

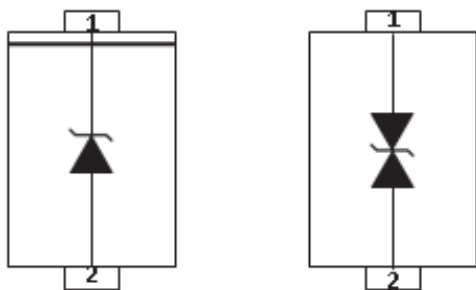
3000-WATT TVS COMPONENT STAND-OFF VOLTAGE 5 TO 440V

DESCRIPTION:



The ALPSMDJXX/C (UNI/BI) and ALPSMDJXXA/CA (UNI/BI) Series are multi-line transient voltage suppressor arrays series that provides board level protection for standard TTL and MOS bus line applications against the damaging effects of ESD, tertiary lightning and switching transients.

The 5.0ALPSMDJXX/C and 5.0ALPSMDJXXA/CA Series has a peak pulse power rating of 5000 Watts for an 10/1000 μ s waveshape.



FEATURES:

- Glass Passivated Chip
- 3000 Watts Peak Pulse Power per Line (tp = 10/1000 μ s)
- Low Leakage Current
- Unidirectional & Bidirectional Configurations
- Available in Multiple Voltages
- Excellent Clamping Capability
- Very Fast Response Time
- RoHS Compliant
- REACH Compliant

APPLICATIONS:

- ESD
- Tertiary lightning
- Switching transients

MECHANICAL CHARACTERISTICS

- Epoxy: UL94-V0 rated flame retardant.
- Case: Molded plastic, DO-214AB / SMD.
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting Position: Any.



beyond boundaries...

ALPSMDJXX / C Series
ALPSMDJXXA / CA Series
DO-214AB (SMD)

TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS $T_A @ 25^{\circ}\text{C}$ Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power dissipation with a $t_p = 10/1000\mu\text{s}$ waveform (Note 1)	P_{PP}	3000	Watts
Peak Pulse Current with a $t_p = 10/1000\mu\text{s}$ waveform (Note 1)	I_{PP}	See Next Table	Amps
Power Dissipation on Infinite Heatsink at $T_L = 75^{\circ}\text{C}$	P_D	6.0	Watts
Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2)	I_{FSM}	300	Amps
Maximum Instantaneous Forward Voltage at 100A - Unidirectional Only (Note 3)	V_F	3.5/5.0	V
Operating Temperature Range	T_J	-55 to 150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}\text{C}$
NOTE			
1. Non-repetitive current pulse per Figure 5 and derated above $T_A = 25^{\circ}\text{C}$ per Figure 1.			
2. Measured on 8.3ms single half sinewave or equivalent square wave, duty cycle = 4 pulses per minute maximum.			
3. $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 201\text{V}$			

ELECTRICAL CHARACTERISTICS PER LINE $T_A @ 25^{\circ}\text{C}$ Unless Otherwise Specified							
PART NUMBER (Notes 1-2)	WORKING PEAK REVERSE VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT @ I_T mA	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_C VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS	MAXIMUM REVERSE LEAKAGE @ V_{RWM} I_R μA
		MIN	MAX				
ALPSMDJ5.0	5.0	6.40	7.30	50	9.6	312.50	5000
ALPSMDJ5.0A	5.0	6.40	7.00	50	9.2	326.09	5000
ALPSMDJ6.0	6.0	6.67	8.15	50	11.4	263.16	5000
ALPSMDJ6.0A	6.0	6.67	7.37	50	10.3	291.26	5000
ALPSMDJ6.5	6.5	7.22	8.82	50	12.3	243.90	2000
ALPSMDJ6.5A	6.5	7.22	7.98	50	11.2	267.86	2000
ALPSMDJ7.0	7.0	7.78	9.51	50	13.3	225.56	1000
ALPSMDJ7.0A	7.0	7.78	8.60	50	12.0	250.00	1000
ALPSMDJ7.5	7.5	8.33	10.20	5	14.3	209.79	250
ALPSMDJ7.5A	7.5	8.33	9.21	5	12.9	232.56	250
ALPSMDJ8.0	8.0	8.89	10.90	5	15.0	200.00	150
ALPSMDJ8.0A	8.0	8.89	9.83	5	13.6	220.59	150
ALPSMDJ8.5	8.5	9.44	11.50	5	15.9	188.68	50
ALPSMDJ8.5A	8.5	9.44	10.40	5	14.4	208.33	50
ALPSMDJ9.0	9.0	10.00	12.20	5	16.9	177.51	20
ALPSMDJ9.0A	9.0	10.00	11.10	5	15.4	194.81	20

ELECTRICAL CHARACTERISTICS PER LINE $T_A @ 25^\circ\text{C}$ Unless Otherwise Specified

PART NUMBER (Notes 1-2)	WORKING PEAK REVERSE VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT @ I_T mA	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_C VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS	MAXIMUM REVERSE LEAKAGE @ V_{RWM} I_R μA
		MIN	MAX				
ALPSMDJ10 / C	10.0	11.10	13.60	5	18.8	159.57	15
ALPSMDJ10A / CA	10.0	11.10	12.30	5	17.0	176.47	15
ALPSMDJ11 / C	11.0	12.20	14.90	5	20.1	149.25	2
ALPSMDJ11A / CA	11.0	12.20	13.50	5	18.2	164.84	2
ALPSMDJ12 / C	12.0	13.30	16.30	5	22.0	136.36	2
ALPSMDJ12A / CA	12.0	13.30	14.70	5	19.9	150.75	2
ALPSMDJ13 / C	13.0	14.40	17.60	5	23.8	126.05	2
ALPSMDJ13A / CA	13.0	14.40	15.90	5	21.5	139.53	2
ALPSMDJ14 / C	14.0	15.60	19.10	5	25.8	116.28	2
ALPSMDJ14A / CA	14.0	15.60	17.20	5	23.2	129.31	2
ALPSMDJ15 / C	15.0	16.70	20.40	5	26.9	111.52	2
ALPSMDJ15A / CA	15.0	16.70	18.50	5	24.4	122.95	2
ALPSMDJ16 / C	16.0	17.80	21.80	5	28.8	104.17	2
ALPSMDJ16A / CA	16.0	17.80	19.70	5	26.0	115.38	2
ALPSMDJ17 / C	17.0	18.90	23.10	5	30.5	98.36	2
ALPSMDJ17A / CA	17.0	18.90	20.90	5	27.6	108.70	2
ALPSMDJ18 / C	18.0	20.00	24.40	5	32.2	93.17	2
ALPSMDJ18A / CA	18.0	20.00	22.10	5	29.2	102.74	2
ALPSMDJ19 / C	19.0	21.13	25.76	5	34.0	88.21	2
ALPSMDJ19A / CA	19.0	21.10	23.30	5	30.8	97.47	2
ALPSMDJ20 / C	20.0	22.20	27.10	5	35.8	83.80	2
ALPSMDJ20A / CA	20.0	22.20	24.50	5	32.4	92.59	2
ALPSMDJ22 / C	22.0	24.40	29.80	5	39.4	76.14	2
ALPSMDJ22A / CA	22.0	24.40	26.90	5	35.5	84.51	2
ALPSMDJ24 / C	24.0	26.70	32.60	5	43.0	69.77	2
ALPSMDJ24A / CA	24.0	26.70	29.50	5	38.9	77.12	2

ELECTRICAL CHARACTERISTICS PER LINE $T_A @ 25^\circ\text{C}$ Unless Otherwise Specified

PART NUMBER (Notes 1-2)	WORKING PEAK REVERSE VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT @ I_T mA	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_C VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS	MAXIMUM REVERSE LEAKAGE @ V_{RWM} I_R μA
		MIN	MAX				
ALPSMDJ26 / C	26.0	28.90	35.30	5	46.6	64.38	2
ALPSMDJ26A / CA	26.0	28.90	31.90	5	42.1	71.26	2
ALPSMDJ28 / C	28.0	31.10	38.00	5	50.0	60.00	2
ALPSMDJ28A / CA	28.0	31.10	34.40	5	45.4	66.08	2
ALPSMDJ30 / C	30.0	33.30	40.70	5	53.5	56.07	2
ALPSMDJ30A / CA	30.0	33.30	36.80	5	48.4	61.98	2
ALPSMDJ33 / C	33.0	36.70	44.90	5	59.0	50.85	2
ALPSMDJ33A / CA	33.0	36.70	40.60	5	53.3	56.29	2
ALPSMDJ36 / C	36.0	40.00	48.90	5	64.3	46.66	2
ALPSMDJ36A / CA	36.0	40.00	44.20	5	58.1	51.64	2
ALPSMDJ40 / C	40.0	44.40	54.30	5	71.4	42.02	2
ALPSMDJ40A / CA	40.0	44.40	49.10	5	64.5	46.51	2
ALPSMDJ43 / C	43.0	47.80	58.40	5	76.7	39.11	2
ALPSMDJ43A / CA	43.0	47.80	52.80	5	69.4	43.23	2
ALPSMDJ45 / C	45.0	50.00	61.10	5	80.3	37.36	2
ALPSMDJ45A / CA	45.0	50.00	55.30	5	72.7	41.27	2
ALPSMDJ48 / C	48.0	53.30	65.10	5	85.5	35.09	2
ALPSMDJ48A / CA	48.0	53.30	58.90	5	77.4	38.76	2
ALPSMDJ51 / C	51.0	56.70	69.30	5	91.1	32.93	2
ALPSMDJ51A / CA	51.0	56.70	62.70	5	82.4	36.41	2
ALPSMDJ54 / C	54.0	60.00	73.30	5	96.3	31.15	2
ALPSMDJ54A / CA	54.0	60.00	66.30	5	87.1	34.44	2
ALPSMDJ58 / C	58.0	64.40	78.70	5	103.0	29.13	2
ALPSMDJ58A / CA	58.0	64.40	71.20	5	93.6	32.05	2
ALPSMDJ60 / C	60.0	66.70	81.50	5	107.0	28.04	2
ALPSMDJ60A / CA	60.0	66.70	73.70	5	96.8	30.99	2

ELECTRICAL CHARACTERISTICS PER LINE $T_A @ 25^\circ\text{C}$ Unless Otherwise Specified

PART NUMBER (Notes 1-2)	WORKING PEAK REVERSE VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT @ I_T mA	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_C VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS	MAXIMUM REVERSE LEAKAGE @ V_{RWM} I_R μA
		MIN	MAX				
ALPSMDJ64 / C	64.0	71.10	86.90	5	114.0	26.32	2
ALPSMDJ64A / CA	64.0	71.10	78.60	5	103.0	29.13	2
ALPSMDJ70 / C	70.0	77.80	95.10	5	125.0	24.00	2
ALPSMDJ70A / CA	70.0	77.80	86.00	5	113.0	26.55	2
ALPSMDJ75 / C	75.0	83.30	102.00	5	134.0	22.39	2
ALPSMDJ75A / CA	75.0	83.30	92.10	5	121.0	24.79	2
ALPSMDJ78 / C	78.0	86.70	106.00	5	139.0	21.58	2
ALPSMDJ78A / CA	78.0	86.70	95.80	5	126.0	23.81	2
ALPSMDJ80 / C	80.0	88.96	108.80	5	143.2	20.95	2
ALPSMDJ80A / CA	80.0	88.80	97.60	5	129.6	23.15	2
ALPSMDJ85 / C	85.0	94.40	115.00	5	151.0	19.87	2
ALPSMDJ85A / CA	85.0	94.40	104.00	5	137.0	21.90	2
ALPSMDJ90 / C	90.0	100.00	122.00	5	160.0	18.75	2
ALPSMDJ90A / CA	90.0	100.00	111.00	5	146.0	20.55	2
ALPSMDJ100 / C	100.0	111.00	136.00	5	179.0	16.76	2
ALPSMDJ100A / CA	100.0	111.00	123.00	5	162.0	18.52	2
ALPSMDJ110 / C	110.0	122.00	149.00	5	196.0	15.31	2
ALPSMDJ110A / CA	110.0	122.00	135.00	5	177.0	16.95	2
ALPSMDJ120 / C	120.0	133.00	163.00	5	214.0	14.02	2
ALPSMDJ120A / CA	120.0	133.00	147.00	5	193.0	15.54	2
ALPSMDJ130 / C	130.0	144.00	176.00	5	231.0	12.99	2
ALPSMDJ130A / CA	130.0	144.00	159.00	5	209.0	14.35	2
ALPSMDJ140 / C	140.0	155.68	190.40	5	250.6	11.97	2
ALPSMDJ140A / CA	140.0	155.00	171.00	5	226.8	13.23	2
ALPSMDJ150 / C	150.0	167.00	204.00	5	268.0	11.19	2
ALPSMDJ150A / CA	150.0	167.00	185.00	5	243.0	12.35	2

ELECTRICAL CHARACTERISTICS PER LINE $T_A @ 25^\circ\text{C}$ Unless Otherwise Specified

PART NUMBER (Notes 1-2)	WORKIN G PEAK REVERSE VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT @ I_T mA	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_C VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS	MAXIMUM REVERSE LEAKAGE @ V_{RWM} I_R μA
		MIN	MAX				
ALPSMDJ160 / C	160.0	178.00	218.00	5	287.0	10.45	2
ALPSMDJ160A / CA	160.0	178.00	197.00	5	259.0	11.58	2
ALPSMDJ170 / C	170.0	189.00	231.00	5	304.0	9.87	2
ALPSMDJ170A / CA	170.0	189.00	209.00	5	275.0	10.91	2
ALPSMDJ180 / C	180.0	200.16	244.80	5	322.2	9.31	2
ALPSMDJ180A / CA	180.0	200.00	220.00	5	291.6	10.29	2
ALPSMDJ190 / C	190.0	211.28	258.40	5	340.1	8.82	2
ALPSMDJ190A / CA	190.0	211.00	232.00	5	307.8	9.75	2
ALPSMDJ200A / CA	200.0	224.00	247.00	5	324.0	9.26	2
ALPSMDJ220A / CA	220.0	246.00	272.00	5	356.0	8.43	2
ALPSMDJ250A / CA	250.0	279.00	309.00	5	405.0	7.41	2
ALPSMDJ300A / CA	300.0	335.00	371.00	5	486.0	6.17	2
ALPSMDJ350A / CA	350.0	391.00	432.00	5	567.0	5.29	2
ALPSMDJ400A / CA	400.0	447.00	494.00	5	648.0	4.63	2
ALPSMDJ440A / CA	440.0	492.00	543.00	5	713.0	4.21	2

NOTE

1. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Part numbers with "CA" suffix are bidirectional devices, i.e., **ALPSMDJ440CA**
3. For bidirectional devices having a V_R of 10 Volts and under, the I_R limit is double.

TYPICAL DEVICE CHARACTERISTICS CURVES $T_A @ 25^\circ\text{C}$ Unless Otherwise Specified

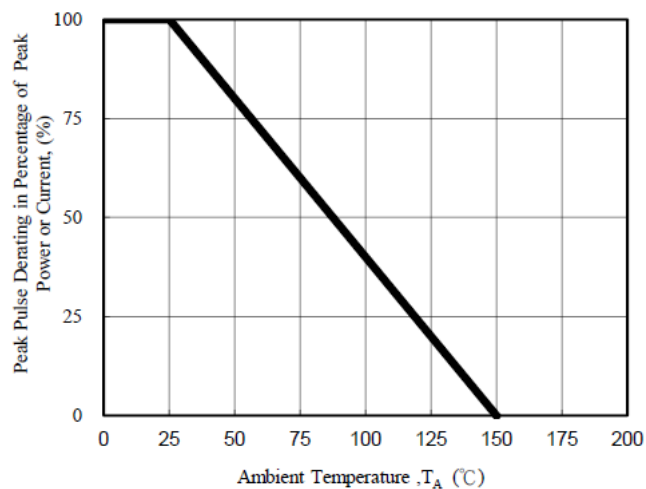


Fig1. POWER DERATING CURVE

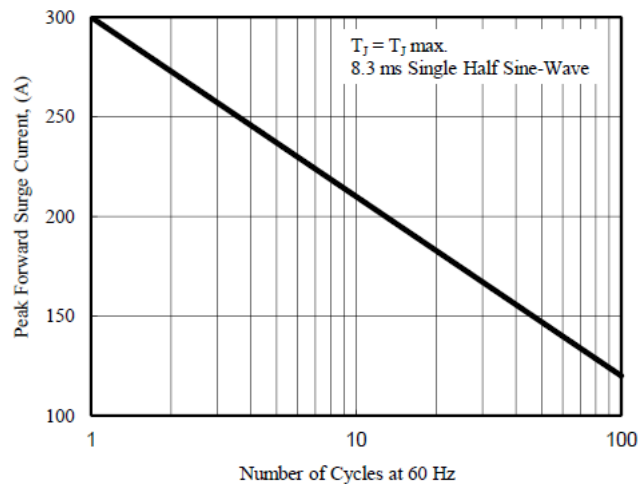


Fig2. MAXIMUM NON-REPETITIVE SURGE CURRENT

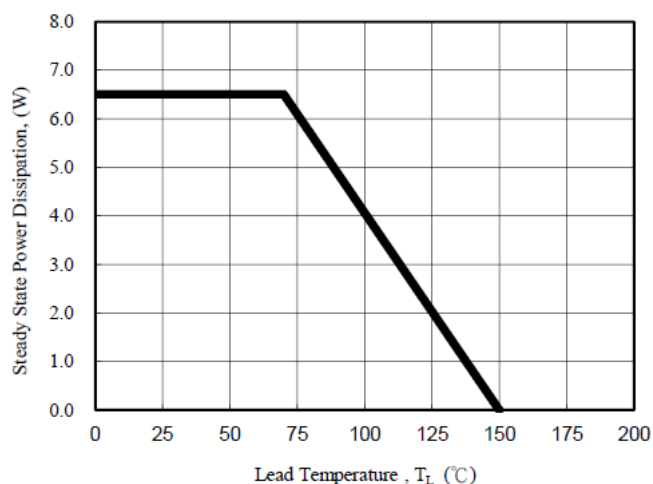


Fig3. STEADY STATE POWER DERATING CURVE

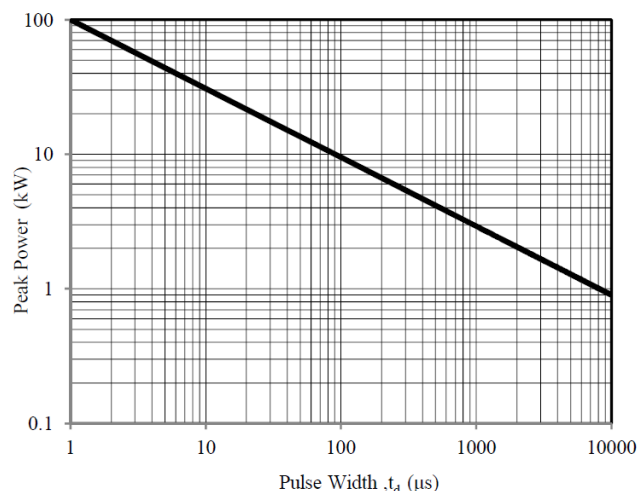


Fig4. PEAK PULSE POWER RATING CURVE

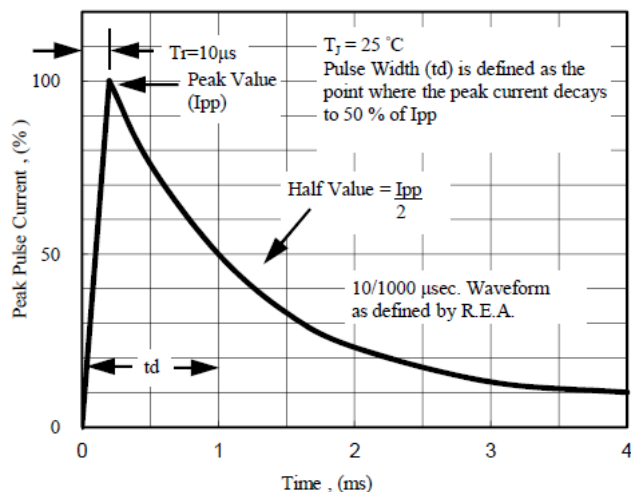


Fig5. PULSE WAVEFORM

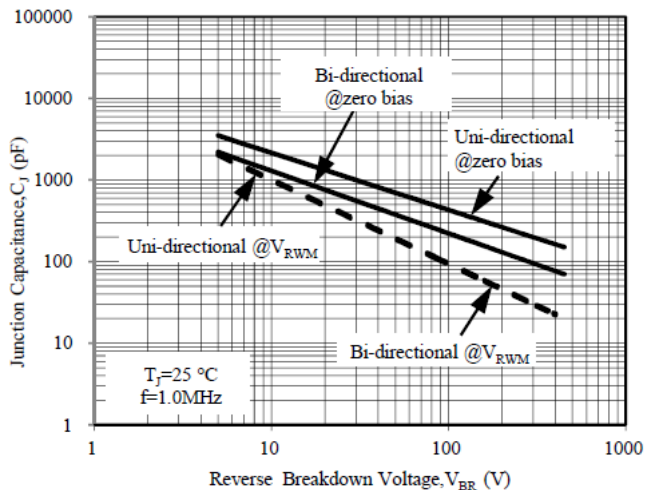
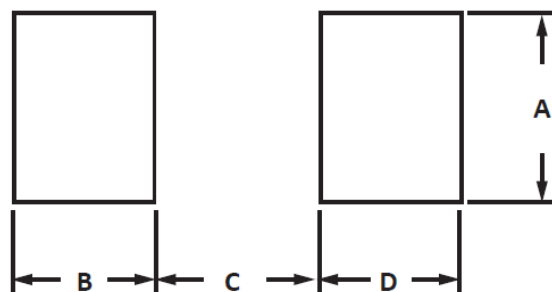
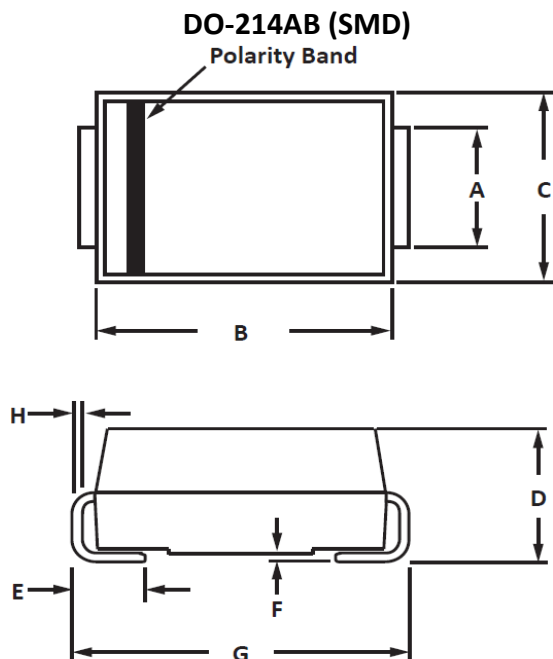


Fig6. TYPICAL JUNCTION CAPACITANCE

PACKAGE INFORMATION



OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.86	3.16	0.114	0.126
B	6.52	7.02	0.260	0.280
C	5.52	6.15	0.220	0.245
D	1.98	2.59	0.079	0.103
E	0.75	1.51	0.030	0.060
F	0.00	0.20	0.000	0.008
G	7.64	8.02	0.305	0.320
H	0.15	0.30	0.006	0.012

NOTES

1. Dimensions are exclusive of mold flash and metal burrs.

PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	3.43	-	0.135	-
B	2.03	-	0.080	-
C	-	4.32	-	0.170
D	2.03	-	0.080	-

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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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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