Datasheet | Resources | Samples | Accessories

For recommended fuse accessories for this product series, see 'Recommended Accessories' section.

Electrical Characteristic Specifications by Item

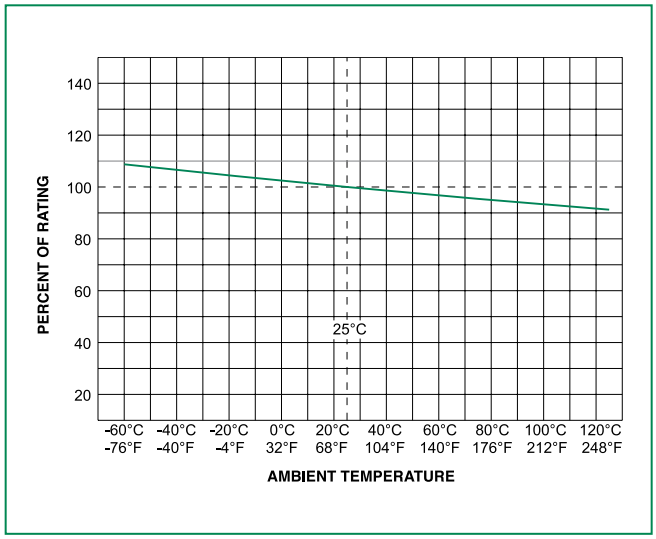
Amp Code	Ampere Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I^2t (A^2 sec)	Agency Approvals			
						c UL us		CE	
010.	10	450	20kA@450VAC 1000A@250VDC	0.0167	91	x	x	x	
010.*	10	500	200A@500VAC 200A@500VDC	0.0167	91	x		x	
012.	12	450	20kA@450VAC 1000A@250VDC	0.0117	192	x	x	x	
015.	15	500	50kA@500VAC 20kA@500VDC	0.0073	68	x		x	x
016.	16	500		0.0073	68	x		x	x
020.	20	500	30kA@500VAC 20kA@500VDC	0.0056	140	x		x	x
025.	25	500		0.0048	210	x		x	x
030.	30	500		0.0038	280	x		x	x

Notes:

1. 20kA@500VAC&20kA@500VDC interrupting rating available for TUV certification of 15~30A
2. *200A@500Vac&200A@500Vdc interrupting rating available for 10A. Add suffix "500" Example: 0505010.MX500P, and 0505010.MXE500P"

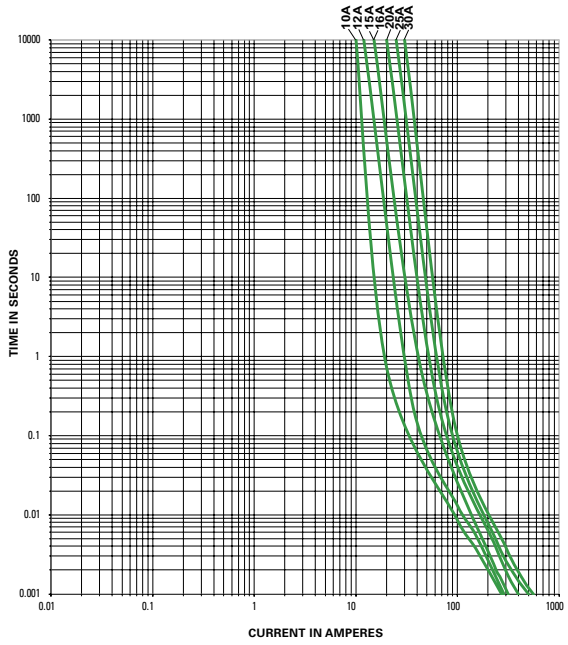
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Application testing is strongly recommended. Specifications are subject to change without notice.
Revised: 06/15/17

Temperature Re-rating Curve

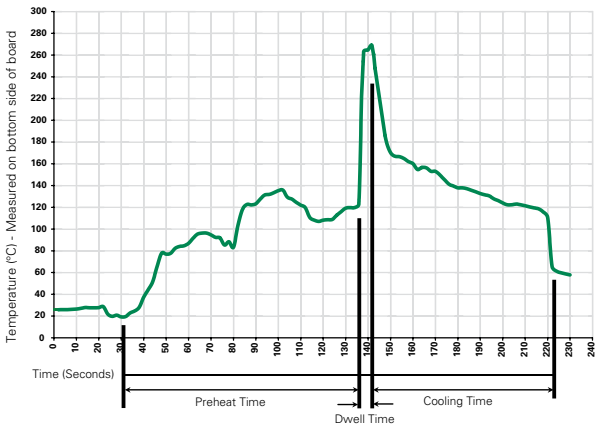


Note:
Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

Average Time Current Curves



Soldering Parameters - Wave Soldering



Recommended Process Parameters:

Wave Parameter	Lead-Free Recommendation
Preheat: (Depends on Flux Activation Temperature)	(Typical Industry Recommendation)
Temperature Minimum:	100° C
Temperature Maximum:	150°C
Preheat Time:	60-180 seconds
Solder Pot Temperature:	270°C
Solder Dwell Time:	10 seconds Maximum

Recommended Hand-Solder Parameters:

Solder Iron Temperature: 350°C +/- 5°C
Heating Time: 5 seconds max.

Note: These devices are not recommended for IR or Convection Reflow process.

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Axial Lead & Cartridge Fuses

3AB > Fast-Acting > 505 Series

Product Characteristics

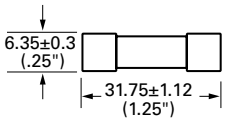
Materials	Body : Ceramic Cap : Nickel–plated brass Leads : Tin-plated Copper
Terminal Strength	MIL-STD-202, Method 211, Test Condition A
Solderability	MIL-STD-202 Method 208
Product Marking	Cap1 : Brand logo, current and voltage ratings Cap2 : Series and agency approval marks

Operating Temperature:	–55°C to 125°C.
Thermal Shock:	MIL-STD-202, Method 107, Test Condition B (5 Cycles -65°C to +125°C).
Vibration	MIL-STD-202, Method 201
Humidity	MIL-STD-202, Method 103, Test Condition A: High relative humidity (95%) and elevated temp (40°C) for 240 hours
Salt Spray	MIL-STD-202, Method 101, Test Condition B

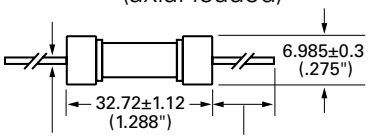
Dimensions

Measurements displayed in millimeters (inches)

505 000P **Series**
(cartridge)



505 000P **Series**
(axial leaded)



Axial Lead Diameter:
0.81±0.05 (.032") for (10A - 16A)
1.02±0.06 (.040") for (20A - 30A)

Axial Lead Length:
38.1±3.15 (1.50") TYP.
52±1 (2.0") for long lead

Axial Lead Material:
Tin-coated copper

Part Numbering System

0505 xxxx M X E P

Series

Amp Code
Refer to Amp Code column of Electrical Characteristics Table

Quantity Code
M = 1000

Packaging Code
X = Filler

Option Codes
E : Axial Leaded
52LE : 52mm length
Others : special options.
Please call
Littelfuse for detail.

Lead-Free

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Reel Size
505 Series				
Bulk	N/A	1000	MX	N/A
Bulk	N/A	1000	MXE	N/A
Bulk	N/A	1000	MX52LE	N/A

Recommended Accessories

Accessory Type	Series	Description	Max Application Voltage	Max Application Amperage
Holder	150322	In-Line Fuseholder	500	15
Block	354	Low Profile OMNI-BLOK® Fuse Block	600	30
	359	High Current Screw Terminal Fuse Block		30
Clip	122	High Current Traditional PC Board Fuse Clip	1000	30
	101	Rivet/Eyelet Type Fuse Clip	1000	15

Notes:
1. Do not use in applications above rating.
2. Please refer to fuseholder data sheet for specific re-rating information.
3. Please contact factory for applications greater than the max voltage and amperage shown.

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