

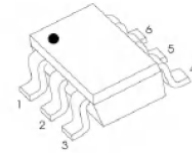


## Discription

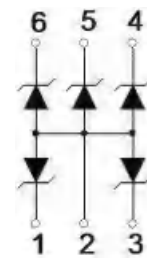
The SMF05CT1G is a 5-channel ultra low capacitance rail clamp ESD protection diodes array. Each channel consists of a pair of ESD diodes that steer positive or negative ESD current to either the positive or negative rail. A zener diode is integrated in to the array between the positive and negative supply rails. In the typical applications, the negative rail pin (assigned as GND) is connected with system ground. The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.

## Features

- ★ Uni-directional ESD protection of 5 lines
- ★ IEC 61000-4-2 Level 4 ESD protection
- ★ Low reverse stand-off voltage: 5V
- ★ Low reverse clamping voltage
- ★ Low leakage current
- ★ Fast response time
- ★ Small package saves board space
- ★ RoHS compliant



SOT-363



Circuit Diagram

## Ordering information

Product ID	Pack	Qty(PCS)
SMF05CT1G	SOT-363	3000

## Absolute Ratings(Tamb = 25°C)

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20 μ s)	100	W
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>op</sub>	Operating Temperature Range	-55 to +150	°C
T <sub>j</sub>	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge	±15	KV
	IEC61000-4-2 (ESD) contact discharge	±8	KV
	IEC61000-4-4 (EFT)	40	A



**Electrical Characteristics** Ratings at 25°C

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$V_{RWM}$	Reverse Working Voltage				5	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1mA$	6.2			V
$I_R$	Reverse Leakage Current	$V_{RWM} = 5V$			1.0	$\mu A$
$V_C$	Clamping Voltage	$I_{RWM} = 5A, t_p = 8/20\mu s$			9.8	V
		$I_{RWM} = 8A, t_p = 8/20\mu s$			12.5	V
$C_J$	Junction Capacitance	$V_R = 0V, f = 1MHz$		80	130	pF

**Typical Characteristics** ( $T_A=25^\circ C$  unless otherwise Specified)

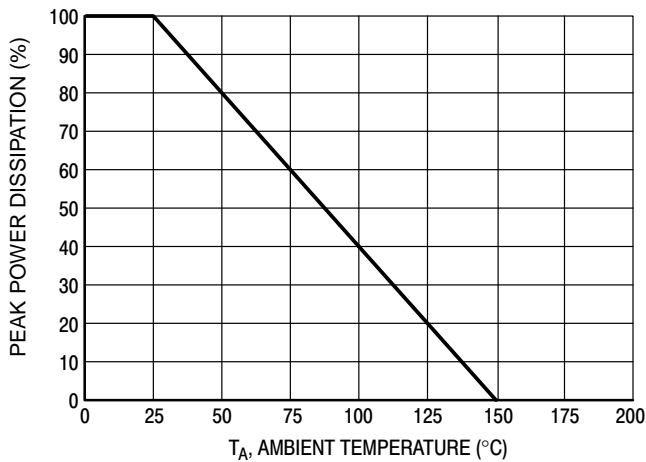


Figure 1. Pulse Derating Curve

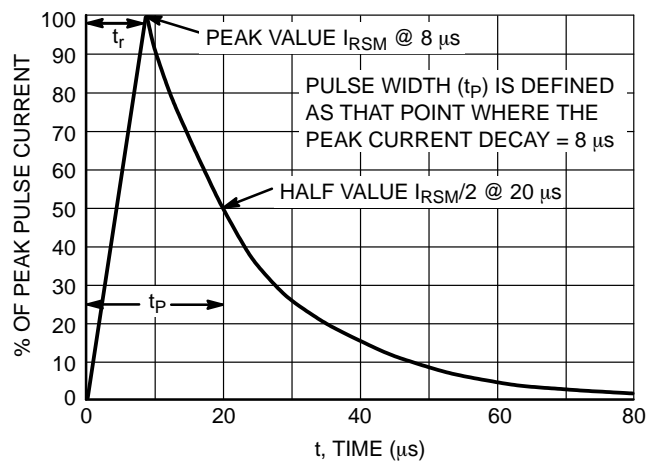
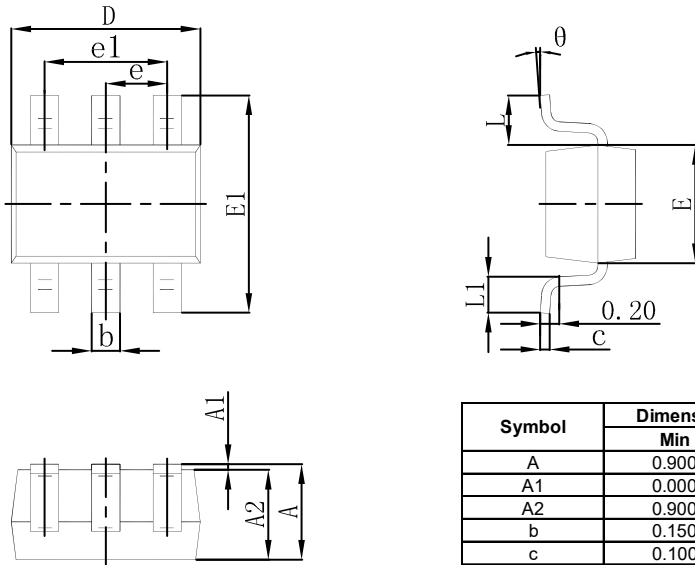


Figure 2.  $8 \times 20 \mu s$  Pulse Waveform

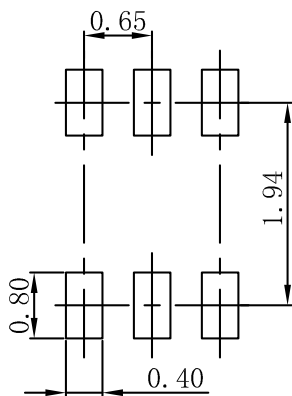


### SOT-363 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
theta	0°	8°	0°	8°

### SOT-363 Suggested Pad Layout



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.



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