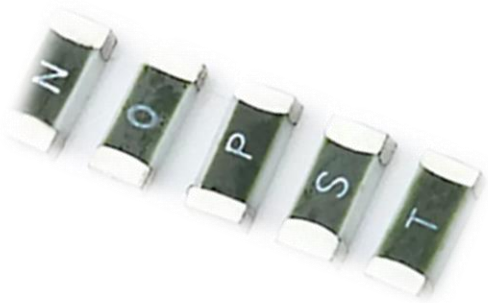
SURFACE MOUNT FUSES: 0603 SIZE → FAST ACTING

DESCRIPTION:



ALPS0603FXX is Fast acting for excessive current. Compatible with reflow and wave solder. Rugged ceramic and glass construction. Excellent environmental performance. RoHS Compliant, Lead Free & Halogen Free material.

FEATURES:

- Fast Acting for excessive current
- 1.6mm × 0.8mm physical size
- Thick film manufacturing method, ceramic substrate, silver fusing element
- Compatible with reflow and wave solder
- -55℃ ~ 125℃ operating temperature
- Excellent environmental integrity
- RoHS compliant
- Halogen-free

APPLICATIONS:

- Telecommunication: Cell Phones, PDA / DSL
- Computers: LCD Panel / Printers / Laptop / Servers
- Consumer Electronics: DVD player / MP3 MP4 Player

ENVIRONMENTAL DATA

- Life Test: MIL-STD-202, Method 108D
- Humidity Bias: MIL-STD-202, Method 103
- Moisture Resistance Test: MIL-STD-202, Method106G
- Thermal Shock: MIL-STD-202, Method 107G
- Terminal Strength: AEC-Q200-006
- Board Flex: AEC-Q200-005
- Vibration: MIL-STD-202, Method 204C
- MechanicalShock:MIL-STD-202, Method 213C
- Solderability: MIL-STD-202 Method 208H
- Resistance to Solder Heat: MIL-STD-202, Method 210B

ELECTRICAL SPECIFICATIONS

ELECTRICAL SPECIFICATIONS								
Part Number	Current Rating	Voltage Rating		Interrupting Rating*	Resistance (ohms)** Typ.	Typical Melt I^2t*** DC (A^2s)	Typical Voltage Drop (V)****	Alpha Code Marking*****
		AC	DC	AC/DC				
ALPS0603FA250	250mA	32V	32V	50A	5.100	0.00042	0.91	D
ALPS0603FA375	375mA	32V	32V	50A	2.200	0.00093	0.59	E
ALPS0603FA500	500mA	32V	32V	50A	1.100	0.001	0.57	F
ALPS0603FA750	750mA	32V	32V	50A	0.700	0.009	0.43	G
ALPS0603FA1	1A	32V	32V	50A	0.205	0.011	0.32	H
ALPS0603FA1.5	1.5A	32V	32V	50A	0.092	0.045	0.27	K
ALPS0603FA2	2A	32V	32V	50A	0.063	0.115	0.16	N
ALPS0603FA2.5	2.5A	32V	32V	50A	0.040	0.14	0.15	O
ALPS0603FA3	3A	32V	32V	50A	0.028	0.21	0.14	P
ALPS0603FA3.5	3.5A	32V	32V	50A	0.022	0.5	0.13	R
ALPS0603FA4	4A	32V	32V	50A	0.018	0.56	0.12	S
ALPS0603FA5	5A	32V	32V	50A	0.012	1.2	0.11	T
ALPS0603FA6	6A	32V	32V	50A	0.010	1.7	0.11	Y
ALPS0603FA7	7A	32V	32V	50A	0.08	2.3	0.09	X
ALPS0603FA8	8A	32V	32V	50A	0.075	3	0.08	Z

- *AC Interrupting Rating (Measured at rated voltage with a unity power factor); DC interrupting rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source)
- **DC Cold Resistance (Measured at 10% of rated current)
- *** Typical Melting I2t (Measured with a battery bank at rated DC voltage, 10x-rated current, not to exceed IR, time constant of calibrated circuit less than 50 microseconds) (6A,7A & 8A measured at interrupting rating)
- **** Typical Voltage drop (measured at rated current after temperature stabilizes)
- Device designed to carry rated current for four hours minimum. An operating current of 75% or less of rated current is recommended, with further derating required at elevated ambient temperatures.

ELECTRICAL CHARACTERISTICS			
TYPE	AMPER RATING	% of Amp RATING	OPENING TIME
ALPS0603FXX	250mA-8A	100%	4 Hours Minimum
	250mA-8A	250%	5 Seconds Maximum

TYPICAL DEVICE CHARACTERISTICS CURVES

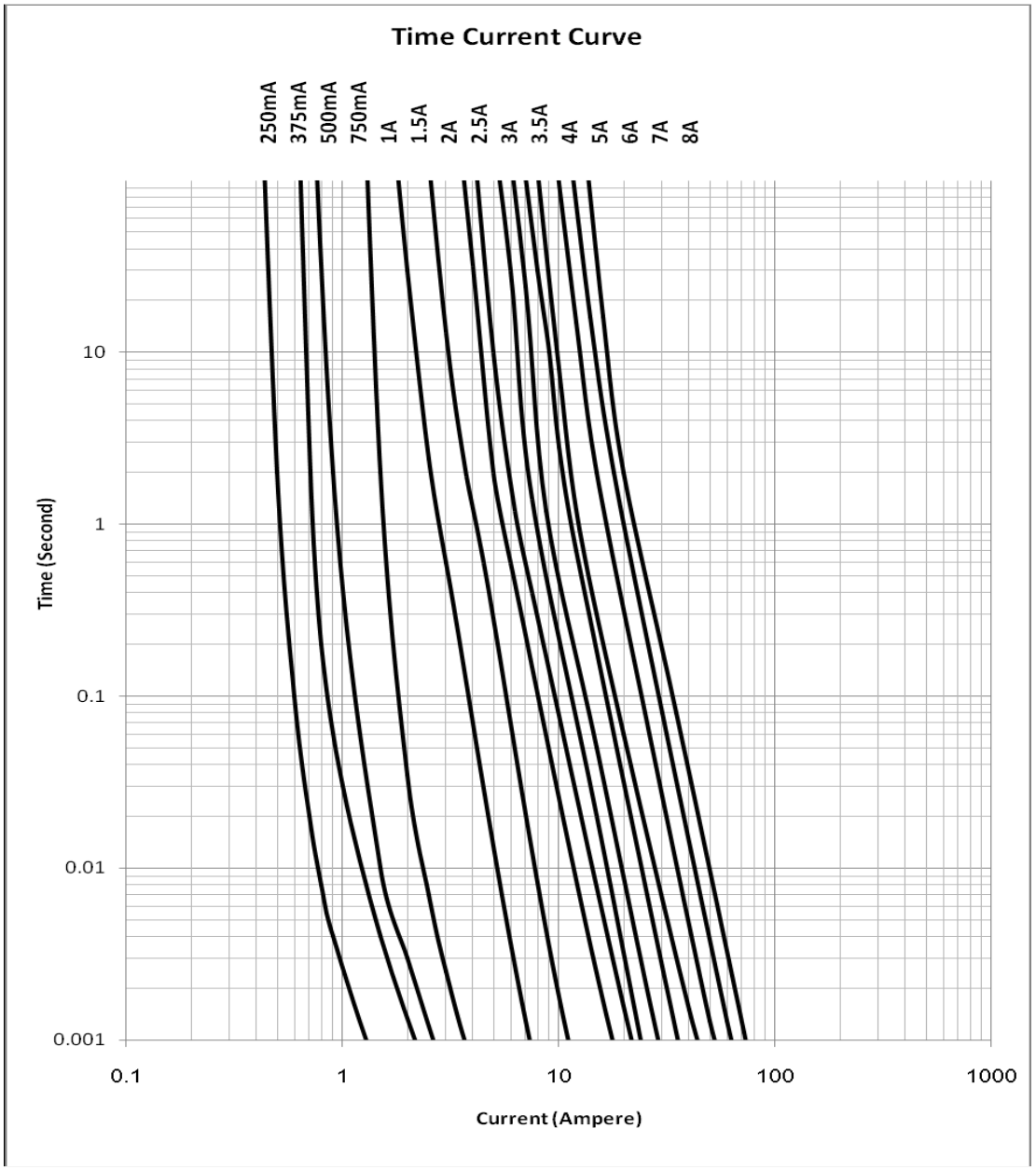
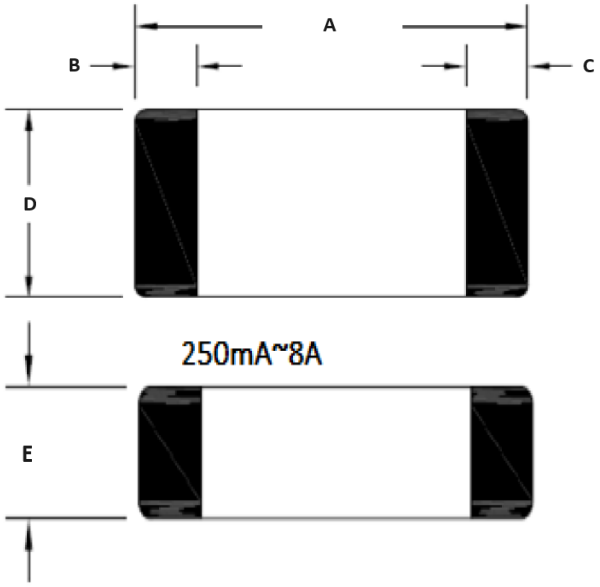


Fig1: TIME CURRENT CURVE

PACKAGE INFORMATION

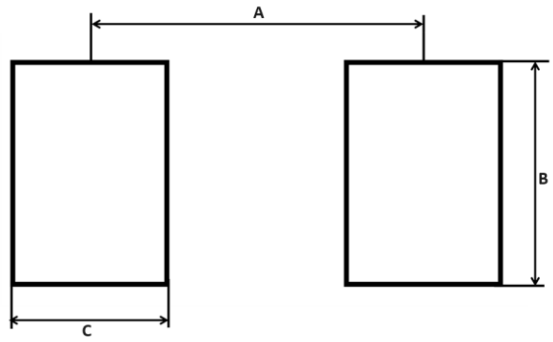
DIMENSIONS



	OUTLINE DIMENSIONS					
SYMBOL	MILLIMETERS			INCHES		
	MIN	TYP	MAX	MIN	TYP	MAX
A	1.40	1.60	1.80	0.055	0.063	0.071
B	0.35 Typ.			0.014 Typ.		
C	0.35 Typ.			0.014 Typ.		
D	0.60	0.80	1.00	0.024	0.031	0.039
E	0.30	0.45	0.65	0.012	0.018	0.026

Note:
1. Controlling dimension: in millimeters.
2. General tolerance: ±0.05mm

SUGGESTED SOLDER PAD LAYOUT



OUTLINE DIMENSIONS		
SYMBOL	MILLIMETERS	INCHES
A	1.25	0.049
B	1.00	0.039
C	0.50	0.020

ORDER INFORMATION

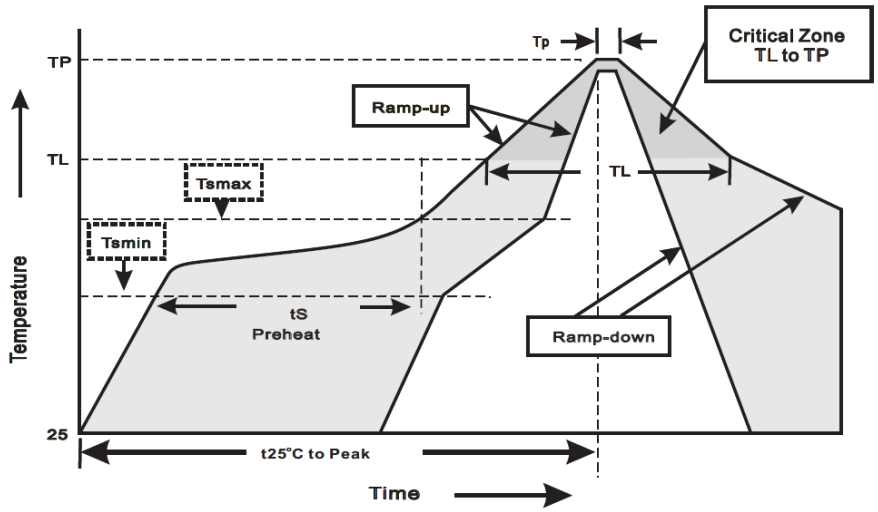
Specify Packaging and product code (i.e., **ALP S0603 F XX - TR**)

ALP: Alpinesemi
S0603: Series Size
F: Fast Acting
XX: Ampere Rating
TR: 5,000 pieces of fuses on 8mm tape-and-reel on a 7-inch (178mm) reel per EIA Standard 481

SOLDERING PARAMETERS

SUGGESTED THERMAL PROFILES FOR SOLDERING PROCESSES

1. Storage environment: Temperature=5 °C~40 °C Humidity=55% ±25%
2. Wave soldering: 260 °C, 10sec max.
3. Reflow soldering of surface-mount devices



4. Reflow soldering: 260 °C, 30sec max.

PROFILE FEATURE	SOLDERING CONDITION
Average ramp-up rate (T_L to T_P)	<3 °C/sec
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (min to max) (t_s)	 150 °C 200 °C 60 ~ 120 sec
T_{smax} to T_L - Ramp-upRate	 <3 °C/sec
Time maintained above: - Temperature (T_L) - Time(tL)	 217 °C 60 ~ 260 sec
Peak Temperature (T_P)	260 °C-0/+5 °C
Time within 5 °C of actual Peak Temperature(tP)	10 ~ 30 sec
Ramp-down Rate	<6 °C/sec
Time 25 °C to Peak Temperature	<6 minutes

CUSTOMER NOTE:

DISCLAIMER

The product information and the selection guide facilitates the selection of the ALPINESEMI™'s Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review the Data sheet(s) so as to confirm that the Device(s) meets functionality parameters for your application. The information furnished on the Data Sheet and the ALPINESEMI™'s Web Site is believed to be accurate and reliable at the time of preparation of this document. ALPINESEMI™ however, does not assume any inaccuracies that may arise when the components are mounted and removed. Furthermore, ALPINESEMI™ does not assume liability whatsoever, arising out of the application or the use of any of ALPINESEMI™'s product(s). Neither, does it convey any license under its patent rights nor the rights of others. These products are not guaranteed for use in life saving/support appliances or systems. ALPINESEMI™'s customers using these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and ALPINESEMI™ will not be responsible in any way(s) for any damage(s) resulting from such use.

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Component Disposal Instructions

1. ALPINESEMI™ Semiconductor Devices are RoHS compliant and hence customers are requested to dispose as per the prevailing Environmental Legislation put forth in their specific country.

2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

ALPINESEMI®

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