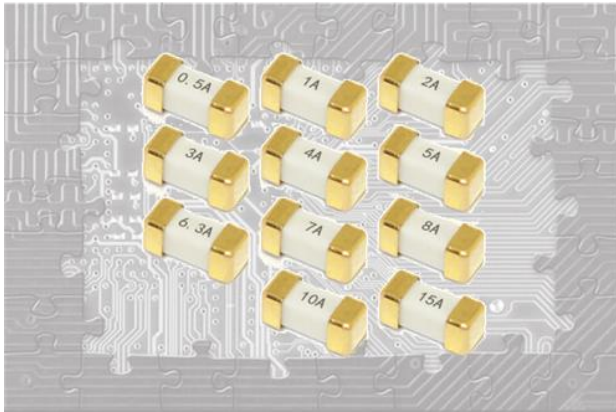


SURFACE MOUNT FUSES - TIME DELAY

DESCRIPTION:



ALPS1040TDXX is Slow Blow surface mount fuse Rugged ceramic construction. Designed to UL 248-14, Excellent environmental performance with RoHS Compliant.

FEATURES:

- Time-delay surface mount fuse
- Satisfies the EIA/IS-722 Standard
- Solder immersion compatible
- Thick film manufacturing method, ceramic substrate, silver fusing element
- -55°C ~ 125°C operating temperature
- Excellent environmental integrity
- RoHS compliant
- Halogen-free

APPLICATIONS:

- Power Supply
- Industrial Equipment
- Lighting System
- Medical Equipment
- White goods



beyond boundaries...

ALPS1040TDXX Series

Brick Fuses

ELECTRICAL SPECIFICATIONS

ELECTRICAL SPECIFICATIONS				
Product Code	Current Rating	Voltage Rating Interrupting Rating*	Resistance (ohms)** Typ.	Typical Melt I ² t*** DC (A ² s)
ALPS1040TD500	500mA	250Vac@150A 125Vdc@150A 75Vdc@500A 32Vdc@1000A	551	1.20
ALPS1040TD630	630mA		350	2.05
ALPS1040TD750	750mA		185	3.15
ALPS1040TD1	1A		170	4.01
ALPS1040TD1.25	1.25A		115	7.40
ALPS1040TD1.5	1.5A		75	12.0
ALPS1040TD1.6	1.6A		71	12.6
ALPS1040TD2	2A		55	14.5
ALPS1040TD2.5	2.5A		40	28.5
ALPS1040TD3.15	3.15A		31	48.0
ALPS1040TD4	4A		22	72.0
ALPS1040TD5	5A		12.5	112
ALPS1040TD6.3	6.3A		12	145
ALPS1040TD8	8A		8.5	161
ALPS1040TD10	10A		5.3	170
ALPS1040TD12	12A		4.5	220
ALPS1040TD15	15A		3.8	300
ALPS1040TD20	20A		2.4	480
ALPS1040TD25	25A		1.8	720
ALPS1040TD30	30A		1.4	920

*AC Interrupting Rating (Measured at rated voltage with a unity power factor >0.95);

**DC Cold Resistance (Measured at 10% of rated current)

*** Typical Melting I²t are measured at 10In Current

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 CURRENT RATING	OPENING TIME
ALPS1040-TD	500mA-30A	100%	4 Hours Min
	500mA-30A	200%	120 Seconds Max

ORDER INFORMATION

Specify Packaging and product code (i.e., ALPS1040TDXX-TRH)

ALP: Alpinesemi

S1040: Series Size

TD: Time Delay

XX: Ampere Rating

TRH: 2,000 pieces of fuses on 24mm tape-and-reel EIA Standard 481-2

PRODUCT CHARACTERISTICS

ITEM	TEST CONDITION/ METHODS	PERFORMANCE	STANDARD
Time/Current	100% of current rating	No Fusing, 4hours Min.	UL248-14
	250% of current rating	0.5A ~ 0.75A: ≤20sec 1.0A ~ 7.0A: ≤5sec	ALP SPEC.
	1000% of current rating	>0.1ms	IEC60127-4
Voltage Drop	100% of current rating	Deviation between the mean value: <15%	IEC60127-4
Temperature Rise	100% of current rating	ΔT <75°C	IEC60127-4
Endurance Test	100 cycles of 1In for 1h "ON", for 15min "OFF", then following by 1h at 125%In	ΔR : <10%	IEC60127-4
Interrupting Ability	0.5A ~ 3.5A: 50A 32V DC 4.0A ~ 7.0A: 35A 32V DC	without permanent arcing, ignition, and bursting of fuse link	UL248-14 IEC60127-4
Solderability	240°C ±5°C, 3sec ±0.5sec	95% coverage Min.	IEC60127-4 MIL-STD-202 Method 208
Resistance to Soldering	260°C ±5°C, 10sec ±0.5sec	ΔR : <10% Legible appearance	MIL-STD-202 Method 210
Bending Test	Distance between holding points: 90mm Bending: 1mm, time: 10sec	ΔR : <10% No mechanical damages	IEC60127-4
High Temperature Operating Life	T=70°C ±2°C, 60%In, 96hours	ΔR : <10%; No fusing	MIL-STD-202 Method 108
Humidity (Steady State)	T=40°C ±2°C, 90% ~ 95%RH, 1000hours	ΔR : <10%	MIL-STD-202 Method 103
Low Temperature Storage	T=-55°C ±3°C, 96hours	ΔR : <10%	IEC60068-2-1
High Temperature Storage	T=125°C ±2°C, 96hours	ΔR : <10%	IEC60068-2-2
Salt Spray	5% salt solution, 48hours	ΔR : <10% Legible appearance	MIL-STD-202 Method 101
Thermal Shock	100 cycles between -65°C / +125°C 60 minutes, each extreme	ΔR : <10% No mechanical damages	MIL-STD-202 Method 107

TYPICAL DEVICE CHARACTERISTICS CURVES

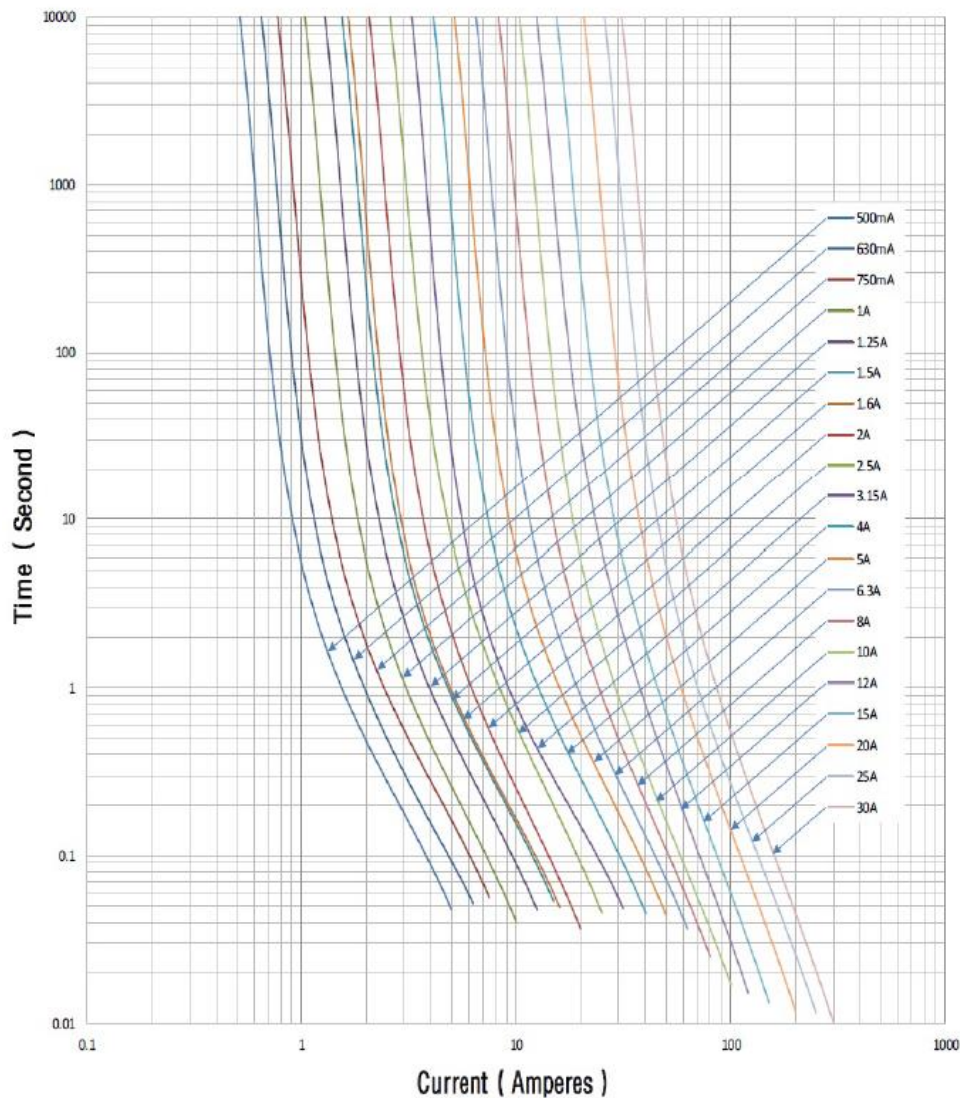
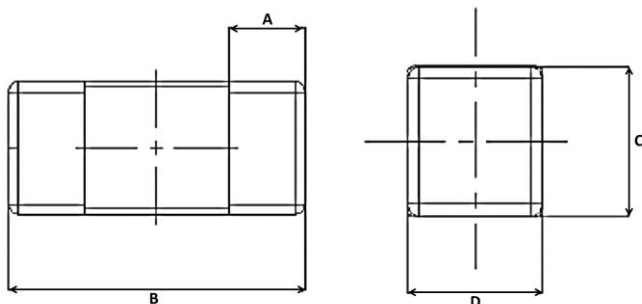
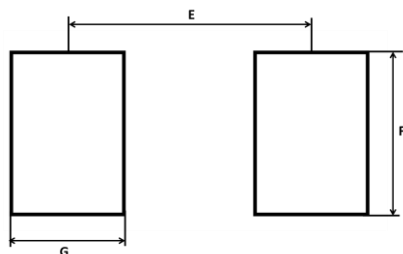


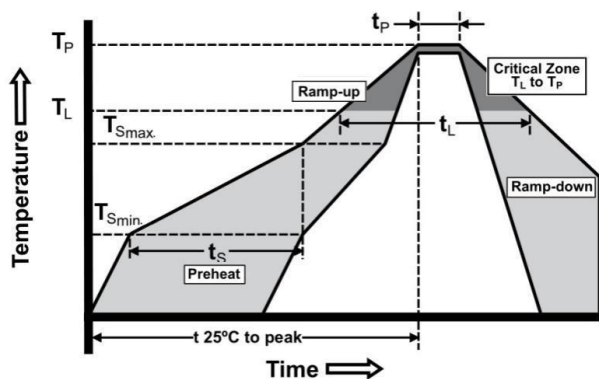
Fig1: TIME CURRENT CURVE

PACKAGE INFORMATION
DIMENSIONS

LAND PATTERN


OUTLINE DIMENSIONS (mm)		
SYMBOL	MAX	
A	2.6±0.3mm	
B	12mm	
C	4.0±0.6mm	
D	4.0±0.6mm	
LAND PATTERN	MIN	MAX
E	10.3mm	10.4mm
F	5.6mm	5.7mm
G	3.5mm	3.6mm

RECOMMENDED SOLDER CURVE
Reflow Soldering:

- Temperature: 260°C
- Time: 30 sec Max.
- Recommend Reflow profile



Profile Feature	Pb Free Assembly
Average Ramp-up Rate (TSmax to TP)	3°C sec Max.
Preheat Temperature Min. (TSmin)	150°C
Temperature Max. (TSmax)	200°C
Time (TSmin to TSmax)	60sec ~ 120sec
Peak Temperature (TP)	260°C
Time within 5°C of actual Peak Temperature(tp)	20sec
Melting tin time(tL)	60sec ~ 150sec
Ramp-down Rate	6°C /sec Max.
Time 25°C to peak Temperature	8minutes Max.

Wave soldering

- Reservoir Temperature: 260°C
- Time in Reservoir: 10sec Max.



beyond boundaries...

ALPS1040TDXX Series

Brick Fuses

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).



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