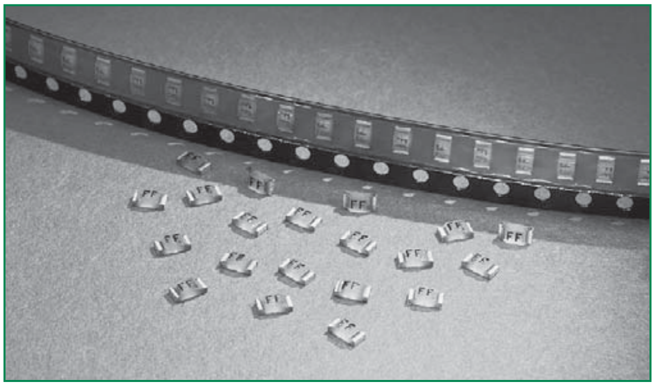
RoHS Pb

429 Series Fuse

UL CSA



Description

The 429 Series Fast-Acting SMF is a small (1206 size) thin-film device designed for secondary protection of circuits used in space constrained applications such as hand-held portable electronic devices.

This series is 100% lead-free and meets the requirements of the RoHS directive.

Features

- RoHS compliant and Lead-Free 7A device available-add 'L' suffix to catalog number
- **For new designs up to 5A please consult the 433 or 466 Series**

Applications

Secondary protection for space constrained applications such as:

- Cell phones
- Battery packs
- Digital cameras
- DVD players
- Hard disk drives.

Agency Approvals

AGENCY	AGENCY FILE NUMBER	AMPERE RANGE
UL	E10480	125MA - 7A
CSA	LR29862	125MA - 7A

Electrical Characteristics for Series

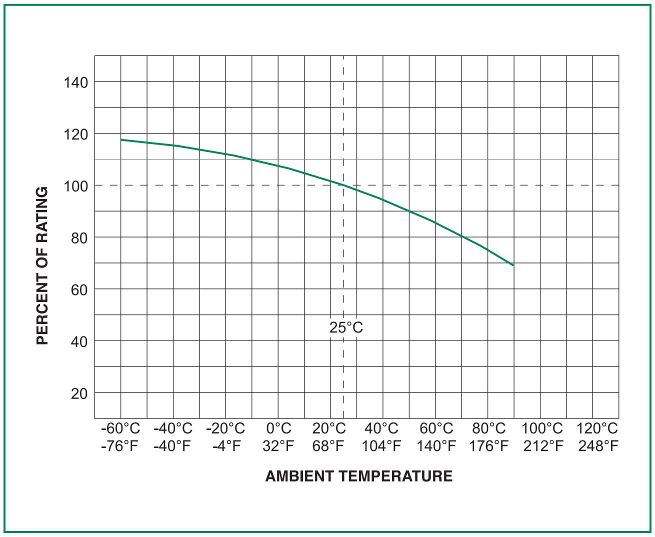
% of Ampere Rating	Opening Time at 25°C
100%	4 hours, Minimum
200%	5 sec., Maximum
300%	0.2 sec., Maximum

Electrical Specifications by Item

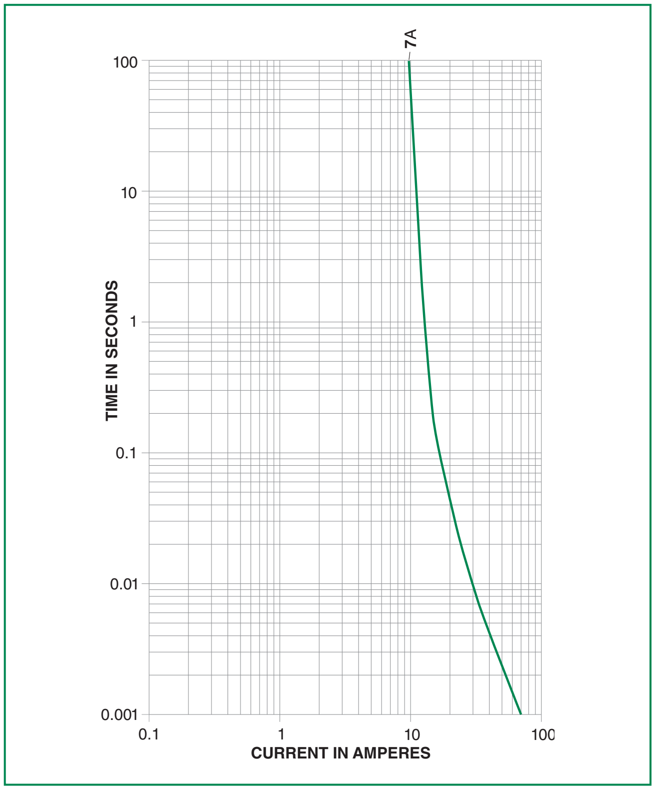
Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I²t (A²sec)	Agency Approvals	
						UL	CSA
7.00	007.	24	35 amperes @ voltage, VAC/VDC	0.00925	3.6000	x	x
7.00	007.	24		0.00925	3.6000	x	x

1. Measured at 10% of rated current, 25°C.
2. Measured at rated voltage.

Temperature Rerating Curve

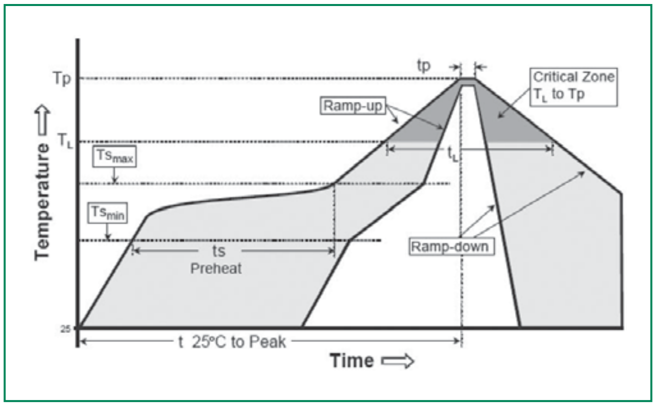


Average Time Current Curves



Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (Min to Max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		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)		$250^{+0/-5}$ °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		260°C



Wave Soldering	260°C, 10 seconds max.

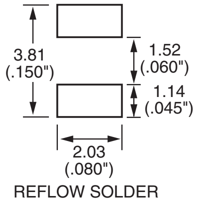
Product Characteristics

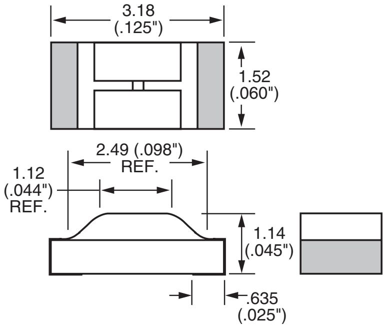
Materials	**Body:** Epoxy Substrate **Terminations - Standard Device (429)**: 95% Tin / 5% Lead over Nickel over Copper **Terminations, RoHS Compliant Device (429L):** 100% Tin over Nickel over Copper **Element Cover Coat:** Conformal Coating NOTE: Do not use alcohol-based cleaners or solvents with 429 Series Thin-Film Fuses as it may damage the coating.
Operating Temperature	– 55°C to 90°C. Consult temperature rerating chart. For operation above 90°C contact Littelfuse.
Thermal Shock	Withstands 5 cycles of – 55°C to 125°C

Humidity	MIL-STD-202F, Method 103B Condition D
Vibration	Withstands 10 – 55 Hz per MIL-STD-202F, Method 201A and 10-2000 Hz at 20 G's per MIL-STD-202F, Method 204D, Condition D.
Insulation Resistance (After Opening)	Greater than 10,000 ohms
Resistance to Soldering Heat	MIL-STD-202G, Method 210F, Condition D

Dimensions

RECOMMENDED PAD LAYOUTS

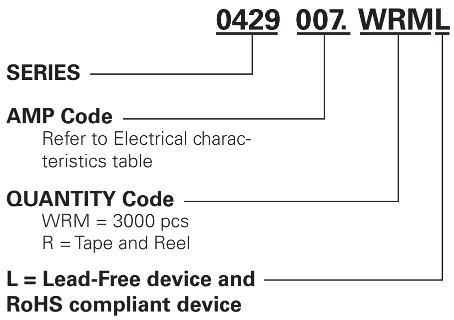




Part Marking System

Series	Marking Code
429	**FU**
429L	**7**

Part Numbering System



0429 007. WRML

SERIES

AMP Code
Refer to Electrical characteristics table

QUANTITY Code
WRM = 3000 pcs
R = Tape and Reel

L = Lead-Free device and RoHS compliant device

Example:
1.5 amp product is 0429 **01.5** WRML
(7 amp product shown above).

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
Tape & Reel – 8mm tape	EIA RS-481-1 (IEC 286, part 3)	3000	WRM