400 WATT TVS COMPONENT

RTCA DO-160G COMPLIANT PRODUCT

SOD-123FL PACKAGE

DESCRIPTION

The PAM39SDxxAL/CAL Series is a transient voltage suppressor array, designed to protect applications such as consumer electronic products, automotive, telecommunications, aerospace and intelligent control systems. This series is available in both unidirectional and bidirectional configurations. This series is rated for 400 Watts peak pulse power (10/1000µs) and is offered in a space saving SOD-123FL package. The PAM39SDxxAL/CAL series meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements.

FEATURES

- ***AEC-Q101 Qualified***
- UL Registered
- Compatible with IEC 61000-4-2 (ESD): Air ±15kV, Contact ±8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 8/20µs Waveform
- 400 Watts Peak Pulse Power per Line (tp = 10/1000µs)
- Low Inductance
- Excellent Clamping Capability
- Unidirectional and Bidirectional Configurations
- Low Leakage Current: < 1µA (Typical)
- Fast Response Time
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

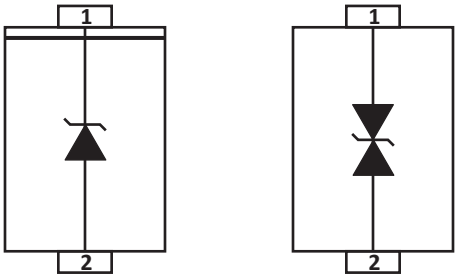
APPLICATIONS

- Automotive

MECHANICAL CHARACTERISTICS

- Molded SOD-123FL Package
- Approximate Weight: 0.0136 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
  Pure-Tin - Sn, 100: 260-270°C
- 12mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATIONS



TYPICAL DEVICE CHARACTERISTICS

RTCA DO-160G COMPLIANT PRODUCT

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	P_{PP}	400	Watts
Maximum Instantaneous Forward Voltage at 20A	V_F	5.0	V
Typical Thermal Resistance Junction to Lead	RJL	100	°C/W
Typical Thermal Resistance Junction to Ambient	RJA	220	°C/W

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (See Notes 1-2)	DEVICE MARKING		REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM REVERSE SURGE CURRENT	MAXIMUM REVERSE LEAKAGE CURRENT
	UNI	BI	V_{RWM} VOLTS	MIN	MAX	@ I_T mA	@ I_P V_C VOLTS	@I_{PP} AMPS	@V_{RWM} I_R µA
PAM39SD10AL	AXH	10CLH	10.0	11.10	12.30	1	17.0	23.5	2
PAM39SD11AL	AZH	11CLH	11.0	12.20	13.50	1	18.2	22.0	1
PAM39SD12AL	BEH	12CLH	12.0	13.30	14.70	1	19.9	20.1	1
PAM39SD13AL	BGH	13CLH	13.0	14.40	15.90	1	21.5	18.6	1
PAM39SD14AL	BKH	14CLH	14.0	15.60	17.20	1	23.2	17.2	1
PAM39SD15AL	BMH	15CLH	15.0	16.70	18.50	1	24.4	16.4	1
PAM39SD16AL	BPH	16CLH	16.0	17.80	19.70	1	26.0	15.4	1
PAM39SD17AL	BRH	17CLH	17.0	18.90	20.90	1	27.6	14.5	1
PAM39SD18AL	BTH	18CLH	18.0	20.00	22.10	1	29.2	13.7	1
PAM39SD20AL	BVH	20CLH	20.0	22.20	24.50	1	32.4	12.3	1
PAM39SD22AL	BXH	22CLH	22.0	24.40	26.90	1	35.5	11.3	1
PAM39SD24AL	BZH	24CLH	24.0	26.70	29.50	1	38.9	10.3	1
PAM39SD26AL	CEH	26CLH	26.0	28.90	31.90	1	42.1	9.5	1
PAM39SD28AL	CGH	28CLH	28.0	31.10	34.40	1	45.4	8.8	1
PAM39SD30AL	CKH	30CLH	30.0	33.30	36.80	1	48.4	8.3	1
PAM39SD33AL	CMH	33CLH	33.0	36.70	40.60	1	53.3	7.5	1
PAM39SD36AL	CPH	36CLH	36.0	40.00	44.20	1	58.1	6.9	1
PAM39SD40AL	CRH	40CLH	40.0	44.40	49.10	1	64.5	6.2	1
PAM39SD43AL	CTH	43CLH	43.0	47.80	52.80	1	69.4	5.8	1
PAM39SD45AL	CVH	45CLH	45.0	50.00	55.30	1	72.7	5.5	1
PAM39SD48AL	CXH	48CLH	48.0	53.30	58.90	1	77.4	5.2	1
PAM39SD51AL	CZH	-	51.0	56.70	62.70	1	82.4	4.9	1
PAM39SD58AL	DEH	-	58.0	64.40	71.20	1	93.6	4.3	1
PAM39SD60AL	DGH	-	60.0	66.70	73.70	1	96.8	4.1	1

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (See Notes 1-2)	DEVICE MARKING		REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS		TEST CURRENT	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM REVERSE SURGE CURRENT	MAXIMUM REVERSE LEAKAGE CURRENT
	UNI	BI	V_{RWM} VOLTS	MIN	MAX	@ I_T mA	@ I_P V_C VOLTS	@I_{PP} AMPS	@V_{RWM} I_R µA
PAM39SD64AL	DMH	-	64.0	71.10	78.60	1	103.0	3.9	1
PAM39SD70AL	DPH	-	70.0	77.80	86.00	1	113.0	3.5	1
PAM39SD75AL	DRH	-	75.0	83.30	92.10	1	121.0	3.3	1
PAM39SD78AL	DTH	-	78.0	86.70	95.80	1	126.0	3.2	1
PAM39SD85AL	DVH	-	85.0	94.40	104.00	1	137.0	2.9	1

NOTE
1. Add a 'CAL' specify a bidrectional device; i.e., "**PAM39SD17CAL**".
2. If marking code is not specified, device is not available in that configuration.

TYPICAL DEVICE CHARACTERISTICS

RTCA DO-160G COMPLIANT PRODUCT

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

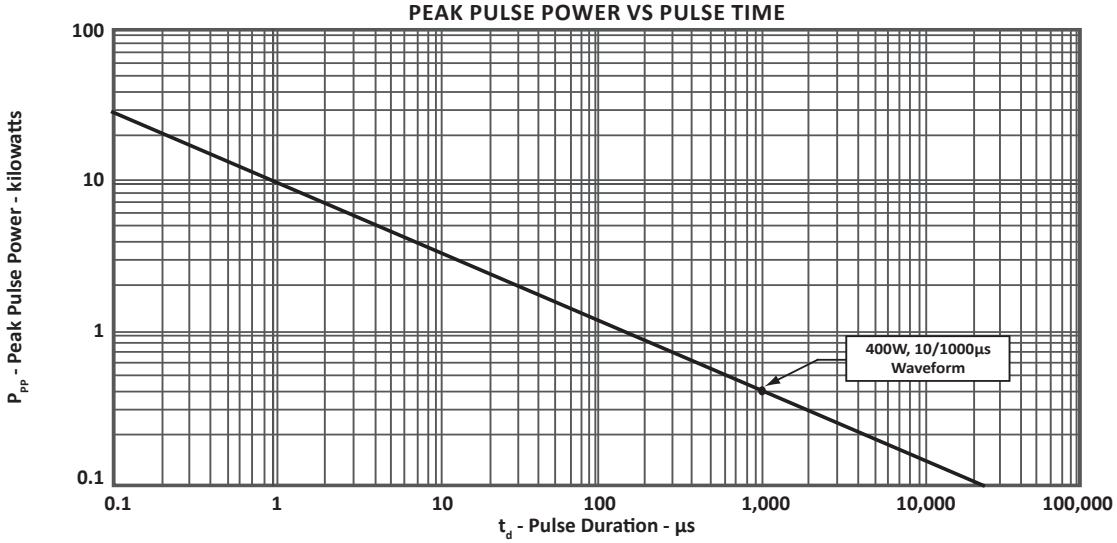


FIGURE 2
PULSE WAVEFORM

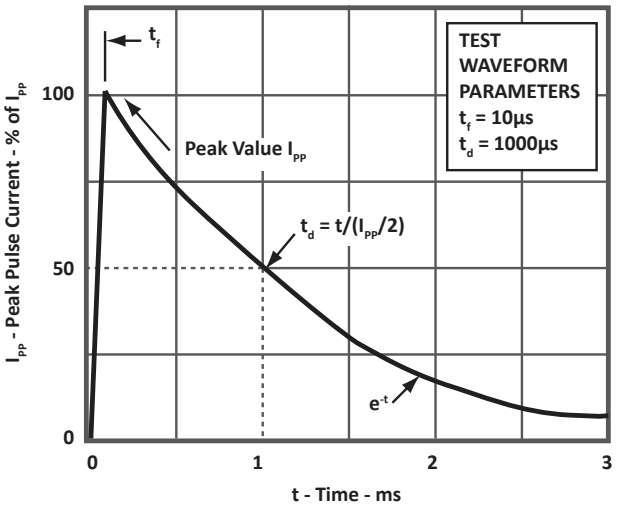
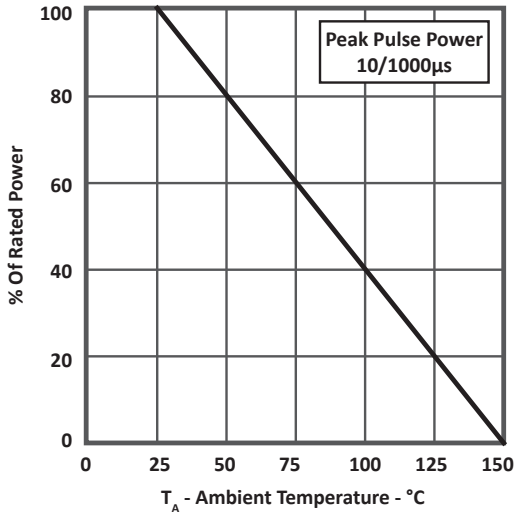


FIGURE 3
POWER DERATING CURVE

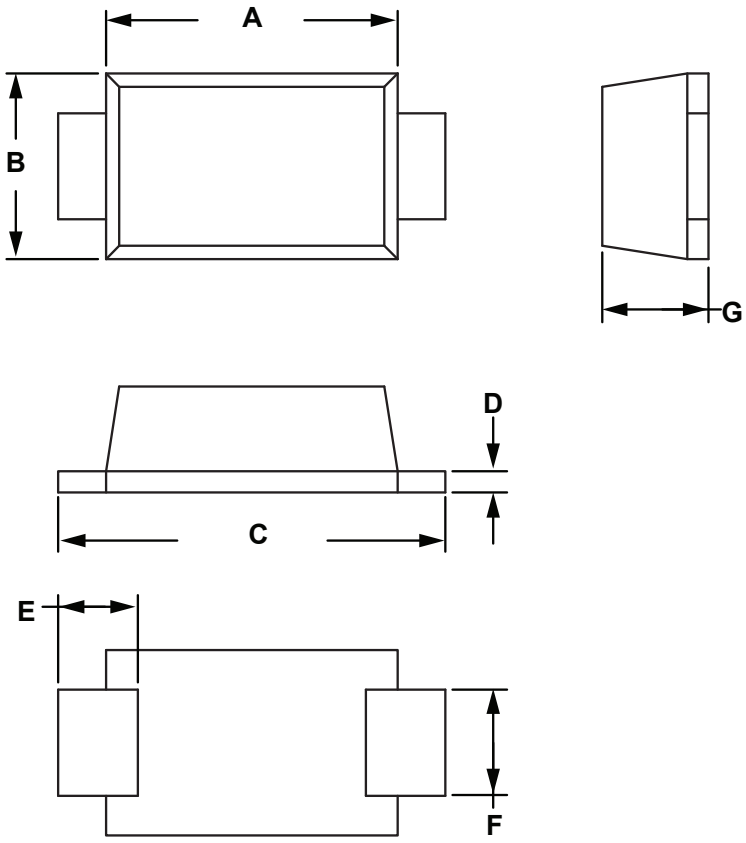


PACKAGE INFORMATION

RTCA DO-160G COMPLIANT PRODUCT

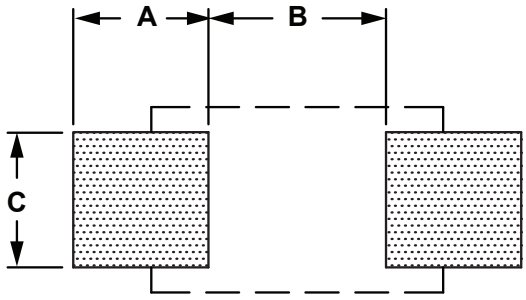
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.60	3.00	0.102	0.118
B	1.60	2.00	0.063	0.079
C	3.45	3.95	0.136	0.156
D	0.10	0.25	0.004	0.010
E	0.30	0.90	0.012	0.035
F	0.80	1.20	0.031	0.047
G	0.7	1.0	0.028	0.039

NOTES
1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: millimeters.
3. Dimensions are exclusive of mold flash and metal burrs.



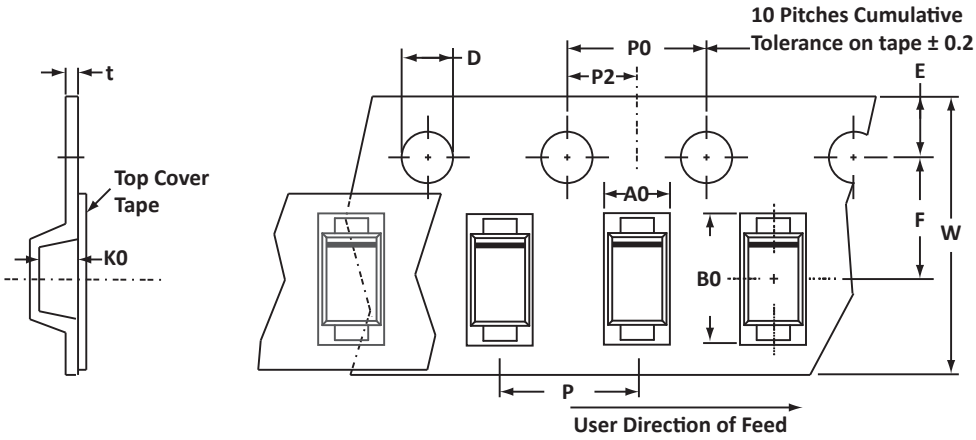
PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.30		0.051	
B		1.70		0.067
C	1.30		0.051	

NOTES
1. Controlling dimension: millimeters



TAPE AND REEL

RTCA DO-160G COMPLIANT PRODUCT



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.95 ± 0.3	3.95 ± 0.3	1.40 ± 0.05	1.55 ± 0.10	1.75 ± 0.20	3.50 ± 0.5	8.00 ± 0.20	4.00 ± 0.20	2.00 ± 0.2	4.00 ± 0.20	0.25

NOTES
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Empty pocket between sprocket holes.
4. Marking on Part - marking code (see page 2), polarity band and date code.

ORDERING INFORMATION					
BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PAM39SDxxAL/CAL	n/a	-T73	3,000	7"	n/a
This device is only available in a Lead-Free configuration.					

COMPANY INFORMATION

RTCA DO-160G COMPLIANT PRODUCT

COMPANY PROFILE

In business more than 30 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection that include Transient Voltage Suppressor (TVS) Arrays, Steering Diode Array Hybrids, High-power Components and Modules, as well as Steering Diodes, EMI Filter/TVS Arrays and Thyristor Surge Suppressors. These components deliver circuit protection in electronic systems from numerous overvoltage events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices is an ISO 9001 certified company.

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