

PROTECTION PRODUCTS

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{pk}	350	Watts
Peak Pulse Power ($t_p = 1.2/50\mu s$)	P_{pk}	200	Watts
Peak Pulse Current ($t_p = 1.2/50\mu s$)	I_{pp}	4	A
Non-Repetitive Peak Forward Current ($t_p = 100\mu s$)	I_{FSMAX}	4	A
Lead Soldering Temperature	T_L	260 (10 sec.)	°C
Operating Temperature	T_J	-55 to +125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

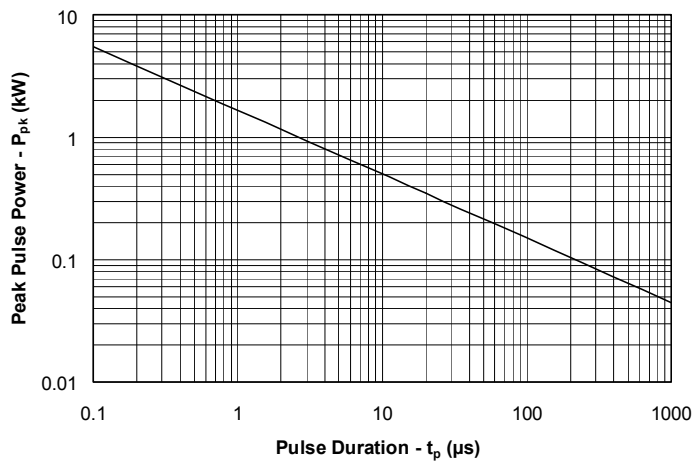
Electrical Characteristics

SDC36						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}	Pin 3 to 1 or Pin 2 to 1			33	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1mA$	36			V
Reverse Leakage Current	I_R	$V_{RWM} = 33V, T=25^\circ C$			5	μA
Reverse Leakage Current	$I_{R(HOT)}$	$V_{RWM} = 33V, T=85^\circ C$			25	μA
Forward Voltage	V_F	$I_F = 100mA$			1.3	V
Clamping Voltage	V_C	$I_{pp} = 2A,$ $t_p = 1.2/50\mu s$			45	V
Junction Capacitance	C_j	$V_R = 0V, f = 1MHz$			45	pF

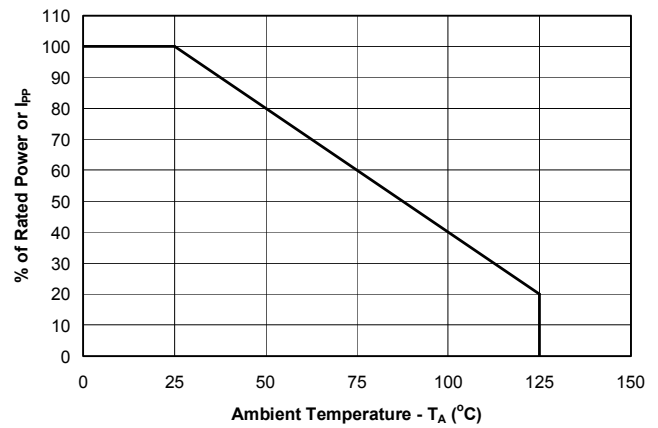
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Typical Characteristics

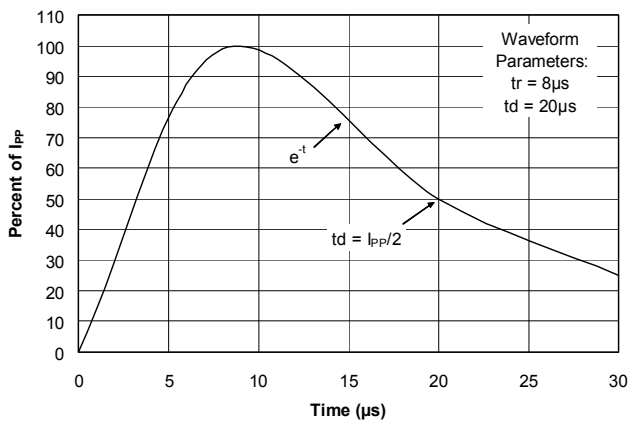
Non-Repetitive Peak Pulse Power vs. Pulse Time



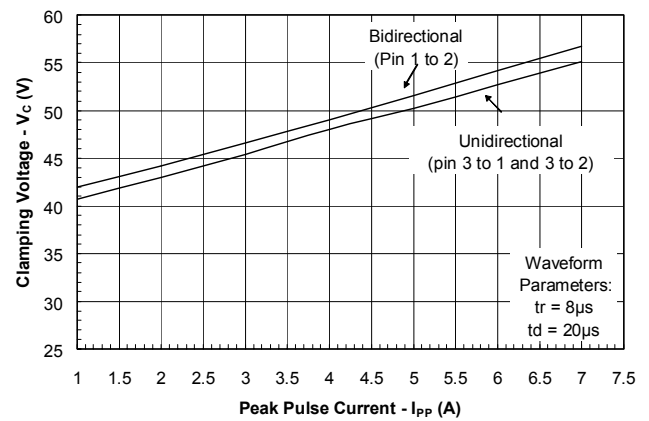
Power Derating Curve



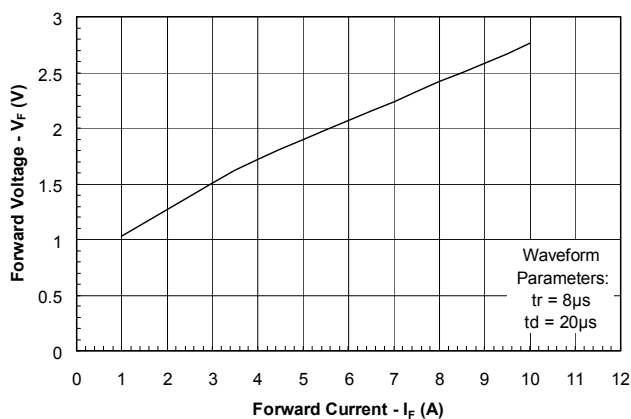
Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Forward Voltage vs. Forward Current



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Applications Information

Device Connection for Protection of Two, Three, and Four Wire Proximity Switches

Digital sensors help to bridge the gap between the physical world and the digital world in applications such as computer controlled factory automation. In such environments, transient voltages can easily disrupt or damage sensitive sensor inputs. The SDC36 provides transient voltage protection for the digital sensors to ensure their operation is not disrupted by the physical world.

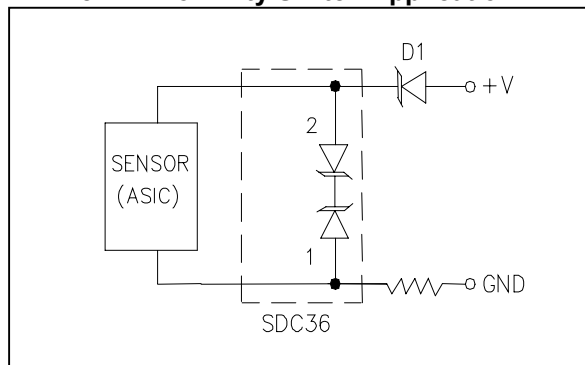
The SDC36 is designed to meet the high surge capability and low clamping voltage needed to protect the ASIC and control logic used in proximity switches. The SDC36 provides protection for the power and I/O lines. Typical configurations for the protection of two, three, and four wire switches are as follows:

1. Two-Wire Switch: Connect pin 1 to the I/O line and pin 2 to the DC supply (since the device is symmetrical, these connections can be reversed). Pin 3 is not connected.

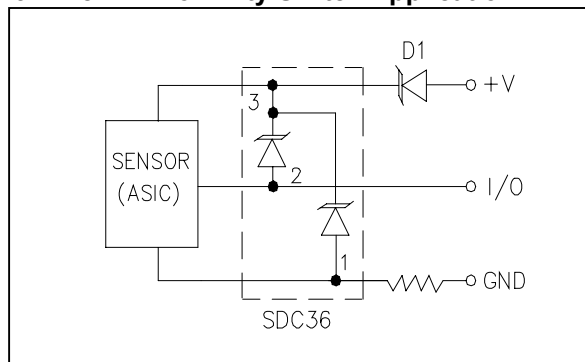
2. Three-Wire Switch: Either pin 1 or pin 2 is connected to the I/O line with the other connected to ground. Pin 3 must be connected to the DC supply.

3. Four-Wire Switch: Two devices are required to protect four wire switches. Pin 3 of each device is connected to the DC supply line. Pins 1 and 2 are connected to the I/O lines and ground as shown.

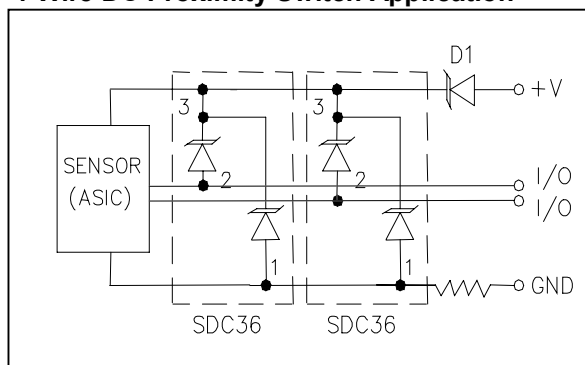
2-Wire DC Proximity Switch Application



3-Wire DC Proximity Switch Application

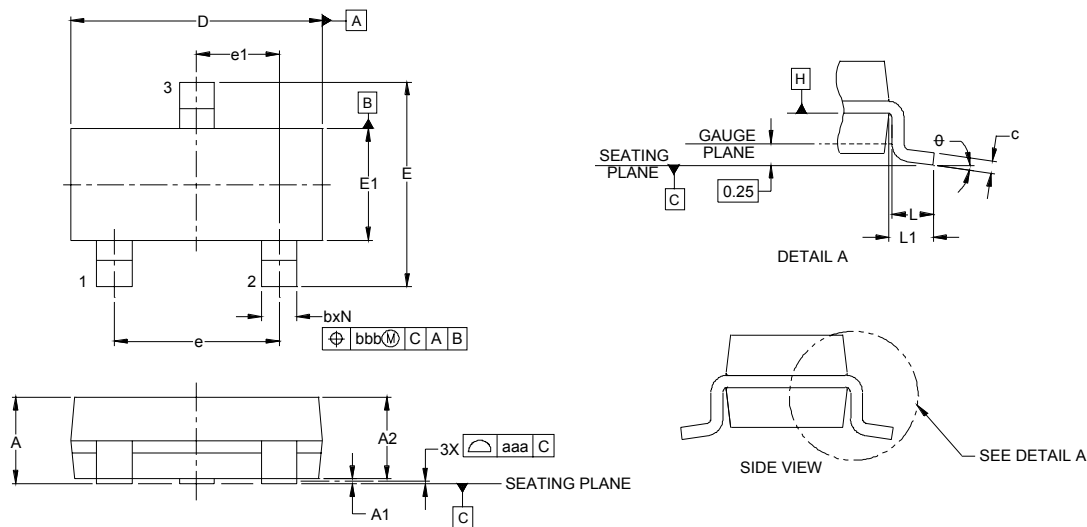


4-Wire DC Proximity Switch Application



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Outline Drawing - SOT23

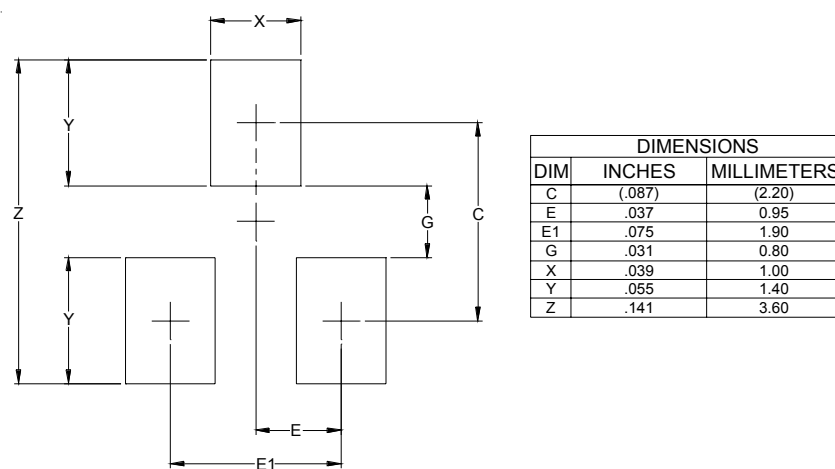


DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.035	-	.044	0.89	-	1.12
A1	.000	-	.004	0.01	-	0.10
A2	.035	.037	.040	0.88	0.95	1.02
b	.012	-	.020	0.30	-	0.51
c	.003	-	.007	0.08	-	0.18
D	.110	.114	.120	2.80	2.90	3.04
E	.082	.093	.104	2.10	2.37	2.64
E1	.047	.051	.055	1.20	1.30	1.40
e		.075			1.90 BSC	
e1		.037			0.95 BSC	
L	.015	.020	.024	0.40	0.50	0.60
L1		.022			(0.55)	
N		3			3	
θ	0°	-	8°	0°	-	8°
aaa		.004			0.10	
bbb		.008			0.20	

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. DATUMS **-A-** AND **-B-** TO BE DETERMINED AT DATUM PLANE **-H-**
3. DIMENSIONS "E1" AND "D" DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

Land Pattern - SOT23



DIM	DIMENSIONS	
	INCHES	MILLIMETERS
C	(.087)	(2.20)
E	.037	0.95
E1	.075	1.90
G	.031	0.80
X	.039	1.00
Y	.055	1.40
Z	.141	3.60

NOTES:

1. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.
2. REFERENCE JPC-SM-782A

Note 1 : Grid placement courtyard is 8 x 8 elements (4mm x 4mm) in accordance with the international grid detailed in IEC Publication 97.

PROTECTION PRODUCTS**Ordering Information**

Part Number	Lead Finish	Qty per Reel	Reel Size
SDC36.TC	SnPb	3,000	7 Inch
SDC36.TCT	Pb Free	3,000	7 Inch

Contact Information

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