TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	350	Watts

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Notes 1 - 2)	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ I_P = 5A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 8/20µs V_C @ I_{PP} VOLTS	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	TYPICAL CAPACITANCE @0V, 1MHz C pF
PSLC03	3U	3.3	4.0	9.0	19.0V @ 20.0A	125	3
PSLC03C	3B	3.3	4.0	9.0	19.0V @ 20.0A	125	3
PSLC05	5U	5.0	6.0	11.0	18.3V @ 17.0A	20	3
PSLC05C	5B	5.0	6.0	11.0	18.3V @ 17.0A	20	3
PSLC08	8U	8.0	8.5	16.6	18.5V @ 17.0A	10	3
PSLC08C	8B	8.0	8.5	16.6	18.5V @ 17.0A	10	3
PSLC12	12U	12.0	13.3	24.0	28.6V @ 11.0A	1	3
PSLC12C	12B	12.0	13.3	24.0	28.6V @ 11.0A	1	3
PSLC15	15U	15.0	16.6	30.0	31.8V @ 10.0A	1	3
PSLC15C	15B	15.0	16.6	30.0	31.8V @ 10.0A	1	3
PSLC24	24U	24.0	26.7	N/A	56.0V @ 6.0A	1	3
PSLC24C	24B	24.0	26.7	N/A	56.0V @ 6.0A	1	3

NOTES
1. Part numbers with an additional "C" suffix are bidirectional devices, i.e., PSLC05**C**.
2. *Unidirectional Only:* Positive potential is applied from pin 2 to 1 or pin 3 to 4.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

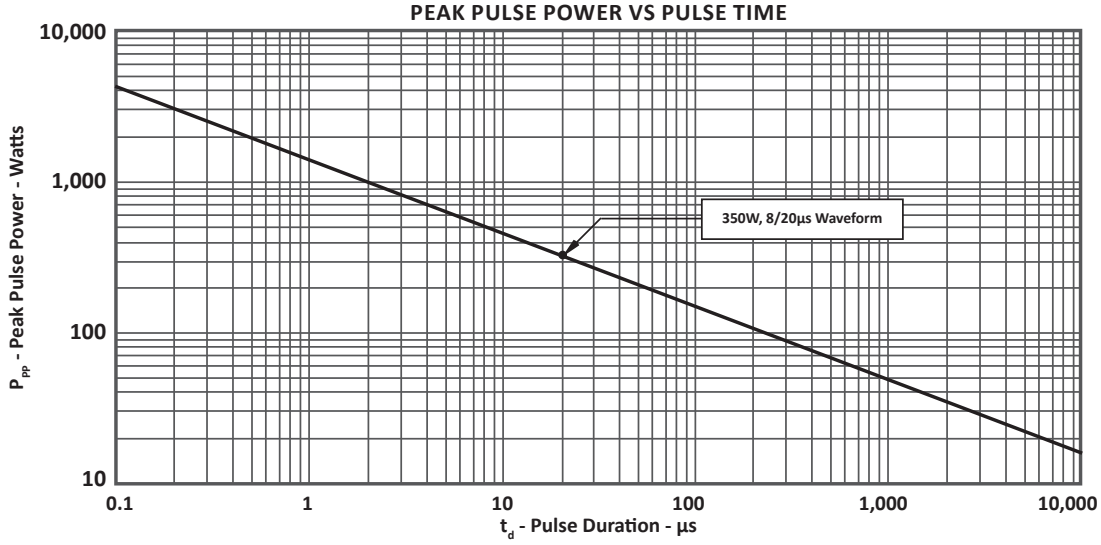


FIGURE 2
PULSE WAVE FORM

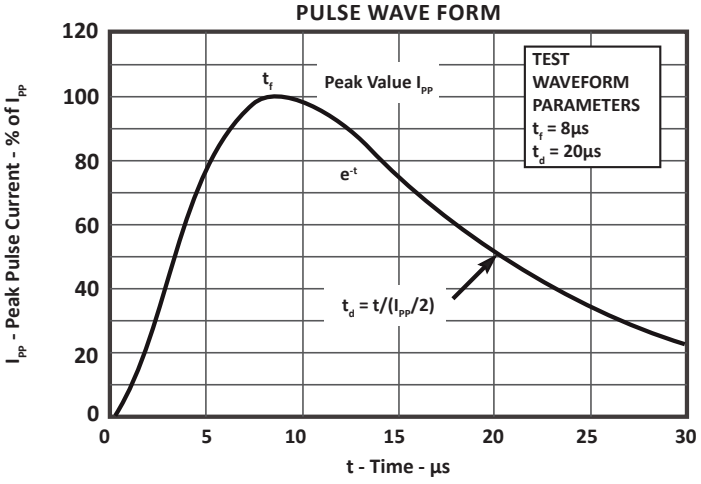
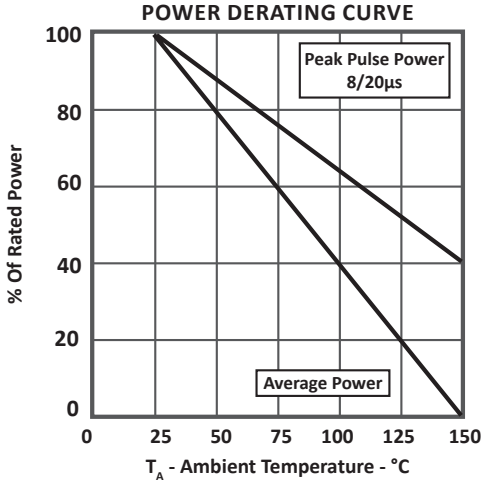
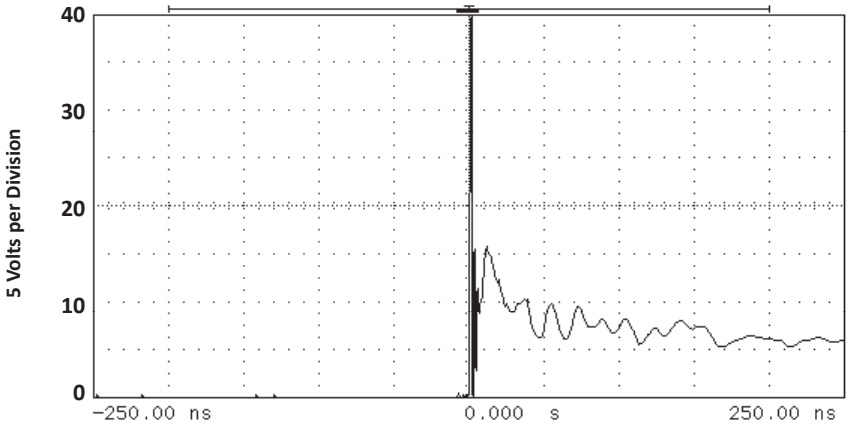


FIGURE 3
POWER DERATING CURVE



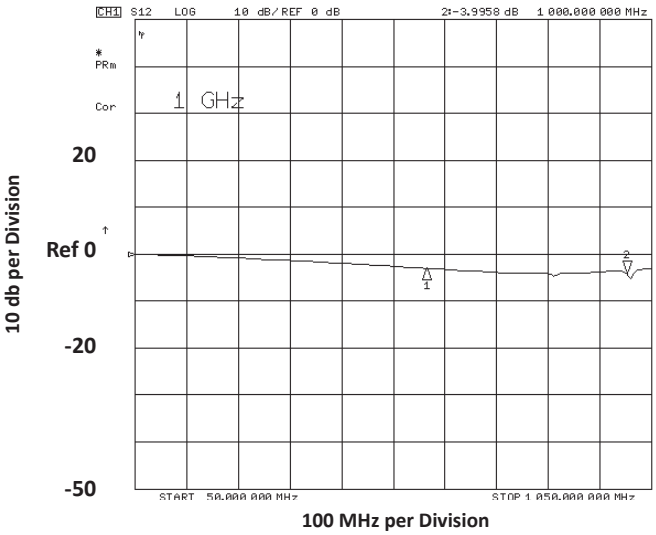
TYPICAL DEVICE CHARACTERISTICS

FIGURE 4
OVERSHOOT & CLAMPING VOLTAGE FOR PSLC03



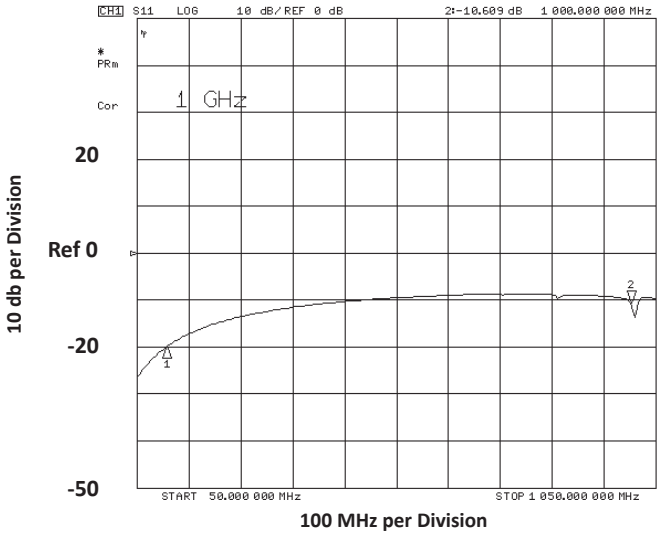
ESD Test Pulse - 5 kilovolt, 1/30ns (Waveshape)

FIGURE 5
INSERTION LOSS - PSLC05



100 MHz per Division

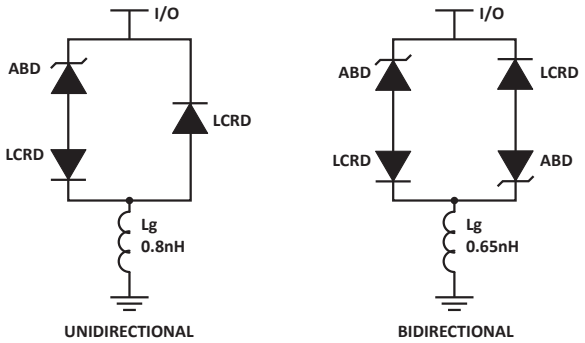
FIGURE 5
RETURN LOSS - PSLC05



100 MHz per Division

SPICE MODEL

FIGURE 1
SPICE MODEL



ABD - Avalanche Breakdown Diode (TVS)
LCRD: Low Capacitance Rectifier Diode
Lg - Lead Inductance

TABLE 1 - SPICE PARAMETERS

PARAMETER	UNIT	ABD(TVS)	LCRD
BV	V	See Table 2	200
IBV	µA	1	0.01
C_{jo}	pF	See Table 2	5
I_S	A	See Table 2	1E-13
Vj	V	0.6	0.6
M	-	0.33	0.33
N	-	1	1
R_S	Ohms	See Table 2	0.31
TT	s	1E-8	1E-9
EG	eV	1.11	1.11

TABLE 2 - ABD SPECIFIC SPICE PARAMETERS

PART NUMBER	B_V(VOLTS)	C_{jo}(pF)	I_S (AMPS)	Rs(OHMS)
PSLC03	4.5	200	1E-11	0.22
PSLC05	6.0	140	1E-11	0.18
PSLC08	8.5	67	1E-11	0.12
PSLC12	13.3	55	1E-13	1.10
PSLC15	16.7	47	1E-13	1.43
PSLC24	26.7	28	1E-13	4.24
PSLC03C	4.5	200	1E-11	0.22
PSLC05C	6.0	140	1E-11	0.18
PSLC08C	8.5	67	1E-11	0.12
PSLC12C	13.3	55	1E-13	1.10
PSLC15C	16.7	47	1E-13	1.43
PSLC24C	26.7	28	1E-13	4.24

APPLICATION INFORMATION

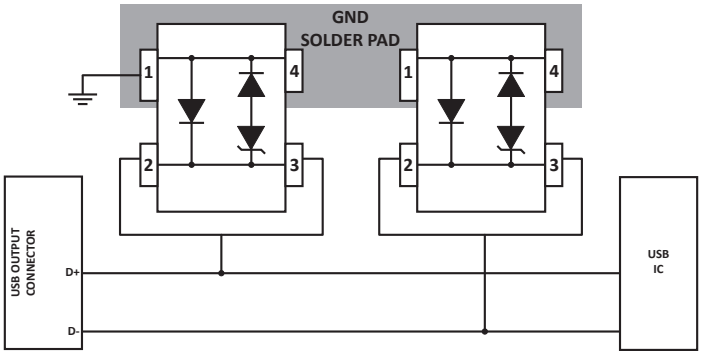


FIGURE 1 - USB PROTECTION

Two PSLCxx (Unidirectional) in a Common-Mode configuration. Circuit connectivity is as follows:
- Device 1: Line 1(D+) is connected to pins 2 and 3.
- Device 2: Line 2(D-) is connected to pins 2 and 3.
- Device 1 and 2: Pins 1 and 4 connected to ground

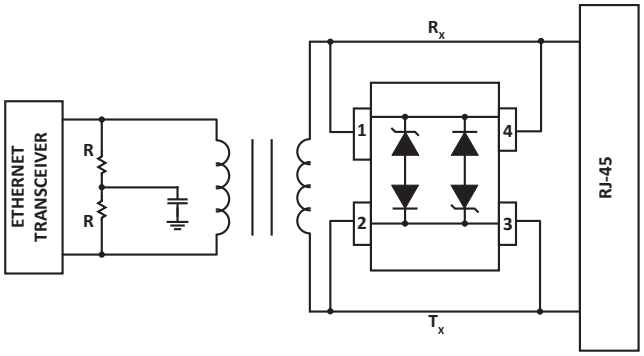


FIGURE 2 - ETHERNET PROTECTION

One PSLCxxC (Bidirectional) in a Differential-Mode configuration. Circuit connectivity is as follow:
- Line 1 (R_x) is connected to pins 1 and 4.
- Line 2 (T_x) is connected to pins 2 and 3.

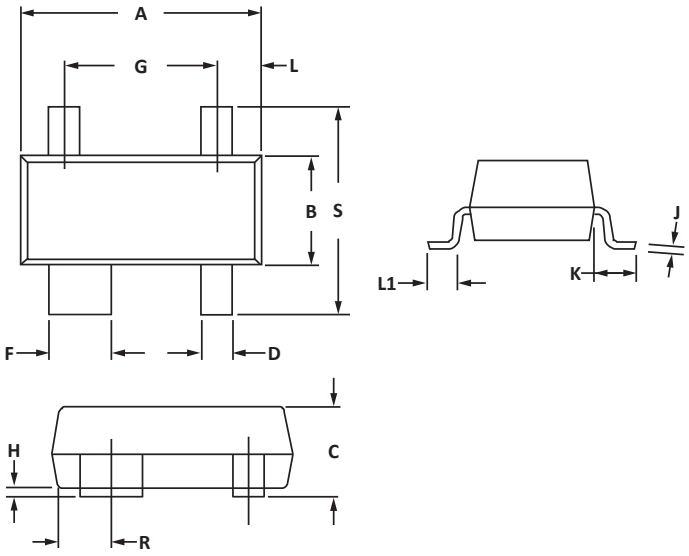
CIRCUIT BOARD RECOMMENDATIONS

Circuit board layout is critical for electromagnetic compatibility protection. The following guidelines are recommended:
- The protection device should be placed near the input terminals or connectors, the device will divert the transient current immediately before it can be coupled into the nearby traces.
- The path length between the TVS device and the protected line should be minimized.
- All conductive loops including power and ground loops should be minimized.
- The transient current return path to ground should be kept as short as possible to reduce parasitic inductance.
- Ground planes should be used whenever possible. For multilayer PCBs, use ground vias.

SOT-143 PACKAGE INFORMATION

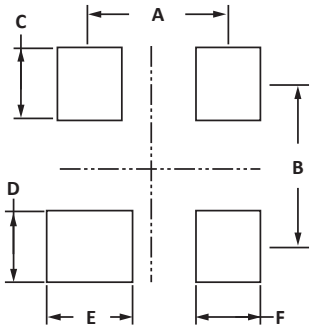
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.110	0.120
B	1.20	1.39	0.047	0.055
C	0.84	1.14	0.033	0.045
D	0.39	0.50	0.015	0.020
F	0.79	0.93	0.031	0.037
G	1.78	2.03	0.070	0.080
J	0.08	0.15	0.003	0.006
K	0.46	0.60	0.018	0.024
L	0.445	0.60	0.0175	0.024
L1	0.40	0.60	0.016	0.024
R	0.72	0.83	0.028	0.033
S	2.11	2.48	0.083	0.098

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

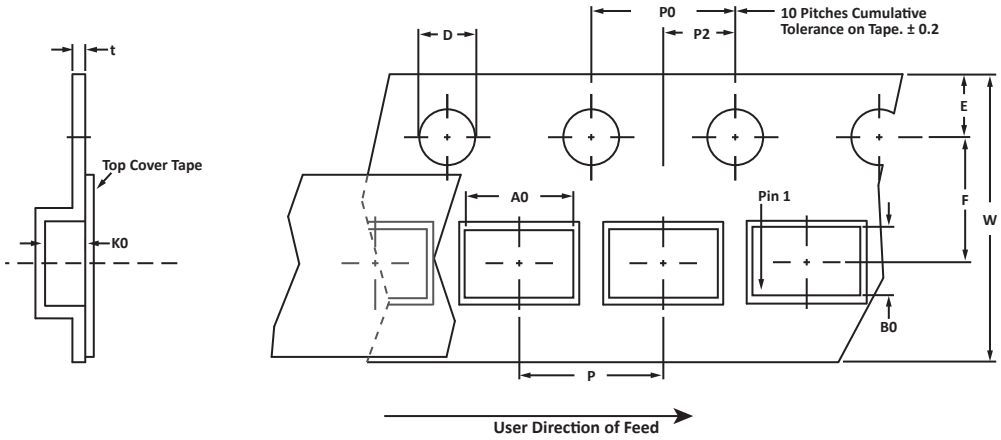


PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.88	2.13	0.074	0.084
B	1.80	2.06	0.071	0.081
C	0.71	0.97	0.028	0.038
D	0.76	1.02	0.030	0.040
E	1.07	1.32	0.042	0.052
F	0.71	0.97	0.028	0.038

NOTES
1. Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	3.10 ± 0.10	2.70 ± 0.10	1.35 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.25

NOTES
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T7 = 7" Reel - 3,000 pieces per 8mm tape.
4. Suffix - T13 = 13" Reel - 10,000 pieces per 8mm tape.
5. Marking on Part - marking code (see page 2) and date code.

Package outline, pad layout and tape specifications per document number 06011.R4 8/10.

ORDERING INFORMATION					
BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PSLCxx/PSLCxxC	-LF	-T7	3,000	7"	n/a
PSLCxx/PSLCxxC	-LF	-T13	10,000	13"	n/a

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

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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