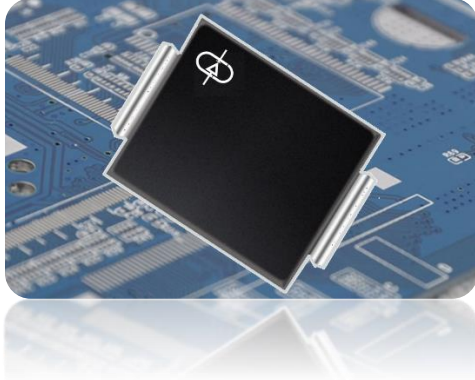
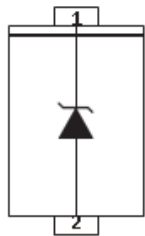
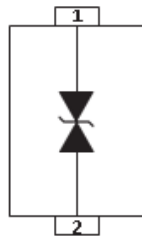


**600 WATT TVS COMPONENT****DESCRIPTION:**

The ALPAMDOBAXXA/CA (UNI/BI) Series 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 ALPAMDOBAXXA/CA Series has a peak pulse power rating of 600 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.

**UNI-DIRECTION****BI-DIRECTION****FEATURES:**

- **AEC-Q101 approved.**
- RTCA DO-160G COMPLIANT PRODUCT
- UL File Recognition #E208219
- Compatible with IEC 61000-4-2 (ESD): Level 4 - Air 15kV, Contact 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 8/20 $\mu$ s Waveform
- Glass Passivated Chip
- 600 Watts Peak Pulse Power per Line (tp = 10/1000 $\mu$ s)
- Low Leakage Current
- Bidirectional and Unidirectional Configurations
- Excellent Clamping Capability
- Very Fast Response Time
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

**APPLICATIONS:**

- Automotive application



beyond boundaries...

# ALPAMDOBAXXA/CA Series

DO-214AA(SMB)

## TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	$T_J$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Peak Pulse Power (tp =10/1000µs) - See Figure 1 and Note 1	$P_{PP}$	600	Watts
Power Dissipation on Infinite Heatsink at $T_L = 75^\circ\text{C}$	$P_D$	5.0	Watts
Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2)	$I_{FSM}$	100	Amps
Maximum Instantaneous Forward Voltage at 50A - Unidirectional Only (Note 3)	$V_F$	3.5/5.0	V

**NOTE**

1. Non-repetitive current pulse per Figure 2 and derated above  $T_A = 25^\circ\text{C}$  per Figure 3.
2. Measured on 8.3ms single half sinewave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
3.  $V_F < 3.5\text{V}$

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  @ $V_{RWM}$ $I_R$ µA
		$V_{(BR)}$ @ $I_T$ VOLTS					
		MIN	MAX				
ALPAMDOBA5.0A / CA	5.0	6.40	7.00	10	9.2	65.2	800
ALPAMDOBA6.0A / CA	6.0	6.67	7.37	10	10.3	58.3	800
ALPAMDOBA6.5A / CA	6.5	7.22	7.98	10	11.2	53.6	500
ALPAMDOBA7.0A / CA	7.0	7.78	8.60	10	12.0	50.0	200
ALPAMDOBA7.5A / CA	7.5	8.33	9.21	1	12.9	46.5	100
ALPAMDOBA8.0A / CA	8.0	8.89	9.83	1	13.6	44.1	50
ALPAMDOBA8.5A / CA	8.5	9.44	10.40	1	14.4	41.7	10
ALPAMDOBA9.0A / CA	9.0	10.00	11.10	1	15.4	39.0	5
ALPAMDOBA10A / CA	10.0	11.10	12.30	1	17.0	35.3	5
ALPAMDOBA11A / CA	11.0	12.20	13.50	1	18.2	33.0	1
ALPAMDOBA12A / CA	12.0	13.30	14.70	1	19.9	30.2	1
ALPAMDOBA13A / CA	13.0	14.40	15.90	1	21.5	27.9	1
ALPAMDOBA14A / CA	14.0	15.60	17.20	1	23.2	25.9	1
ALPAMDOBA15A / CA	15.0	16.70	18.50	1	24.4	24.6	1
ALPAMDOBA16A / CA	16.0	17.80	19.70	1	26.0	23.1	1
ALPAMDOBA17A / CA	17.0	18.90	20.90	1	27.6	21.7	1
ALPAMDOBA18A / CA	18.0	20.00	22.10	1	29.2	20.6	1
ALPAMDOBA19A / CA	19.0	21.10	23.30	1	30.8	19.5	1



beyond boundaries...

# ALPAMDOBAXXA/CA Series

DO-214AA(SMB)

## 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				
ALPAMDOBA20A / CA	20.0	22.20	24.50	1	32.4	18.5	1
ALPAMDOBA22A / CA	22.0	24.40	26.90	1	35.5	16.9	1
ALPAMDOBA24A / CA	24.0	26.70	29.50	1	38.9	15.4	1
ALPAMDOBA26A / CA	26.0	28.90	31.90	1	42.1	14.3	1
ALPAMDOBA28A / CA	28.0	31.10	34.40	1	45.4	13.2	1
ALPAMDOBA30A / CA	30.0	33.30	36.80	1	48.4	12.4	1
ALPAMDOBA33A / CA	33.0	36.70	40.60	1	53.3	11.3	1
ALPAMDOBA36A / CA	36.0	40.00	44.20	1	58.17	10.3	1
ALPAMDOBA40A / CA	40.0	44.40	49.10	1	64.5	9.3	1
ALPAMDOBA43A / CA	43.0	47.80	52.80	1	69.4	8.7	1
ALPAMDOBA45A / CA	45.0	50.0	55.30	1	72.7	8.3	1
ALPAMDOBA48A / CA	48.0	53.30	58.90	1	77.4	7.8	1
ALPAMDOBA51A / CA	51.0	56.70	62.70	1	82.4	7.3	1
ALPAMDOBA54A / CA	54.0	60.00	66.30	1	87.1	6.9	1
ALPAMDOBA58A / CA	58.0	64.40	71.20	1	93.6	6.4	1
ALPAMDOBA60A / CA	60.0	66.70	73.70	1	96.8	6.2	1
ALPAMDOBA64A / CA	64.0	71.10	78.60	1	103.0	5.8	1
ALPAMDOBA70A / CA	70.0	77.80	86.00	1	113.0	5.3	1
ALPAMDOBA75A / CA	75.0	83.30	92.10	1	121.0	5.0	1
ALPAMDOBA78A / CA	78.0	86.70	95.80	1	126.0	4.8	1
ALPAMDOBA80A / CA	80.0	88.80	97.60	1	129.6	4.6	1
ALPAMDOBA85A / CA	85.0	94.40	104.00	1	137.0	4.4	1
ALPAMDOBA90A / CA	90.0	100.00	111.00	1	146.0	4.1	1
ALPAMDOBA100A / CA	100.0	111.00	123.00	1	162.0	3.7	1
ALPAMDOBA110A / CA	110.0	122.00	135.00	1	177.0	3.4	1
ALPAMDOBA120A / CA	120.0	133.00	147.00	1	193.0	3.1	1
ALPAMDOBA130A / CA	130.0	144.00	159.00	1	209.0	2.9	1



beyond boundaries...

## ALPAMDOBAXXA/CA Series

DO-214AA(SMB)

### 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  @ $I_{DD}$ AMPS	MAXIMUM REVERSE LEAKAGE CURRENT  @ $V_{RWM}$ $I_R$ $\mu A$
		MIN	MAX				
ALPAMDOBA140A / CA	140.0	155.00	171.00	1	226.8	2.7	1
ALPAMDOBA150A / CA	150.0	167.00	185.00	1	243.0	2.5	1
ALPAMDOBA154A / CA	154.0	171.00	189.00	1	246.0	2.4	0.2
ALPAMDOBA160A / CA	160.0	178.00	197.00	1	259.0	2.3	1
ALPAMDOBA170A / CA	170.0	189.00	209.00	1	275.0	2.2	1
ALPAMDOBA180A / CA	180.0	200.00	220.00	1	291.6	2.1	1
ALPAMDOBA190A / CA	190.0	211.00	232.00	1	307.8	2.0	1
ALPAMDOBA200A / CA	200.0	224.00	247.00	1	324.0	1.9	1
ALPAMDOBA220A / CA	220.0	246.00	272.00	1	356.0	1.7	1
ALPAMDOBA250A / CA	250.0	279.00	309.00	1	405.0	1.5	1
ALPAMDOBA300A / CA	300.0	335.00	371.00	1	486.0	1.2	1
ALPAMDOBA350A / CA	350.0	391.00	432.00	1	567.0	1.1	1
ALPAMDOBA400A / CA	400.0	447.00	494.00	1	648.0	0.9	1
ALPAMDOBA440A / CA	440.0	492.00	543.00	1	713.0	0.8	1
ALPAMDOBA480A / CA	480.0	537.0	593.0	1	779.0	0.77	1

#### NOTE

1. Part numbers with "CA" suffix are bidirectional devices, i.e., ALPAMDOBA480CA.
2. For bidirectional devices having a  $V_{RWM}$  of 10 Volts and under, the  $I_R$  limit is double.

TYPICAL DEVICE CHARACTERISTICS CURVES

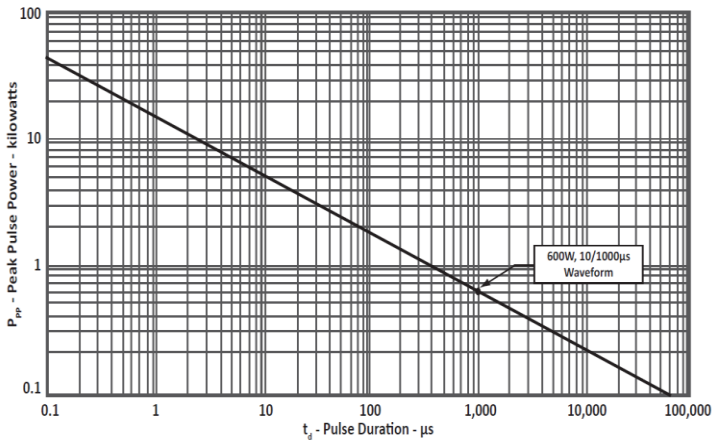


Fig1. PEAK PULSE POWER VS PULSE TIME

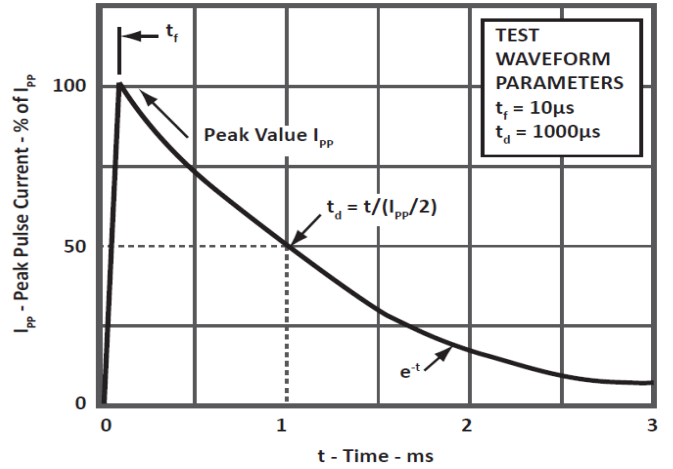


Fig2. PULSE WAVEFORM

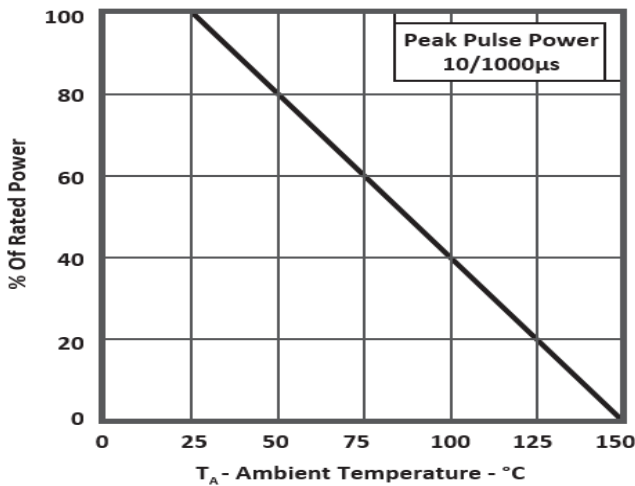


Fig3. POWER DERATING CURVE

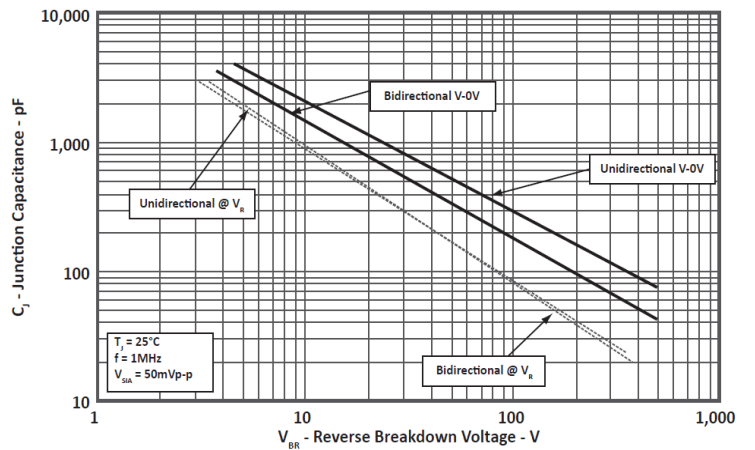


Fig4. TYPICAL JUNCTION CAPACITANCE

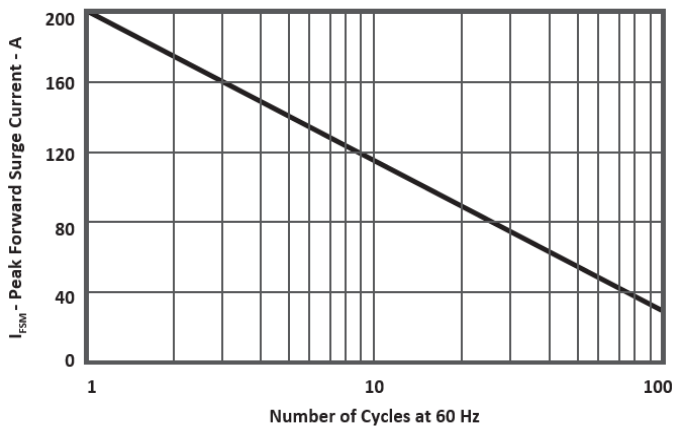


Fig5. MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

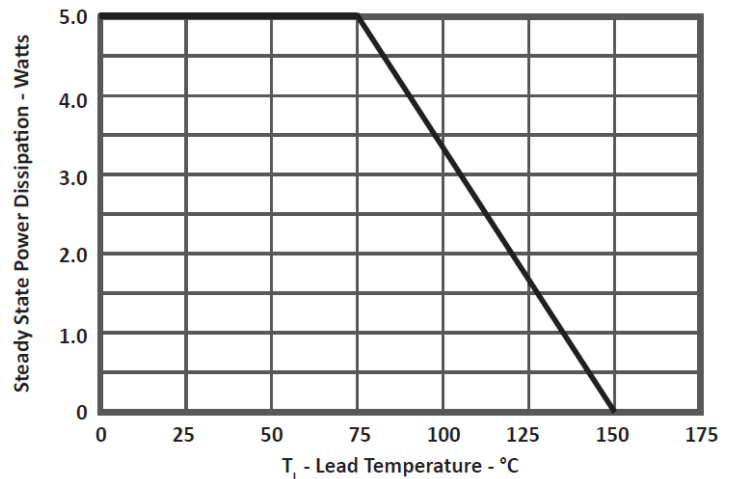
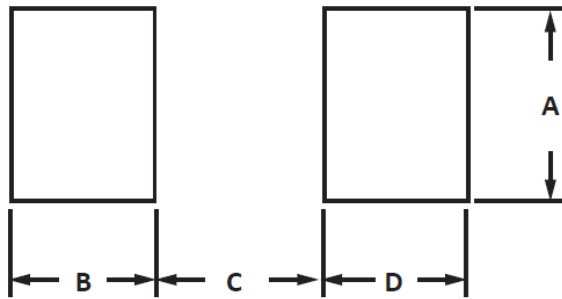
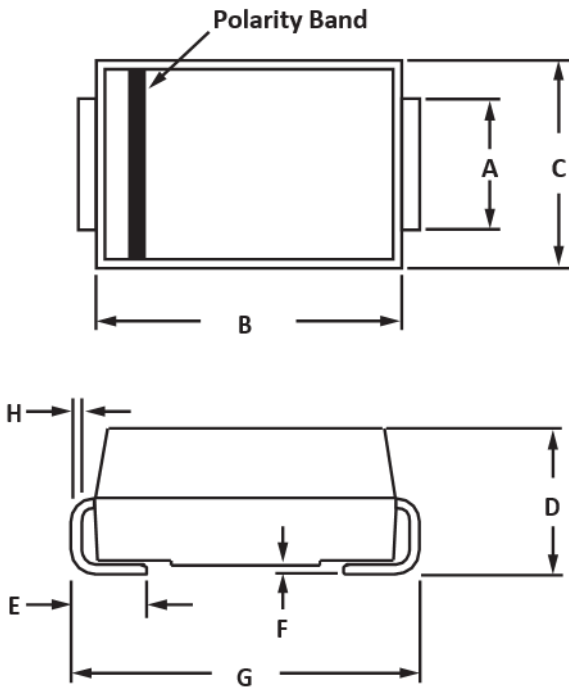


Fig6. STEADY STATE POWER DERATING CURVE

PACKAGE INFORMATION



OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.96	2.20	0.077	0.087
B	4.35	4.85	0.171	0.191
C	3.30	3.94	0.130	0.155
D	2.13	2.44	0.084	0.096
E	0.75	1.52	0.030	0.060
F	0.02	0.20	0.001	0.008
G	5.10	5.50	0.201	0.216
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	2.03	-	0.080	-
B	1.91	-	0.075	-
C	-	2.54	-	1.00
D	1.91	-	0.075	-



*beyond boundaries...*

**ALPAMDOBAXXA/CA 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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