400 WATT TVS COMPONENT

RTCA DO-160G COMPLIANT PRODUCT



SOD-123FL PACKAGE

DESCRIPTION

The PAM37SDxxAL 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 a unidirectional configuration. This series is rated for 400 Watts peak pulse power (10/1000µs) and is offered in a space saving SOD-123FL package. The PAM37SDxxAL series meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements.

FEATURES

- AEC-Q101 Qualification Pending
- 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 Configuration
- Low Leakage Current: < 1µA (Typical)
- Fast Response Time
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

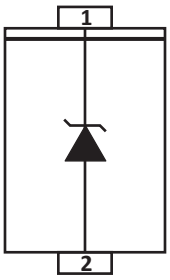
APPLICATIONS

- 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 CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS

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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
Steady State Power Dissipation at T_L = 75°C	$P_{M(AV)}$	2.8	W
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	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
		V_{RWM} VOLTS	MIN	MAX	@ I_T mA	@ I_P V_C VOLTS	@I_{PP} AMPS	@V_{RWM} I_R µA
PAM37SD5.0AL	AE	5.0	6.40	7.00	10	9.2	40.1	40
PAM37SD6.0AL	AG	6.0	6.67	7.37	10	10.3	35.9	40
PAM37SD6.5AL	AK	6.5	7.22	7.98	10	11.2	33.1	30
PAM37SD7.0AL	AM	7.0	7.78	8.60	10	12.0	30.9	30
PAM37SD7.5AL	AP	7.5	8.33	9.21	1	12.9	28.7	30
PAM37SD8.0AL	AR	8.0	8.89	9.83	1	13.6	27.2	20
PAM37SD9.0AL	AV	9.0	10.00	11.10	1	15.4	24.1	5
PAM37SD10AL	AX	10.0	11.10	12.30	1	17.0	23.5	2
PAM37SD11AL	AZ	11.0	12.20	13.50	1	18.2	22.0	1
PAM37SD12AL	BE	12.0	13.30	14.70	1	19.9	20.1	1
PAM37SD13AL	BG	13.0	14.40	15.90	1	21.5	18.6	1
PAM37SD14AL	BK	14.0	15.60	17.20	1	23.2	17.2	1
PAM37SD15AL	BM	15.0	16.70	18.50	1	24.4	16.4	1
PAM37SD17AL	BR	17.0	18.90	20.90	1	27.6	14.5	1
PAM37SD18AL	BT	18.0	20.00	22.10	1	29.2	13.7	1
PAM37SD20AL	BV	20.0	22.20	24.50	1	32.4	12.3	1
PAM37SD22AL	BX	22.0	24.40	26.90	1	35.5	11.3	1
PAM37SD24AL	BZ	24.0	26.70	29.50	1	38.9	10.3	1
PAM37SD26AL	CE	26.0	28.90	31.90	1	42.1	9.5	1
PAM37SD28AL	CG	28.0	31.10	34.40	1	45.4	8.8	1
PAM37SD30AL	CK	30.0	33.30	36.80	1	48.4	8.3	1
PAM37SD33AL	CM	33.0	36.70	40.60	1	53.3	7.5	1
PAM37SD36AL	CP	36.0	40.00	44.20	1	58.1	6.9	1

TYPICAL DEVICE CHARACTERISTICS

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ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	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
		V_{RWM} VOLTS	MIN	MAX	@ I_T mA	@ I_P V_C VOLTS	@I_{PP} AMPS	@V_{RWM} I_R µA
PAM37SD40AL	CR	40.0	44.40	49.10	1	64.5	6.2	1
PAM37SD43AL	CT	43.0	47.80	52.80	1	69.4	5.8	1
PAM37SD45AL	CV	45.0	50.00	55.30	1	72.7	5.5	1
PAM37SD48AL	CX	48.0	53.30	58.90	1	77.4	5.2	1
PAM37SD51AL	CZ	51.0	56.70	62.70	1	82.4	4.9	1
PAM37SD58AL	DE	58.0	64.40	71.20	1	93.6	4.3	1
PAM37SD60AL	DG	60.0	66.70	73.70	1	96.8	4.1	1
PAM37SD64AL	DM	64.0	71.10	78.60	1	103.0	3.9	1
PAM37SD70AL	DP	70.0	77.80	86.00	1	113.0	3.5	1
PAM37SD75AL	DR	75.0	83.30	92.10	1	121.0	3.3	1
PAM37SD78AL	DT	78.0	86.70	95.80	1	126.0	3.2	1
PAM37SD85AL	DV	85.0	94.40	104.00	1	137.0	2.9	1

TYPICAL DEVICE CHARACTERISTICS

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FIGURE 1
PEAK PULSE POWER VS PULSE TIME

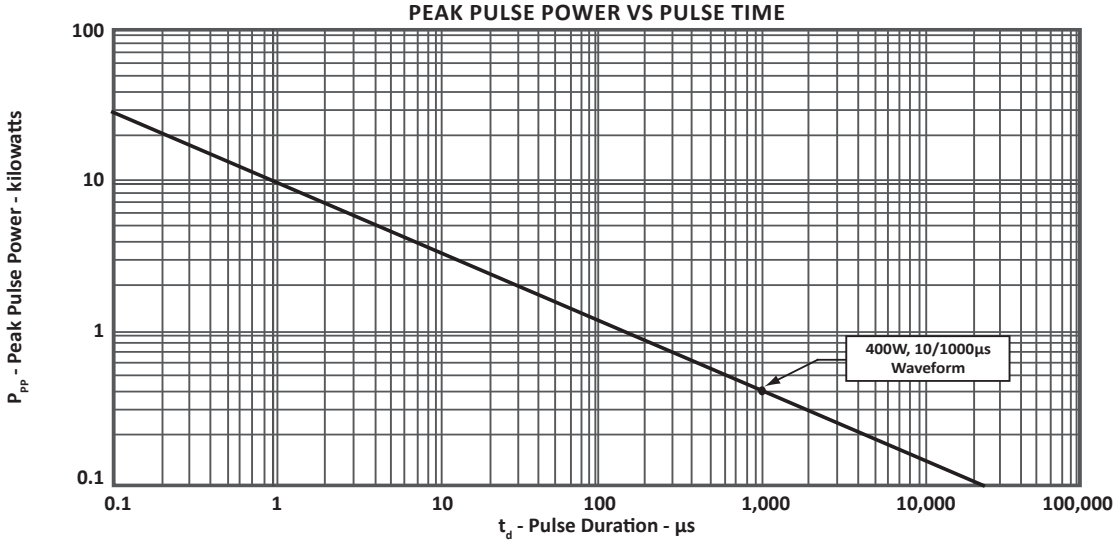


FIGURE 2
PULSE WAVEFORM

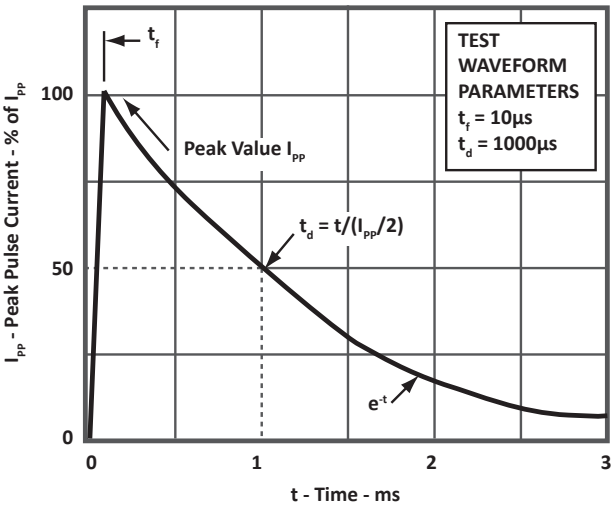
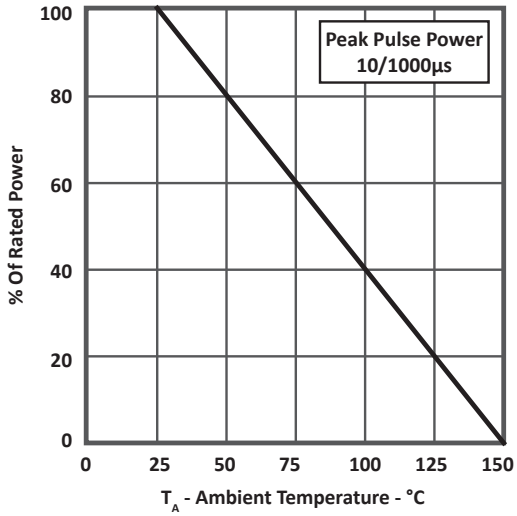


FIGURE 3
POWER DERATING CURVE

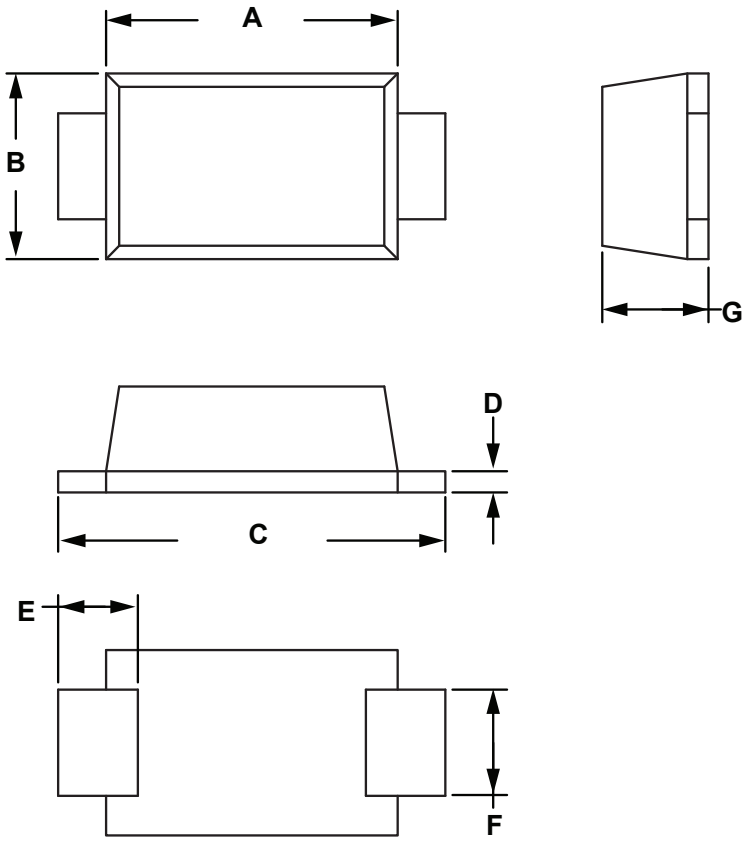


PACKAGE INFORMATION

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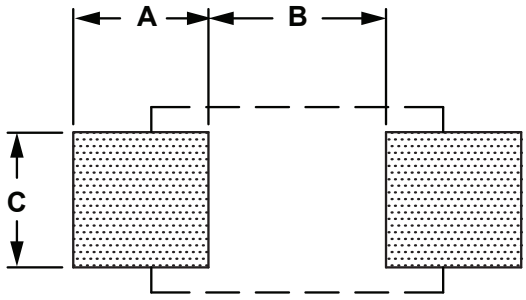
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.60	3.00	0.102	0.118
B	1.60	2.00	0.063	0.079
C	3.45	3.95	0.136	0.156
D	0.10	0.25	0.004	0.010
E	0.30	0.90	0.012	0.035
F	0.80	1.20	0.031	0.047
G	0.95	1.35	0.037	0.053

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



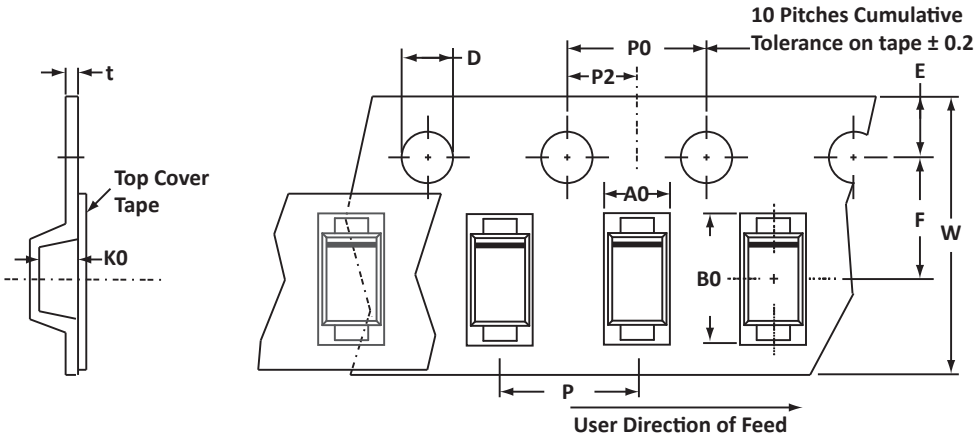
PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.30		0.051	
B		1.70		0.067
C	1.30		0.051	

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. Suffix - T73 = 7" Reel - 3,000 pieces per 8mm tape.
5. 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
PAM37SDxxAL-NQ	n/a	-T73	3,000	7"	n/a

This device is only available in a Lead-Free configuration.
Suffix -NQ = This is currently a commercial grade device and is waiting for AEC-Q101 qualification. Please contact customer service for more information.

COMPANY INFORMATION

RTCA DO-160G COMPLIANT PRODUCT

COMPANY PROFILE

In business more than 25 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers LED wafer die for ESD protection and related high frequency products. ProTek Devices is ISO 9001:2015 certified.

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