



## DESCRIPTION

The PSMFxxBL/CBL 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 200 Watts peak pulse power (10/1000 $\mu$ s) and is offered in a space saving SOD-123FL package. The PSMFxxBL series meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements.

## FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air  $\pm 15$ kV, Contact  $\pm 8$ kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 8/20 $\mu$ s Waveform
- 200 Watts Peak Pulse Power per Line (tp = 10/1000 $\mu$ s)
- Low Inductance
- Excellent Clamping Capability
- Unidirectional & Bidirectional Configurations
- Low Leakage Current: < 1 $\mu$ A (Typical)
- Fast Response Time
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

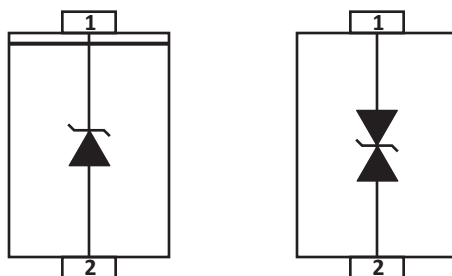
## APPLICATIONS

- Consumer Electronics
- Automotive
- Telecommunications
- Aerospace
- Intelligent Control Systems

## 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
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$	$P_{M(AV)}$	2.8	W
Peak Pulse Power ( $t_p = 10/1000\mu\text{s}$ ) - See Figure 1	$P_{PP}$	200	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 Note 1-3)	DEVICE MARKING		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  @ $V_{RWM}$ $I_R$ $\mu\text{A}$
	UNI	BI		MIN	MAX				
PSMF6.0BL	KG	KGC	6.0	6.67	7.37	10	10.3	19.4	100
PSMF6.5BL	KK	KKC	6.5	7.22	7.98	10	11.2	17.9	30
PSMF12BL	LE	LEC	12.0	13.30	14.70	1	19.9	10.1	1
PSMF13BL	LG	LGC	13.0	14.40	15.90	1	21.5	9.3	1
PSMF15BL	LM	LMC	15.0	16.70	18.50	1	24.4	8.2	1
PSMF20BL	LV	LVC	20.0	22.2	24.5	1	32.4	6.2	1
PSMF24BL	LZ	LZC	24.0	26.7	29.5	1	38.9	5.1	1
PSMF28BL	MG	MGC	28.0	31.1	34.4	1	45.4	4.4	1
PSMF30BL	MK	MKC	30.0	33.30	36.80	1	48.4	4.1	1
PSMF36BL	MP	MPC	36.0	40.00	44.20	1	58.1	3.4	1
PSMF58BL	NG	NGC	58.0	64.40	71.20	1	93.6	2.1	1

## NOTE

1. Add a 'CBL' specify a bidirectional device; i.e., "PSMF6.0CBL".
2. Consult factory for other voltages.

FIGURE 1

PEAK PULSE POWER VS PULSE TIME

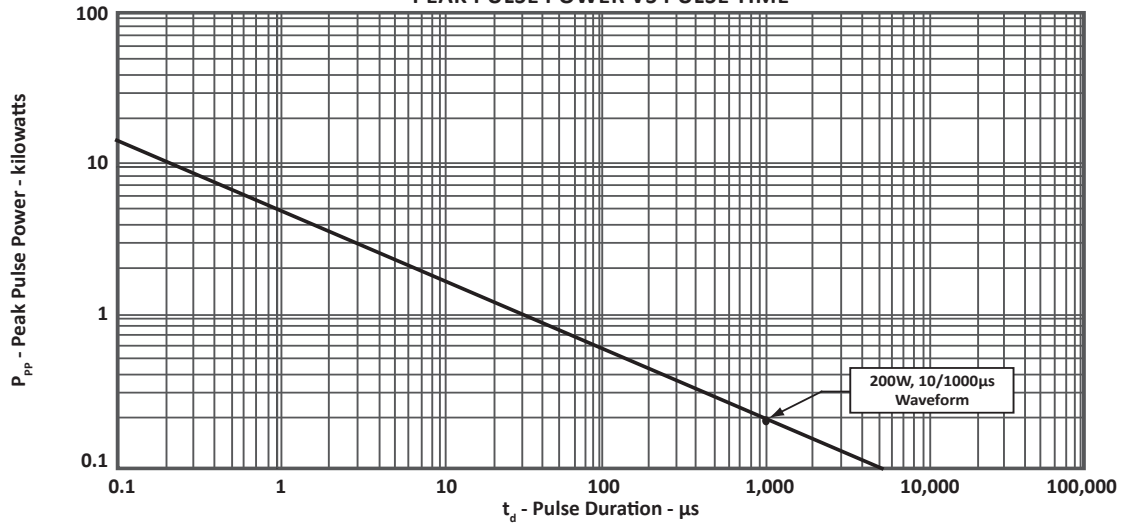


FIGURE 2  
PULSE WAVEFORM

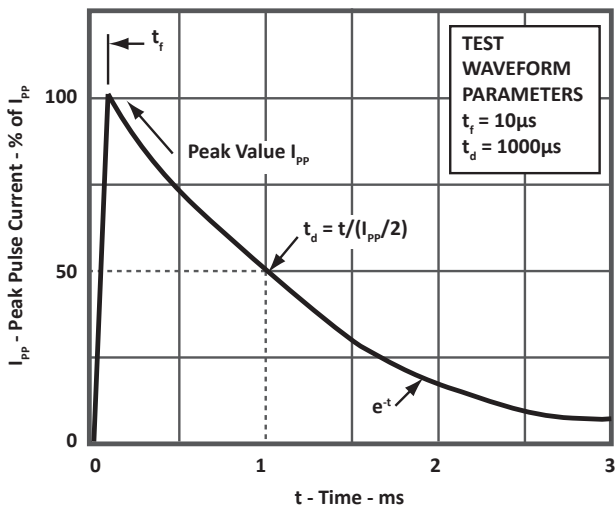
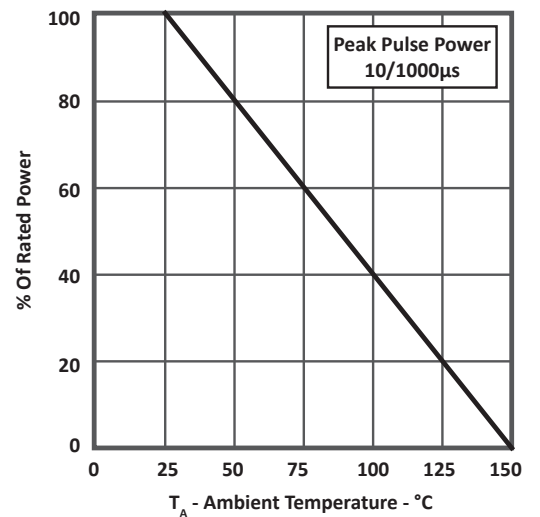


FIGURE 3  
POWER DERATING CURVE



## PACKAGE INFORMATION

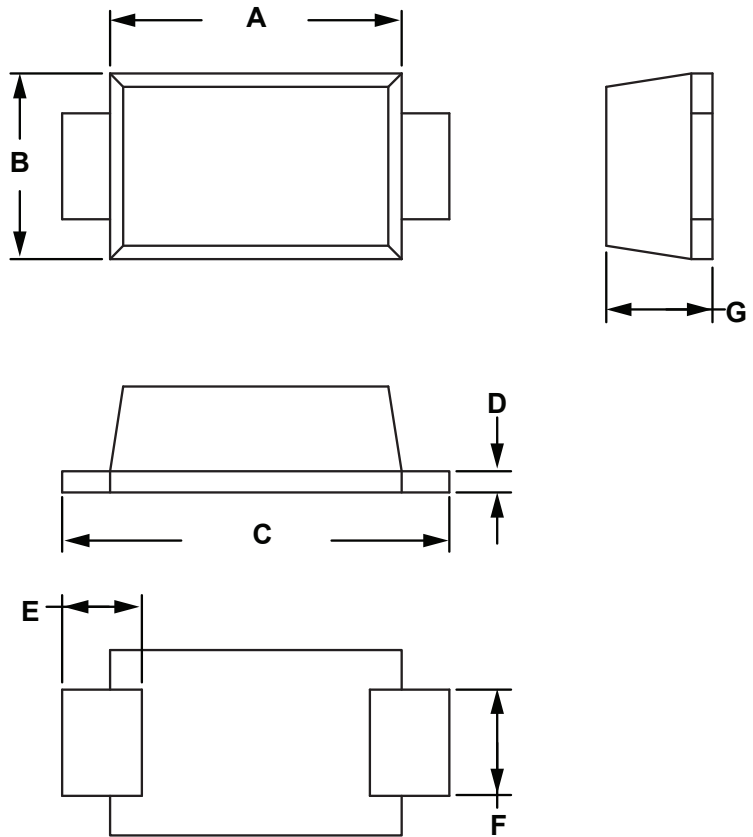
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## OUTLINE DIMENSIONS

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.

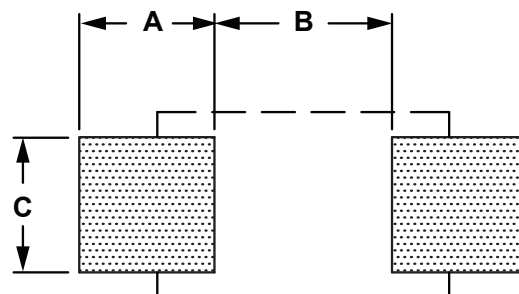


## PAD LAYOUT DIMENSIONS

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

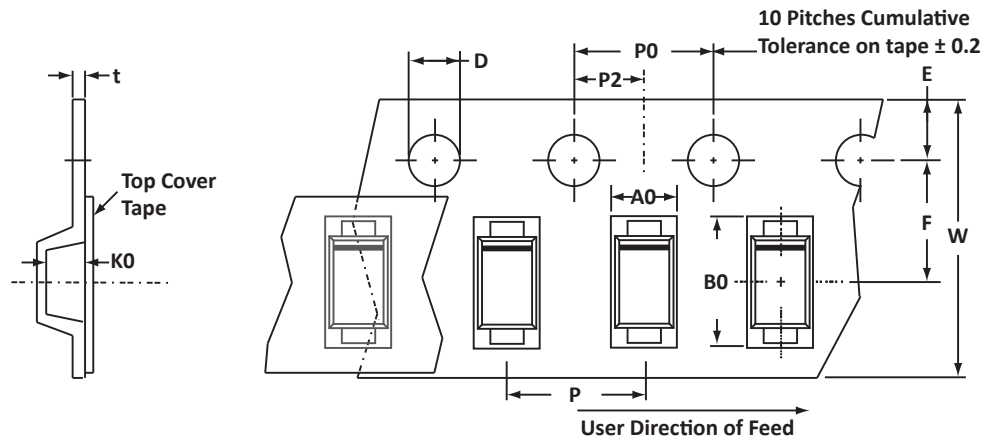
## NOTES

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) and polarity band.

## ORDERING INFORMATION

BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PSMFxxBL/CBL	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 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 an ISO 9001 certified company.

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