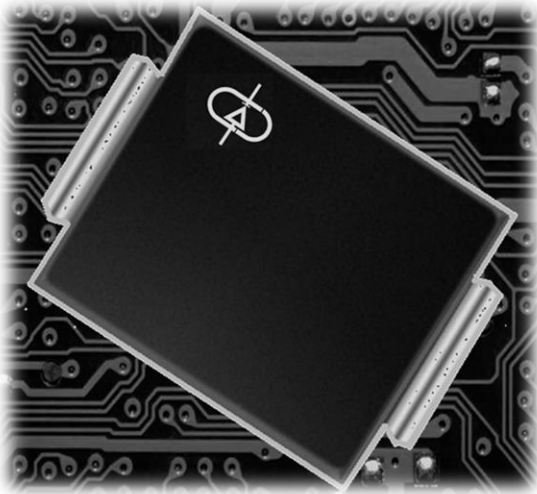


SOLID-STATE OVER-VOLTAGE PROTECTION THYRISTORS

DESCRIPTION:



The ALPPXXSX Series are designed specifically to protect sensitive electronic equipment from low voltage overshoot and low on-state voltage.

The ALPPXXSX Series are designed to protect equipment such as Line Cards, Modems, Fax Machines, and other CPE from damaging overvoltage transients.



Schematic Diagram

FEATURES:

- Low voltage overshoot
- Low on-state voltage
- Low capacitance
- Does not degrade with use
- Fails short circuit when surged in excess of ratings
- DO-214AA (SMB)Package
- Complies with: ITU K.20, K.21, K.45, TIA-968, GR 1089, IEC60950, UL60950 (FCC Part68)
- RoHS compliant

APPLICATIONS:

- Line Cards
- Modems
- Fax Machines
- Other CPE.



beyond boundaries...

ALPPXXSX Series
DO-214AA(SMB)

TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Operating Junction Temperature range	T_J	-40 to +150	$^{\circ}\text{C}$
Storage Temperature range	T_S	-40 to +150	$^{\circ}\text{C}$
Thermal Resistance: Junction to Ambient	$R_{\theta JA}$	90	$^{\circ}\text{C} / \text{W}$

TYPICAL ELECTRICAL CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified							
PART NUMBER (Notes 1-2)	V_{DRM} @ $I_{\text{DRM}}=5\mu\text{A}$	V_s @ $100\text{V}/\mu\text{s}$	I_H	I_s	I_T	V_T @ $I_T=2.2\text{A}$	Capacitance @ $1\text{MHz}, 2\text{V}$
	V min	V max	mA min	mA max	A max	V max	pF min~max
ALPP0080SA	6	25	50	800	2.2	4	25~150
ALPP0300SA	25	40	50	800	2.2	4	15~140
ALPP0640SA	58	77	150	800	2.2	4	40~60
ALPP0720SA	65	88	150	800	2.2	4	35~60
ALPP0900SA	75	98	150	800	2.2	4	25~55
ALPP1100SA	90	130	150	800	2.2	4	30~50
ALPP1300SA	120	160	150	800	2.2	4	25~45
ALPP1500SA	140	180	150	800	2.2	4	25~45
ALPP1800SA	170	220	150	800	2.2	4	25~50
ALPP2300SA	190	260	150	800	2.2	4	25~50
ALPP2600SA	220	300	150	800	2.2	4	20~50
ALPP3100SA	275	350	150	800	2.2	4	20~45
ALPP3500SA	320	400	150	800	2.2	4	20~45
ALPP0080SB	6	25	50	800	2.2	4	25~80
ALPP0300SB	25	40	50	800	2.2	4	15~140
ALPP0640SB	58	77	150	800	2.2	4	40~80
ALPP0720SB	65	88	150	800	2.2	4	35~75
ALPP0900SB	75	98	150	800	2.2	4	35~70
ALPP1100SB	90	130	150	800	2.2	4	30~70
ALPP1300SB	120	160	150	800	2.2	4	25~70
ALPP1500SB	140	180	150	800	2.2	4	25~70
ALPP1800SB	170	220	150	800	2.2	4	25~70
ALPP2300SB	190	260	150	800	2.2	4	25~70
ALPP2600SB	220	300	150	800	2.2	4	20~70
ALPP3100SB	275	350	150	800	2.2	4	20~65
ALPP3500SB	320	400	150	800	2.2	4	20~60

PART NUMBER (Notes 1-2)	V_{DRM} @ $I_{DRM}=5\mu A$	V_S @ $100V/\mu s$	I_H	I_S	I_T	V_T @ $I_T=2.2A$	Capacitance @ $1MHz, 2V$
	V min	V max	mA min	mA max	A max	V max	pF min~max
ALPP0080SC	6	25	50	800	2.2	4	45~100
ALPP0300SC	25	40	50	800	2.2	4	25~80
ALPP0640SC	58	77	150	800	2.2	4	55~155
ALPP0720SC	65	88	150	800	2.2	4	50~150
ALPP0900SC	75	98	150	800	2.2	4	45~140
ALPP1100SC	90	130	150	800	2.2	4	45~115
ALPP1300SC	120	160	150	800	2.2	4	40~115
ALPP1500SC	140	180	150	800	2.2	4	35~115
ALPP1800SC	170	220	150	800	2.2	4	35~110
ALPP2300SC	190	260	150	800	2.2	4	30~120
ALPP2600SC	220	300	150	800	2.2	4	30~120
ALPP3100SC	275	350	150	800	2.2	4	30~110
ALPP3500SC	320	400	150	800	2.2	4	25~110
ALPP4000SC	360	460	150	800	2.2	4	25~110
ALPP4500SC	420	540	150	800	2.2	4	25~110
ALPP5000SC	500	600	150	800	2.2	4	25~110

SURGE RATINGS

Series	I_{PP}						I_{TSM} 50/60Hz	di/dt
	2x10	8x20	10x160	10x560	5x310	10x1000		
	A min	A min	A min	A min	A min	A min	A min	A/ μs max
SA	150	150	90	50	75	45	20	500
SB	250	250	150	100	100	80	30	500
SC	500	400	200	150	200	100	50	500

Notes:

- Current waveform in μs
- Peak pulse current rating (I_{PP}) is repetitive and guaranteed for the life of the product.
- I_{PP} ratings applicable over temperature range of $-40^{\circ}C$ to $+85^{\circ}C$
- The device must initially be in thermal equilibrium with $-40^{\circ}C \leq T_J \leq +150^{\circ}C$

TYPICAL DEVICE CHARACTERISTICS CURVES

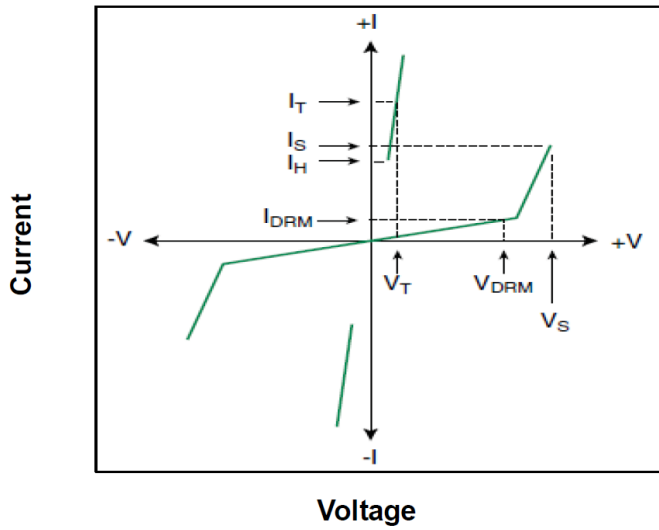


Fig1. V-I CHARACTERISTICS

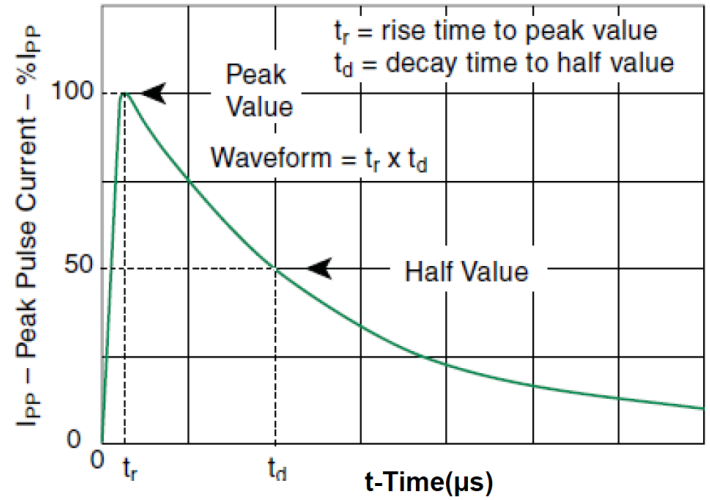


Fig2. tr & td PULSE WAVEFORMS

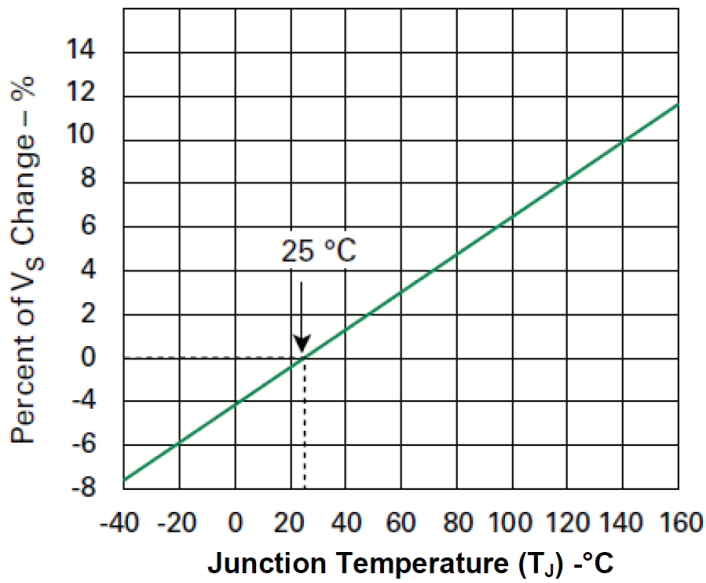


Fig3. NORMALIZED VS CHANGE
VS.
JUNCTION TEMPERATURE

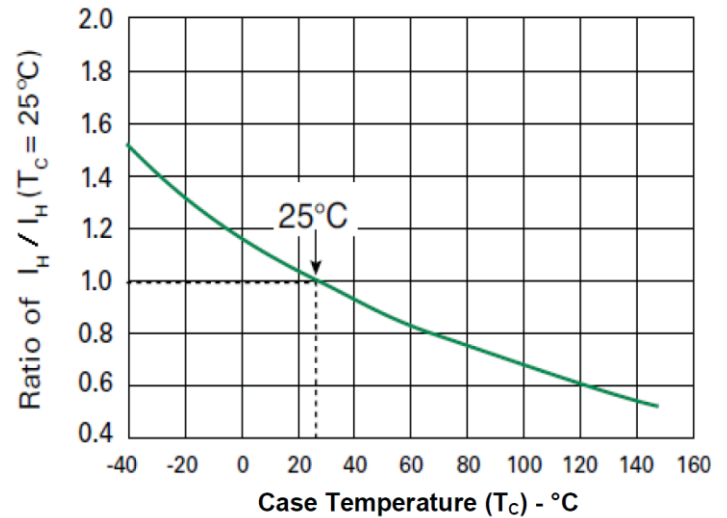
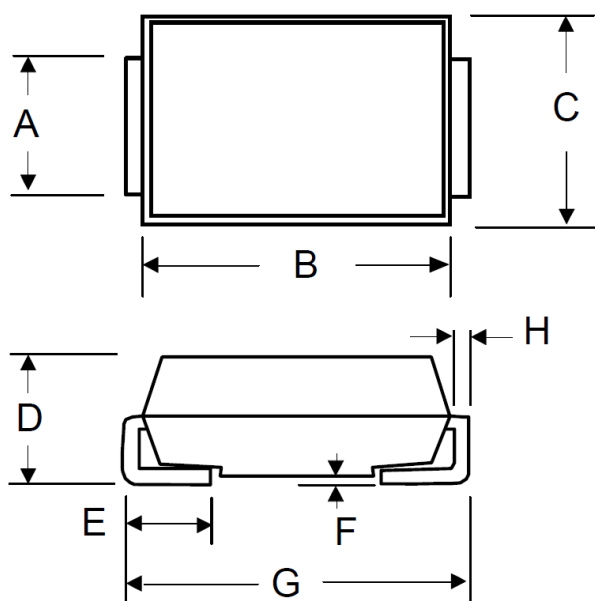


Fig4. NORMALIZED DC HOLDING CURRENT
VS.
CASE TEMPERATURE

PACKAGE INFORMATION

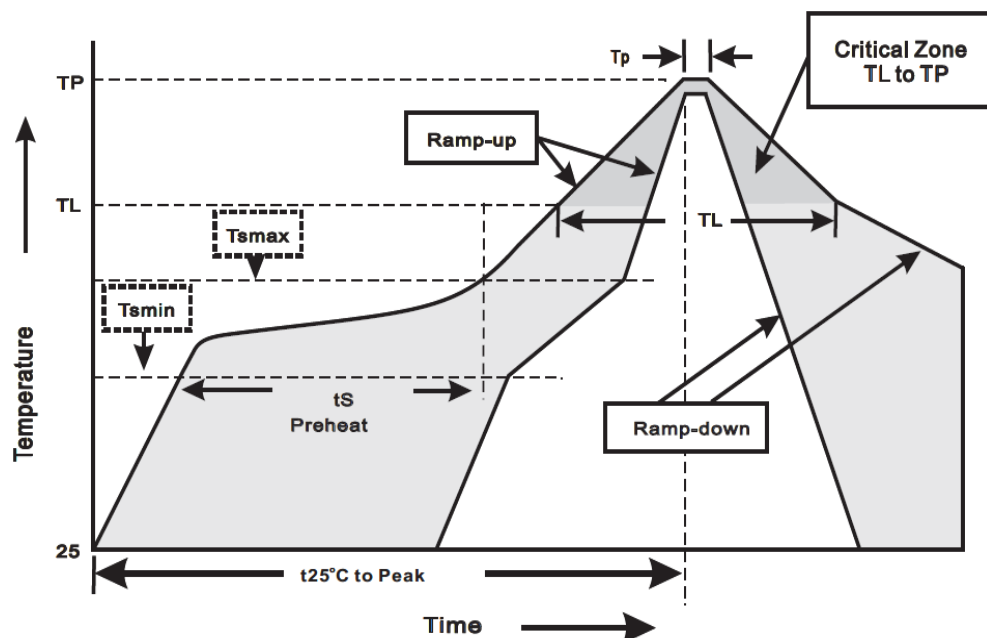


OUTLINE DIMENSIONS		
DIM	MILLIMETERS	
	MIN	MAX
A	1.93	2.20
B	4.05	4.60
C	3.30	3.95
D	1.95	2.65
E	0.75	1.60
F	0.05	0.20
G	5.10	5.60
H	0.15	0.41
NOTES 1. Dimensions are exclusive of mold flash and metal burrs.		

SOLDERING PARAMETERS

SUGGESTED THERMAL PROFILES FOR SOLDERING PROCESSES

1. Storage environment: Temperature=5 °C~40 °C Humidity=55% ±25%
2. Reflow soldering of surface-mount devices



3. Reflow soldering

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(t_L)	217 °C 60 ~ 260 sec
Peak Temperature (T_P)	255 °C-0/+5 °C
Time within 5 °C of actual Peak Temperature(t_P)	10 ~ 30 sec
Ramp-down Rate	<6 °C/sec
Time 25 °C to Peak Temperature	<6 minutes



beyond boundaries...

ALPPXXSX Series

DO-214AA(SMB)

CUSTOMER NOTE:

DISCLAIMER

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



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