

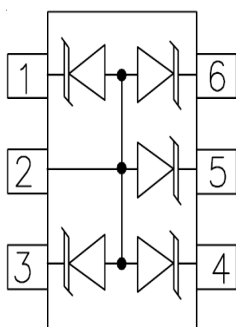
Description

The SMF05C is a 5V TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The SMF05C complies with the IEC 61000-4-2 (ESD) standard with $\pm 20\text{kV}$ air and $\pm 15\text{kV}$ contact discharge. It is assembled into a 6-Pin lead-free SOT-363 package. The low clamping voltage array make it ideal for use in portable electronics such as cell phones, PDAS, and digital cameras.

Features

- * Ultra low leakage: nA level
- * Operating voltage: 5.0V
- * Up to 5 data lines
- * Low clamping voltage
- * Complies with following standards:
IEC 61000-4-2 (ESD) immunity test
Air : $\pm 20\text{kV}$; discharge: $\pm 15\text{kV}$;
IEC 61000-4-4 (EFT) 40A(5/50ns)
IEC 61000-4-5 (Lightning) 8A(5/50ns)
- * SOT-363 Package
- * RoHS Compliant

Circuit Diagram

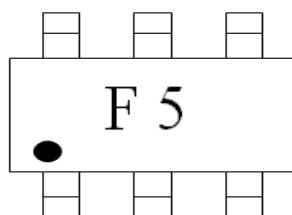


Circuit Diagram

Applications

- * Peripherals
- * Industrial Equipment
- * Notebook Computers
- * Portable Instrumentation
- * Microprocessor Based Equipment
- * Cell Phone Handsets and Accessories
- * Personal Digital Assistants (PDAs) and Pagers

Marking Diagram



Transparent top view

F5= Device Marking Code

Dot denotes Pin1

Ordering Information

Part Number	Packaging	Reel Size
SMF05C	3000/Tape & Reel	7 inch

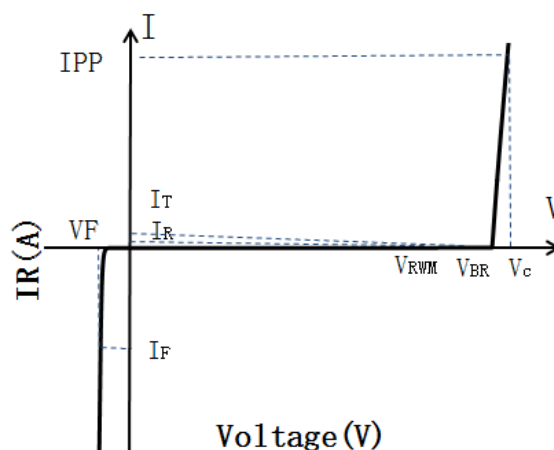
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs , I/O-GND)	Ppk	100	W
Peak Pulse Current (8/20 μs)	IPP	8	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 20	kV
ESD per IEC 61000-4-2 (Contact)		± 15	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T stg	-55 to +150	$^{\circ}\text{C}$

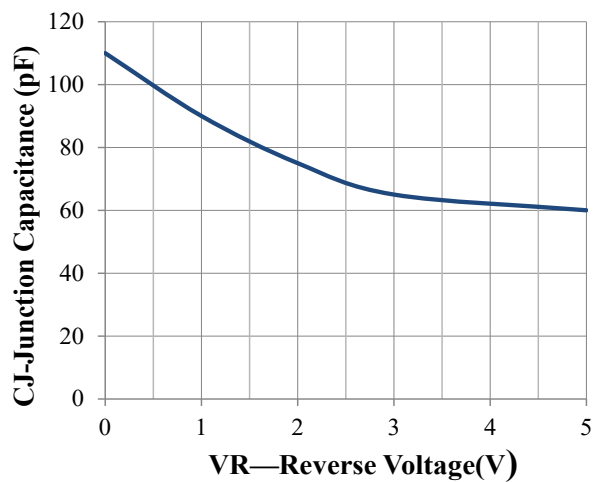
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V _{RWM}	I/O-GND			5.0	V
Breakdown Voltage	V _{BR}	I _T = 1mA(I/O-GND)	6.0	7.5	8.5	V
Reverse Leakage Current	I _R	V _{RWM} = 5.0V			0.5	μA
Forward Breakdown Voltage	V _F	I _F = 10mA, GND to IO		0.8	1.0	V
Clamping Voltage	V _C	I _{PP} = 8A (8 x 20 μs pulse)			12.5	V
Junction Capacitance	C _J	f = 1MHz, I/O-GND			130	pF
Junction Capacitance	C _L	f = 1MHz, I/O-I/O pins			65	pF

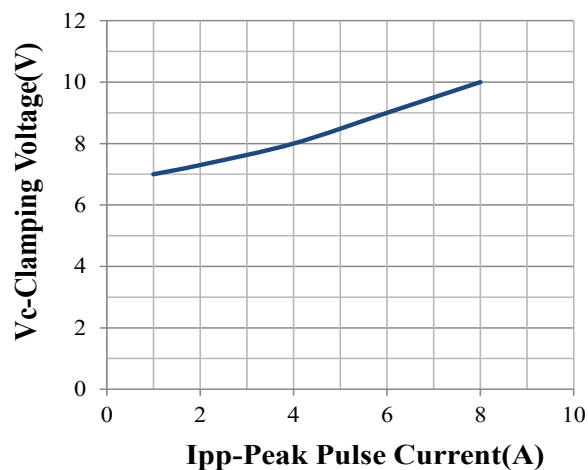
Symbol	Parameter
I _T	Test Current
I _{PP}	Maximum Reverse Peak Pulse Current
V _C	Clamping Voltage @I _C



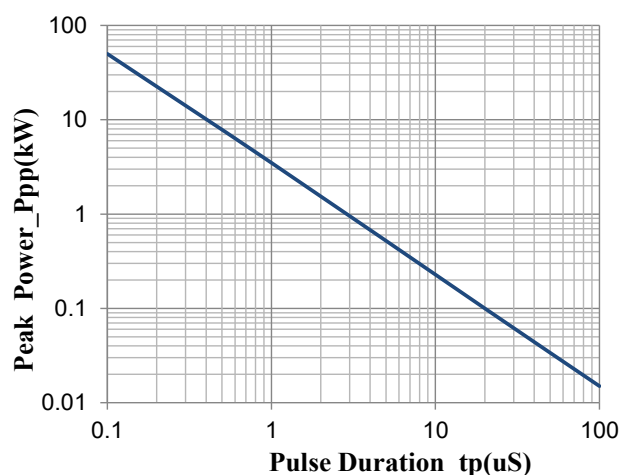
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



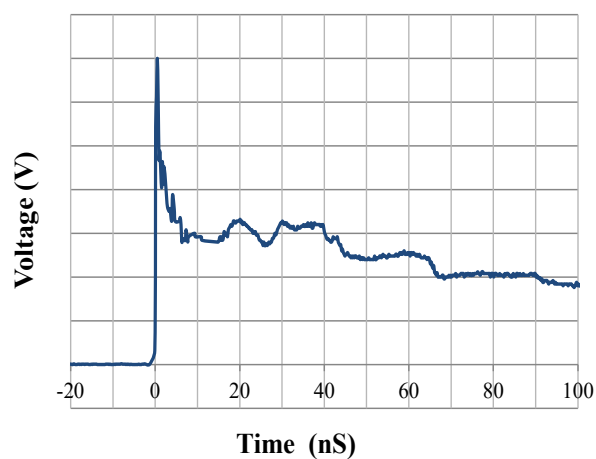
Junction Capacitance vs. Reverse Voltage



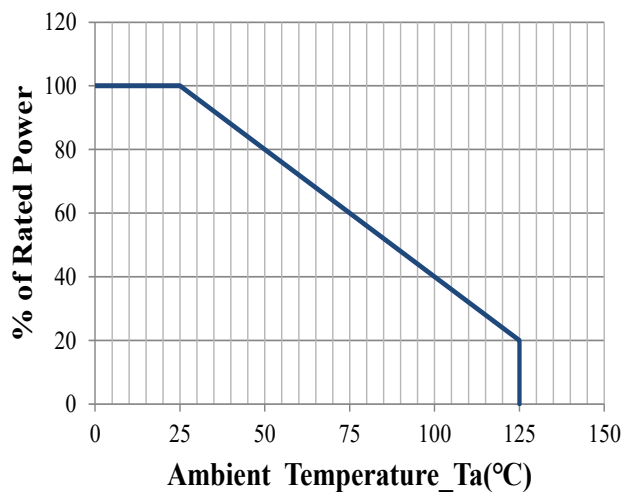
Clamping Voltage vs. Peak Pulse Current



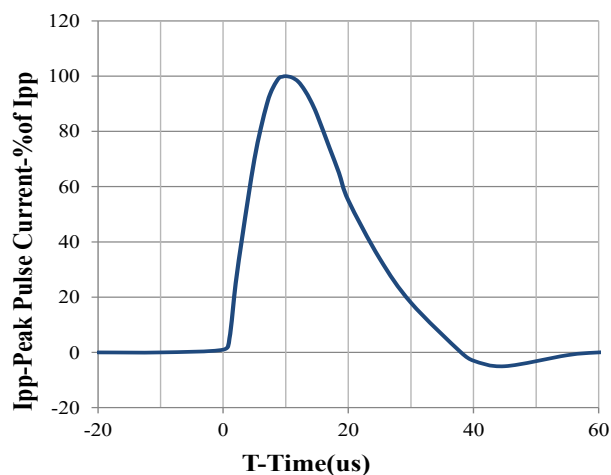
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

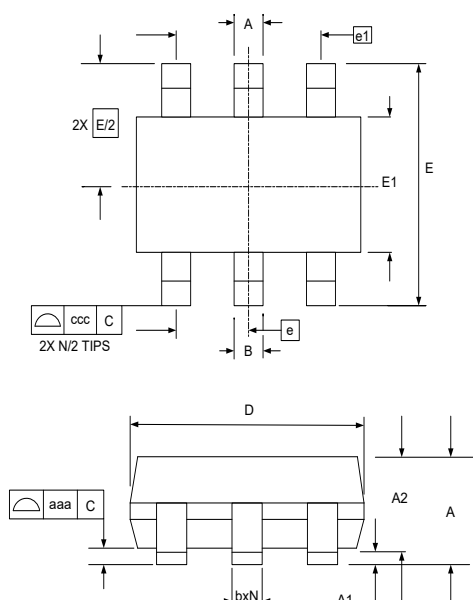


Power Derating Curve



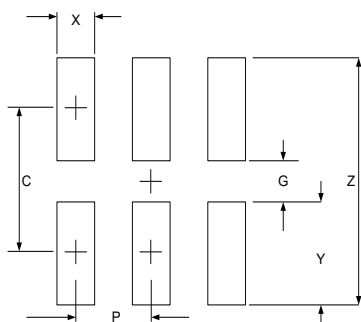
8 X 20us Pulse Waveform

SOT-363 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A			1.10			0.043
A1	0.00		0.10	0.000		0.004
A2	0.70	0.90	1.00	0.028	0.035	0.039
b	0.15		0.30	0.006		0.012
c	0.08		0.22	0.003		0.009
D	1.80	2.00	2.20	0.071	0.079	0.087
E1	1.15	1.25	1.35	0.045	0.049	0.053
E	2.10 BSC			0.083 BSC		
e	0.65 BSC			0.026 BSC		
e1	1.30 BSC			0.051 BSC		
N	6			6		
aaa	0.10			0.004		
ccc	0.30			0.012		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	1.85	0.073
G	1.00	0.039
P	0.65	0.026
X	0.40	0.016
Y	0.85	0.033
Z	2.70	0.106

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