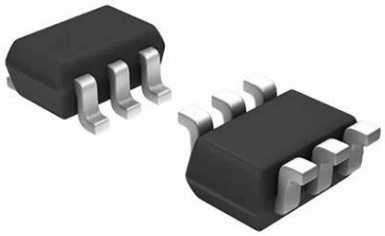
HJKE

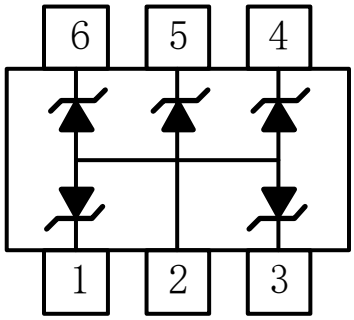
SMF05C

5-Line Ultra TVS Array

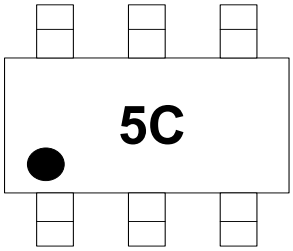
The SMF05C is a 5V TVS array, utilizing leading mono-lithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The SMF05C complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV 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 porta-ble electronics such as cell phones, PDAs, and digital cameras.



SOT-363



Circuit diagram



5C = Device Marking Code

Dot denotes Pin1

Marking (Top View)

Features

- Low leakage current
- Operating voltage: 5V
- Low clamping voltage
- JEDEC SOT-363 package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 3A (8/20μs)
- RoHS Compliant

Mechanical Characteristics

- Package: SOT-363
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below

Applications

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

Ordering Information

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

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

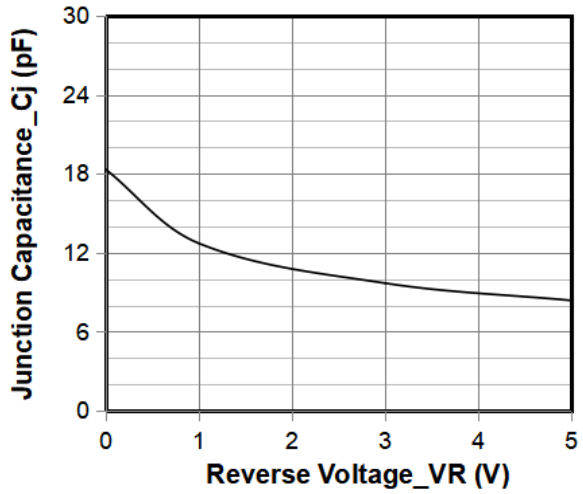
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	35	W
Peak Pulse Current (8/20μs)	I_{PP}	3	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

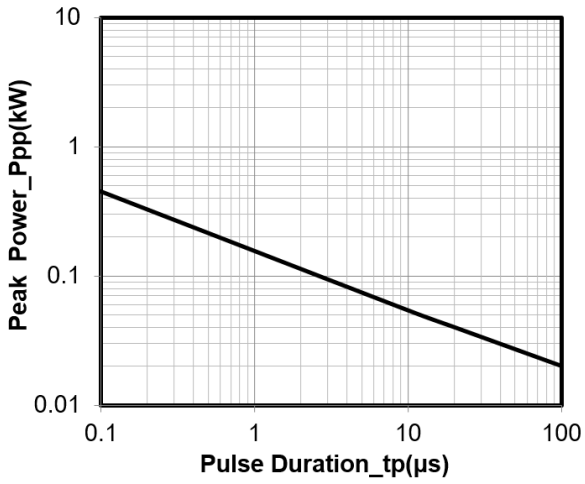
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Reverse Breakdown Voltage	V_{BR}	6		8.5	V	I_T = 1mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 5V, any I/O pin to ground
Clamping Voltage	V_C			9	V	I_{PP} = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V_C			12	V	I_{PP} = 3A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	C_J		20		pF	VR = 0V, f = 1MHz, any I/O pin to ground

Note 1: I/O pins are Pin 1, 3, 4, 5, 6

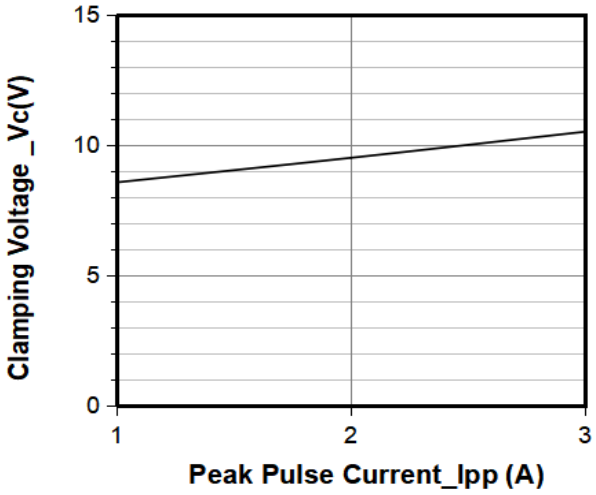
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



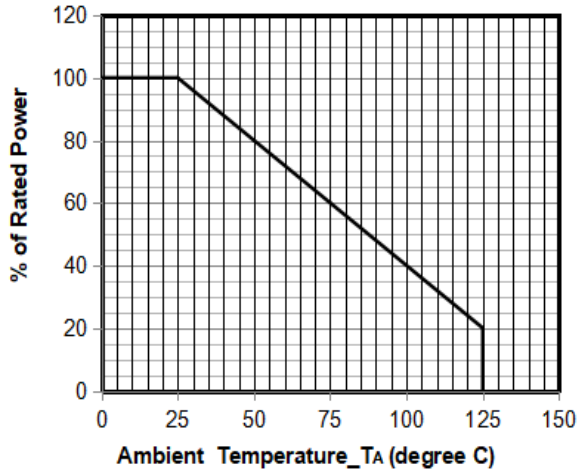
Junction Capacitance vs. Reverse Voltage



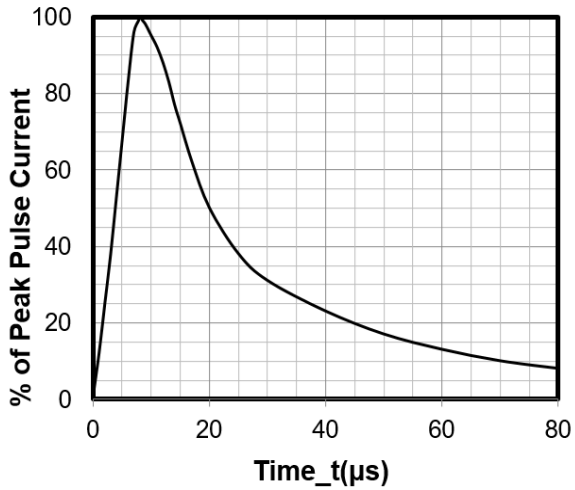
Peak Pulse Power vs. Pulse Time



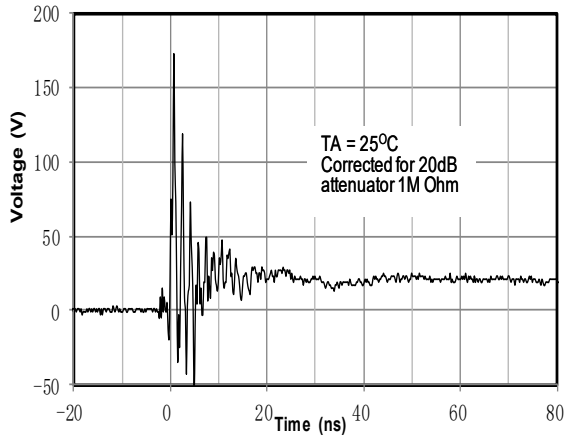
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



ESD Clamping Voltage

8 kV Contact per IEC61000−4−2