

PROTECTION THYRISTOR SERIES

DESCRIPTION:



The ALPPXXX0SXLRP Series DO-214AA are designed to protect baseband equipment such as modems, line cards, CPE and DSL from damaging overvoltage transients.

The series provides a surface mount solution that enables equipment to comply with global regulatory standards.

FEATURES:

- Low voltage overshoot
- Low on-state voltage
- Does not degrade surge capability after multiple surge events within limit.
- Low capacitance
- Fails short circuit when surged in excess of ratings
- 2nd level interconnect is Pb-free per IPC/JEDEC
- J-STD-609A.01
- RoHS compliant, lead-free and halogen-free.

APPLICATIONS:

- TIA-968-A
- TIA-968-B
- ITU K.20/21/45 Enhanced Level*
- ITU K.20/21/45 Basic Level
- GR 1089 Inter-building*
- GR 1089 Intra-building
- IEC 61000-4-5 2nd edition
- YD/T 1082
- YD/T 993
- YD/T 950

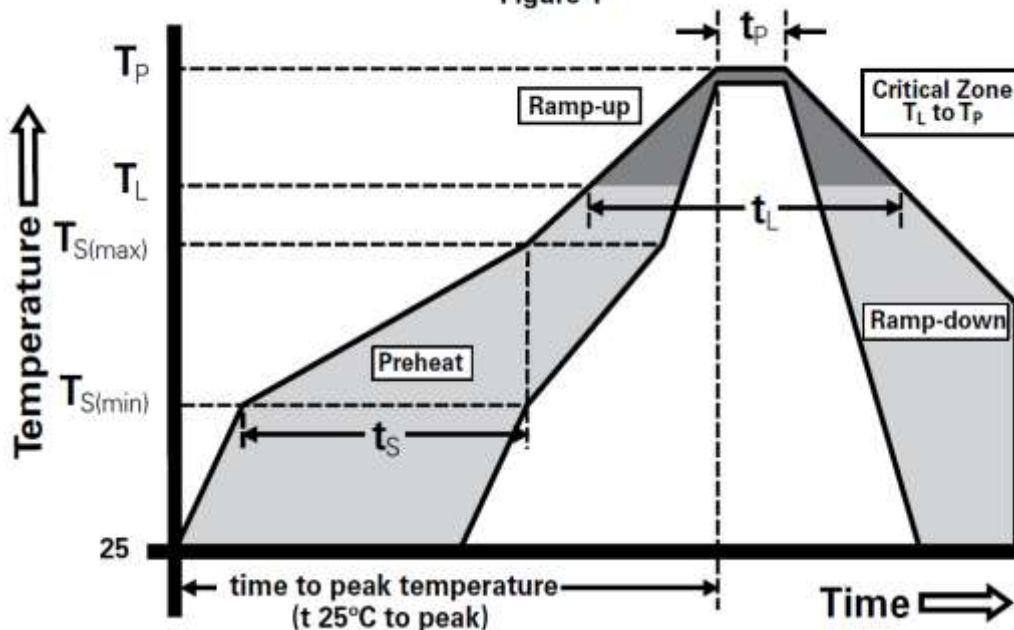
*A/B-rated parts require series resistance

TYPICAL DEVICE CHARACTERISTICS

PHYSICAL SPECIFICATIONS	
Lead Material	Copper Alloy
Terminal Finish	100% Matte-Tin Plated
Body Material	UL recognized epoxy meeting flammability classification V-0

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Operating Junction Temperature Range	T_J	-40 to +150	$^\circ\text{C}$
Storage Temperature Range	T_S	-65 to +150	$^\circ\text{C}$
Thermal Resistance: Junction to Ambient	$R_{\theta JA}$	90	$^\circ\text{C/W}$

SOLDERING PARAMETERS		
Reflow Condition		Pb-Free assembly (see Fig. 1)
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 (LiquidusTemp (T _L) to peak)		3°C/sec. Max.
T _{S(max)} to T _L - Ramp-up Rate		3°C/sec. Max.
Reflow	-Temperature (T _L) (Liquidus)	+217°C
	-Temperature (t _L)	60-150 secs.
PeakTemp (T _p)		+260(+0/-5)°C
Time within 5°C of actual PeakTemp (t _p)		30 secs. Max.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to PeakTemp (T _p)		8 min. Max.
Do not exceed		+260°C

Figure 1




beyond boundaries...

ALPPXXX0SXLRP Series

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
Part Number	V _{DRM} @I _{DRM} =5μA	V _S @100V/μs	I _H	I _S	I _T	V _T @I _T =2.2 Amps	Capacitance @1MHz, 2V bias	
	V min	V max	mA min	mA max	A max	V max	pF min	pF max
ALPP0080SALRP	6	25	50	800	2.2	4	20	35
ALPP0220SALRP	15	32	50	800	2.2	4	20	40
ALPP0300SALRP	25	40	50	800	2.2	4	15	40
ALPP0640SALRP	58	77	150	800	2.2	4	15	40
ALPP0720SALRP	65	88	150	800	2.2	4	15	40
ALPP0900SALRP	75	98	150	800	2.2	4	15	40
ALPP1100SALRP	90	130	150	800	2.2	4	15	40
ALPP1300SALRP	120	160	150	800	2.2	4	15	40
ALPP1500SALRP	140	180	150	800	2.2	4	15	40
ALPP1800SALRP	170	220	150	800	2.2	4	15	35
ALPP2100SALRP	180	240	150	800	2.2	4	15	35
ALPP2300SALRP	190	260	150	800	2.2	4	15	35
ALPP2600SALRP	220	300	150	800	2.2	4	15	35
ALPP3100SALRP	275	350	150	800	2.2	4	15	35
ALPP3500SALRP	320	400	150	800	2.2	4	15	35
ALPP0080SBLRP	6	25	50	800	2.2	4	20	50
ALPP0220SBLRP	15	32	50	800	2.2	4	20	50
ALPP0300SBLRP	25	40	50	800	2.2	4	15	50
ALPP0640SBLRP	58	77	150	800	2.2	4	20	50
ALPP0720SBLRP	65	88	150	800	2.2	4	20	50
ALPP0900SBLRP	75	98	150	800	2.2	4	20	50
ALPP1100SBLRP	90	130	150	800	2.2	4	20	50
ALPP1300SBLRP	120	160	150	800	2.2	4	20	50
ALPP1500SBLRP	140	180	150	800	2.2	4	20	50
ALPP1800SBLRP	170	220	150	800	2.2	4	20	50
ALPP2100SBLRP	180	240	150	800	2.2	4	20	35
ALPP2300SBLRP	190	260	150	800	2.2	4	20	50
ALPP2600SBLRP	220	300	150	800	2.2	4	20	35
ALPP3100SBLRP	275	350	150	800	2.2	4	20	35
ALPP3500SBLRP	320	400	150	800	2.2	4	20	35
ALPP4500SBLRP	400	530	150	800	2.2	4	20	50
ALPP0080SCLRP	6	25	50	800	2.2	4	25	70
ALPP0220SCLRP	15	32	50	800	2.2	4	25	70
ALPP0300SCLRP	25	40	50	800	2.2	4	20	50
ALPP0640SCLRP	58	77	150	800	2.2	4	45	100
ALPP0720SCLRP	65	88	150	800	2.2	4	45	100
ALPP0900SCLRP	75	98	150	800	2.2	4	45	100
ALPP1100SCLRP	90	130	150	800	2.2	4	45	90
ALPP1300SCLRP	120	160	150	800	2.2	4	40	85
ALPP1500SCLRP	140	180	150	800	2.2	4	25	70
ALPP1800SCLRP	170	220	150	800	2.2	4	25	70
ALPP2100SCLRP	180	240	150	800	2.2	4	25	70
ALPP2300SCLRP	190	260	150	800	2.2	4	25	70
ALPP2600SCLRP	220	300	150	800	2.2	4	30	70
ALPP3100SCLRP	275	350	150	800	2.2	4	30	70
ALPP3500SCLRP	320	400	150	800	2.2	4	25	65



beyond boundaries...

ALPPXXX0SXLRP Series

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ALPP4500SCLRP	400	530	150	800	2.2	4	25	65
ALPP4500SCLHLP*	400	530	50	800	2.2	4	20	50
Notes: - Absolute maximum ratings measured at $T_A = 25^\circ\text{C}$ (unless otherwise noted). - Components are bi-directional. * ALPP4500SCLHLP is low IH product								

SURGE RATINGS

Series	I_{PP}									I_{TSM} 50/60 Hz	di/dt
	0.2/310 ¹ 0.5/700 ²	2/10 ¹ 2/10 ²	8/20 ¹ 1.2/50 ²	10/160 ¹ 10/160 ²	10/560 ¹ 10/560 ²	5/320 ¹ 9/720 ²	10/360 ¹ 10/360 ²	10/1000 ¹ 10/1000 ²	5/310 ¹ 10/700 ²		
	A min	A min	A min	A min	A min	A min	A min	A min	A min		Amps/ μs max
A	20	150	150	90	50	75	75	45	75	25	500
B	25	250	250	150	100	100	125	80	100	30	500
C	50	500	400	200	150	200	175	100	200 ³	35	500

Notes:

- 1 Current waveform in μs
- 2 Voltage waveform in μs
- 3 For surge rating of ALPP4500SCLRP 10/700 μs min=150A & typical=180A
For surge rating of ALPP4500SCLHLP 10/700 μs min=150A
- 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°C to $+85^\circ\text{C}$
- The component must initially be in thermal equilibrium with $-40^\circ\text{C} < T_J < +150^\circ\text{C}$

TYPICAL DEVICE CHARACTERISTICS CURVES

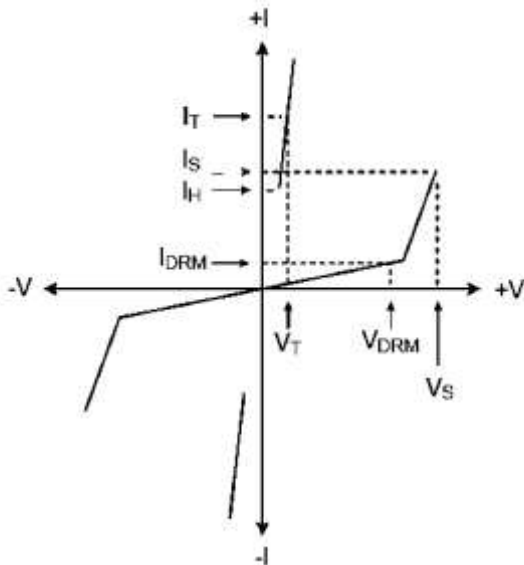


Fig.1 V-I Characteristics

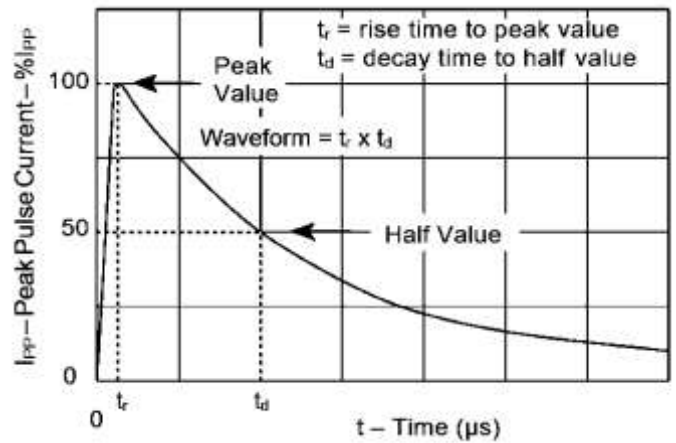


Fig.2 $t_r \times t_d$ Pulse Waveform

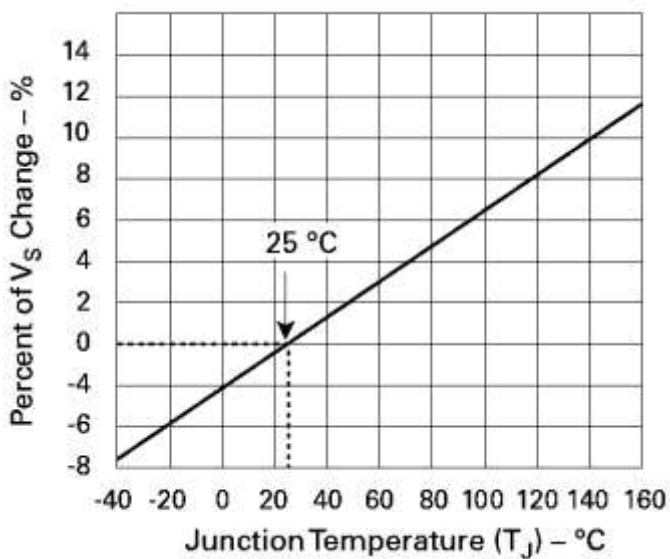


Fig.3 Normalized V_S Change vs. Junction Temperature

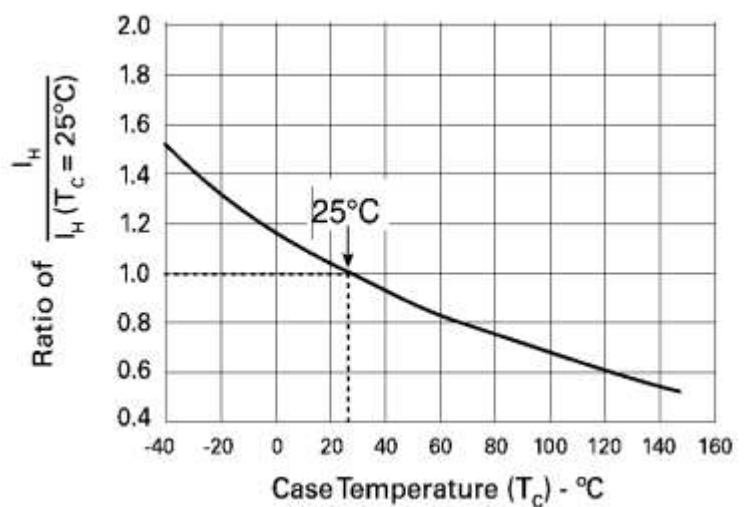
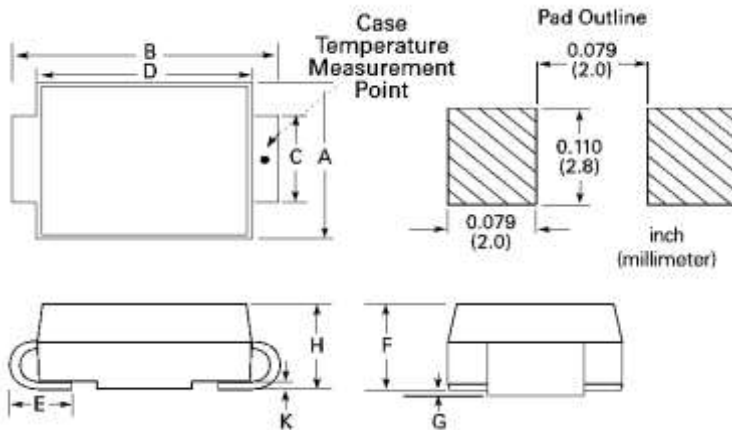


Fig.4 Normalized DC Holding Current vs. Case Temperature

PACKAGE INFORMATION

DO- 214AA



OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	3.30	3.95	0.130	0.156
B	5.10	5.60	0.201	0.220
C	1.95	2.20	0.077	0.087
D	4.05	4.60	0.159	0.181
E	0.75	1.60	0.030	0.063
F	1.90	2.45	0.075	0.096
G	0.05	0.20	0.002	0.008
H	1.95	2.65	0.077	0.104
H*	1.95	2.43	0.077	0.096
K	0.15	0.41	0.006	0.016

NOTES

- H* - ALPP4500SCLHLP



beyond boundaries...

ALPPXXX0SXLRP Series

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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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