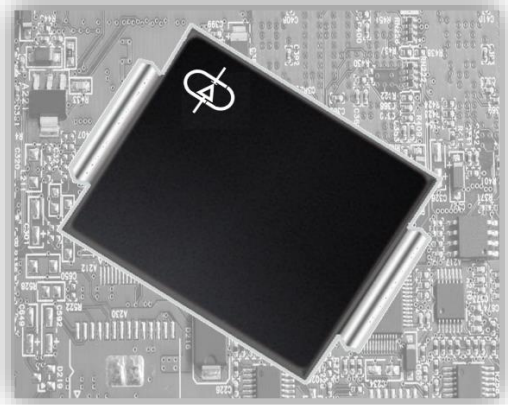


**3000 WATT TVS COMPONENT****DESCRIPTION:**

The ALPAMDODBXXA/CA (UNI/BI) are multi-line transient voltage suppressor arrays with **AEC-Q101 approved** 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 ALPAMDODBXXA/CA Series has a peak pulse power rating of 3000 Watts for an 10/1000 $\mu$ s waveshape. This device series meets the IEC 61000-4-2, IEC 61000-4-4 and IEC 61000-4-5 requirements.



Bi-directional



Uni-directional

**FEATURES:**

- **AEC-Q101 Qualified.**
- UL File Recognition #E208219
- Compatible with IEC 61000-4-2 (ESD)
- Compatible with IEC 61000-4-4 (EFT)
- Compatible with IEC 61000-4-5 (Surge)
- Glass Passivated Chip
- 3000 Watts Peak Pulse Power per Line (tp = 10/1000 $\mu$ s)
- Low Leakage Current
- Unidirectional and Bidirectional Configurations
- Excellent Clamping Capability
- Very Fast Response Time
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

**APPLICATIONS:**

- Automotive application

**TYPICAL DEVICE CHARACTERISTICS**

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	T <sub>A</sub>	-55 to 150	°C
Storage Temperature	T <sub>STG</sub>	-55 to 150	°C
Peak Pulse Power (tp =10/1000µs) - See Figure 1 and Note 2	P <sub>PP</sub>	3000	Watts
Power Dissipation on Infinite Heatsink at T <sub>L</sub> = 75°C	P <sub>D</sub>	6.0	Watts
Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2)	I <sub>FSM</sub>	300	Amps
Maximum Instantaneous Forward Voltage at 100A - Unidirectional Only	V <sub>F</sub>	3.5	V

**NOTE**  
 1. Non-repetitive current pulse per Figure 2 and derated above TA = 25°C per Figure 2.  
 2. Measured on 8.3ms single half sinewave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified							
PART NUMBER (Notes 1-2)	REVERSE STAND-OFF VOLTAGE  V <sub>RWM</sub> VOLTS	BREAKDOWN VOLTAGE  V <sub>(BR)</sub> @ I <sub>T</sub> VOLTS		TEST CURRENT  @ I <sub>T</sub> mA	MAXIMUM CLAMPING VOLTAGE (Fig. 2)  @ I <sub>p</sub> V <sub>c</sub> VOLTS	MAXIMUM REVERSE SURGE CURRENT  @ I <sub>pp</sub> AMPS	MAXIMUM REVERSE LEAKAGE CURRENT  @ V <sub>RWM</sub> I <sub>R</sub> µA
		MIN	MAX				
ALPAMDODB5.0A/CA	5.0	6.40	7.00	50	9.2	326	5000
ALPAMDODB6.0A/CA	6.0	6.67	7.37	50	10.3	291	5000
ALPAMDODB6.5A/CA	6.5	7.22	7.98	50	11.2	268	2000
ALPAMDODB7.0A/CA	7.0	7.78	8.60	50	12.0	250	1000
ALPAMDODB7.5A/CA	7.5	8.33	9.21	5	12.9	233	250
ALPAMDODB8.0A/CA	8.0	8.89	9.83	5	13.6	221	150
ALPAMDODB8.5A/CA	8.5	9.44	10.40	5	14.4	208	50
ALPAMDODB9.0A/CA	9.0	10.00	11.10	5	15.4	195	20
ALPAMDODB10A/CA	10.0	11.10	12.30	5	17.0	176	15
ALPAMDODB11A/CA	11.0	12.20	13.50	5	18.2	165	2
ALPAMDODB12A/CA	12.0	13.30	14.70	5	19.9	151	2
ALPAMDODB13A/CA	13.0	14.40	15.90	5	21.5	140	2
ALPAMDODB14A/CA	14.0	15.60	17.20	5	23.2	129	2
ALPAMDODB15A/CA	15.0	16.70	18.50	5	24.4	123	2
ALPAMDODB16A/CA	16.0	17.80	19.70	5	26.0	115	2
ALPAMDODB17A/CA	17.0	18.90	20.90	5	27.6	109	2
ALPAMDODB18A/CA	18.0	20.00	22.10	5	29.2	103	2
ALPAMDODB19A/CA	19.0	21.10	23.30	5	30.8	97.5	2
ALPAMDODB20A/CA	20.0	22.20	24.50	5	32.4	92.6	2

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified							
PART NUMBER (Notes 1-2)	REVERSE STAND-OFF VOLTAGE  $V_{RWM}$ VOLTS	BREAKDOWN VOLTAGE		TEST CURRENT  @ $I_T$ mA	MAXIMUM CLAMPING VOLTAGE (Fig. 2)  @ $I_P$ $V_C$ VOLTS	MAXIMUM REVERSE SURGE CURRENT  @ $I_{PP}$ AMPS	MAXIMUM REVERSE LEAKAGE CURRENT  @ $V_{RWM}$ $I_R$ $\mu A$
		$V_{(BR)}$ @ $I_T$ VOLTS					
		MIN	MAX				
ALPAMDODB22A/CA	22.0	24.40	26.90	5	35.5	84.5	2
ALPAMDODB24A/CA	24.0	26.70	29.50	5	38.9	77.1	2
ALPAMDODB26A/CA	26.0	28.90	31.90	5	42.1	71.3	2
ALPAMDODB28A/CA	28.0	31.10	34.40	5	45.4	66.1	2
ALPAMDODB30A/CA	30.0	33.30	36.80	5	48.4	62.0	2
ALPAMDODB33A/CA	33.0	36.70	40.60	5	53.3	56.3	2
ALPAMDODB36A/CA	36.0	40.00	44.20	5	58.1	51.6	2
ALPAMDODB40A/CA	40.0	44.40	49.10	5	64.5	46.5	2
ALPAMDODB43A/CA	43.0	47.80	52.80	5	69.4	43.2	2
ALPAMDODB45A/CA	45.0	50.0	55.30	5	72.7	41.3	2
ALPAMDODB48A/CA	48.0	53.30	58.90	5	77.4	38.8	2
ALPAMDODB51A/CA	51.0	56.70	62.70	5	82.4	36.4	2
ALPAMDODB54A/CA	54.0	60.00	66.30	5	87.1	34.4	2
ALPAMDODB58A/CA	58.0	64.40	71.20	5	93.6	32.1	2
ALPAMDODB60A/CA	60.0	66.70	73.70	5	96.8	31.0	2
ALPAMDODB64A/CA	64.0	71.10	78.60	5	103.0	29.1	2
ALPAMDODB70A/CA	70.0	77.80	86.00	5	113.0	26.6	2
ALPAMDODB75A/CA	75.0	83.30	92.10	5	121.0	24.8	2
ALPAMDODB78A/CA	78.0	86.70	95.80	5	126.0	23.8	2
ALPAMDODB80A/CA	80.0	88.80	97.60	5	129.6	23.2	2
ALPAMDODB85A/CA	85.0	94.40	104.00	5	137.0	21.9	2
ALPAMDODB90A/CA	90.0	100.00	111.00	5	146.0	20.6	2
ALPAMDODB100A/CA	100.0	111.00	123.00	5	162.0	18.5	2

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified							
PART NUMBER (Notes 1-2)	REVERSE STAND-OFF VOLTAGE  $V_{RWM}$ VOLTS	BREAKDOWN VOLTAGE  $V_{(BR)}$ @ $I_T$ VOLTS		TEST CURRENT  @ $I_T$ mA	MAXIMUM CLAMPING VOLTAGE (Fig. 2)  @ $I_P$ $V_C$ VOLTS	MAXIMUM REVERSE SURGE CURRENT  @ $I_{PP}$ AMPS	MAXIMUM REVERSE LEAKAGE CURRENT  @ $V_{RWM}$ $I_R$ $\mu A$
		MIN	MAX				
ALPAMDODB110A/CA	110.0	122.00	135.00	5	177.0	17.0	2
ALPAMDODB120A/CA	120.0	133.00	147.00	5	193.0	15.5	2
ALPAMDODB130A/CA	130.0	144.00	159.00	5	209.0	14.4	2
ALPAMDODB140A/CA	140.0	155.00	171.00	5	226.8	13.2	2
ALPAMDODB150A/CA	150.0	167.00	185.00	5	243.0	12.4	2
ALPAMDODB160A/CA	160.0	178.00	197.00	5	259.0	11.6	2
ALPAMDODB170A/CA	170.0	189.00	209.00	5	275.0	10.9	2
ALPAMDODB180A/CA	180.0	200.00	220.00	5	291.6	10.3	2
ALPAMDODB190A/CA	190.0	211.00	232.00	5	307.8	9.8	2
ALPAMDODB200A/CA	200.0	224.00	247.00	5	324.0	9.3	2
ALPAMDODB220A/CA	220.0	246.00	272.00	5	356.0	8.4	2
ALPAMDODB250A/CA	250.0	279.00	309.00	5	405.0	7.4	2
ALPAMDODB300A/CA	300.0	335.00	371.00	5	486.0	6.2	2
ALPAMDODB350A/CA	350.0	391.00	432.00	5	567.0	5.3	2
ALPAMDODB400A/CA	400.0	447.00	494.00	5	648.0	4.6	2
ALPAMDODB440A/CA	440.0	492.00	543.00	5	713.0	4.2	2

**NOTE**  
1. Part numbers with "CA" suffix are bidirectional devices, i.e., **ALPAMDODB440A**.  
2. For bidirectional devices having a  $V_{RWM}$  of 10 Volts and under, the  $I_R$  limit is double.

TYPICAL DEVICE CHARACTERISTICS CURVES

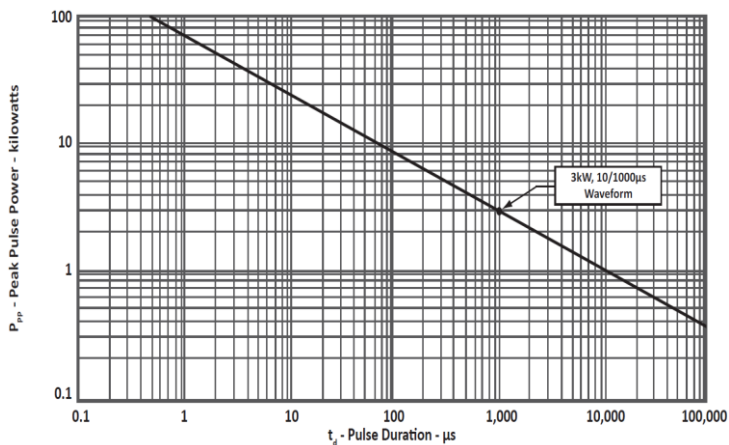


Fig1. PEAK PULSE POWER VS PULSE TIME

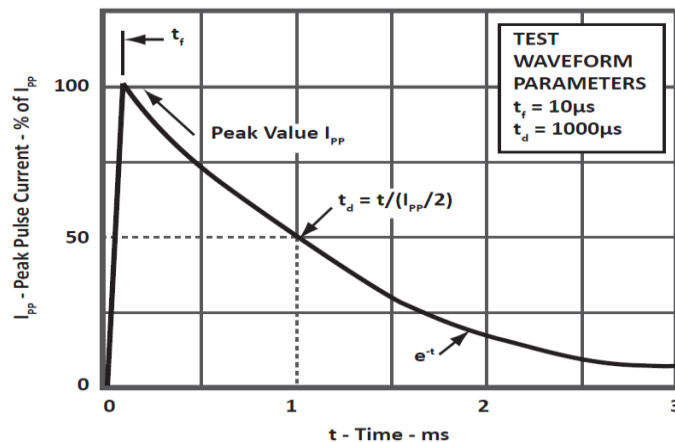


Fig2. PULSE WAVEFORM

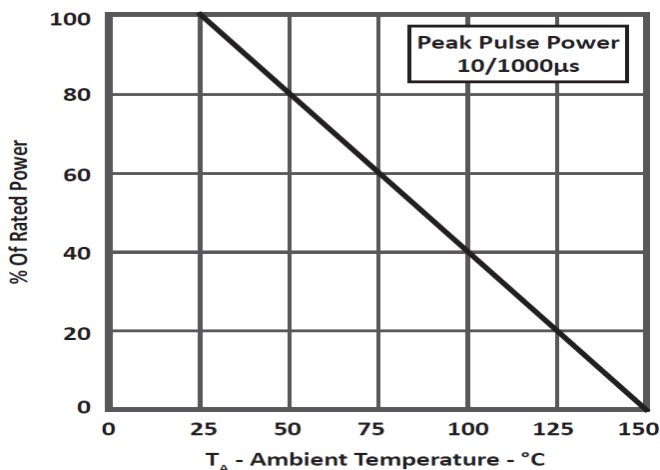


Fig3. POWER DERATING CURVE

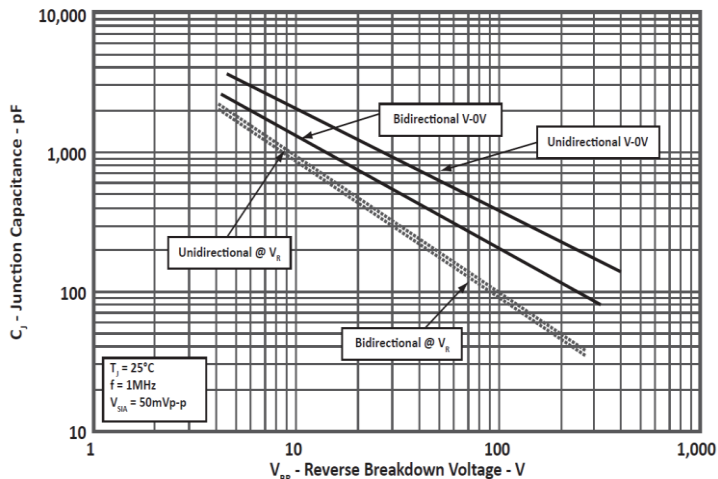


Fig4. TYPICAL JUNCTION CAPACITANCE

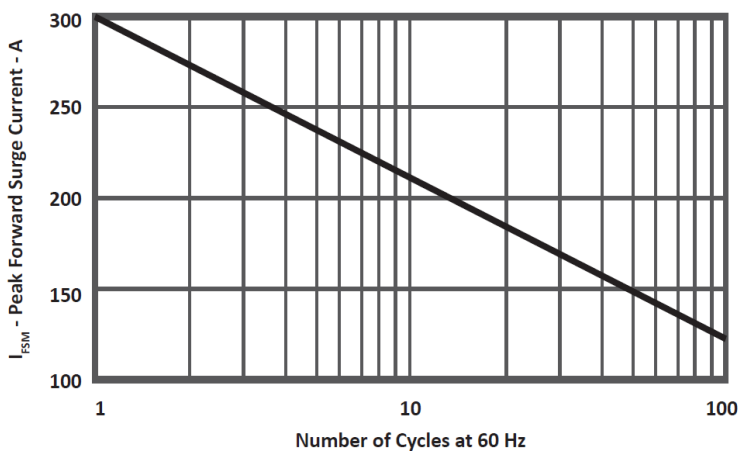


Fig5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

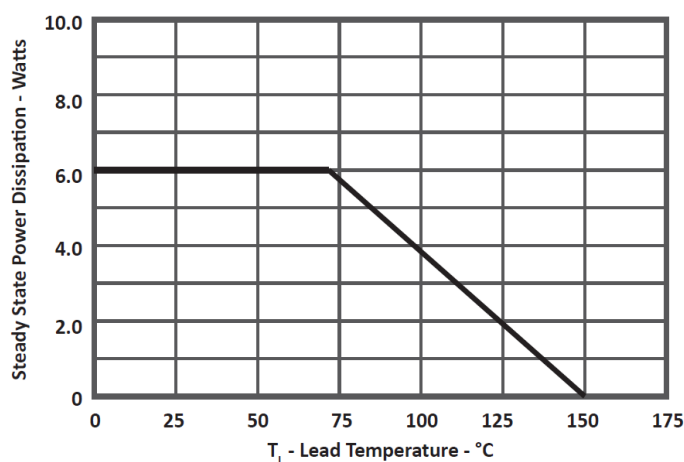
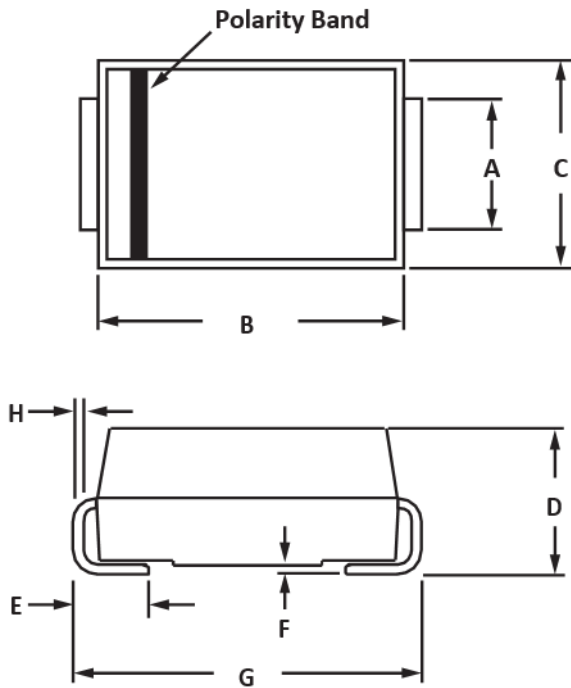


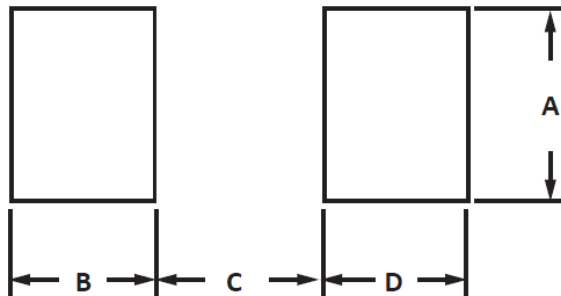
Fig6 STEADY STATE POWER DERATING CURVE

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	-



*beyond boundaries...*

ALPAMDODBXXA/CA

DO-214AB

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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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