

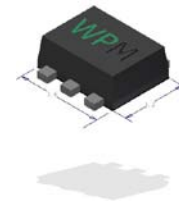
## WPE5605C

### TVS Diode Array For ESD and Latch-Up Protection

The WPE5605C TVS array is designed to protect sensitive electronics from damage or latch-up due to ESD and other voltage-induced transient events. It is designed for use in applications where board space is at a premium. Each device will protect up to five lines. It is unidirectional devices and may be used on lines where the signal polarities are above ground. TVS Diode Array For ESD and Latch-Up Protection

#### Features

- Protects five I/O lines
- Low capacitance
- Working voltages : 5V
- Low leakage current
- Response Time is < 1 ns
- Low operating and clamping voltages
- ROHS compliant
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- Weight 3 milligrams (Approximate)
- WeiPan technology



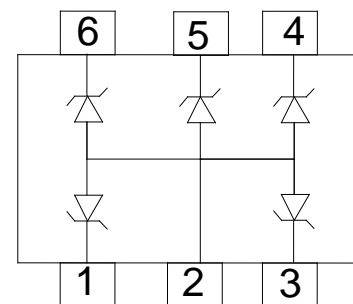
**SOT-563**

#### Main applications

- Cellular Handsets and Accessories
- Cordless Phones
- Personal Digital Assistants (PDA's)
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- MP3 Players

#### Protection solution to meet

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)



#### Ordering Information

Device	Qty per Reel	Reel Size
WPE5605C	3000	7 Inch

**Maximum ratings (Tamb=25°C Unless Otherwise Specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20µs waveform)	P <sub>PPP</sub>	100	Watts
Peak Pulse Current(tp=8/20µs waveform)	I <sub>PP</sub>	8	A
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating Temperature Range	T <sub>J</sub>	-55 ~ 125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ 150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

\*Other voltages may be available upon request.

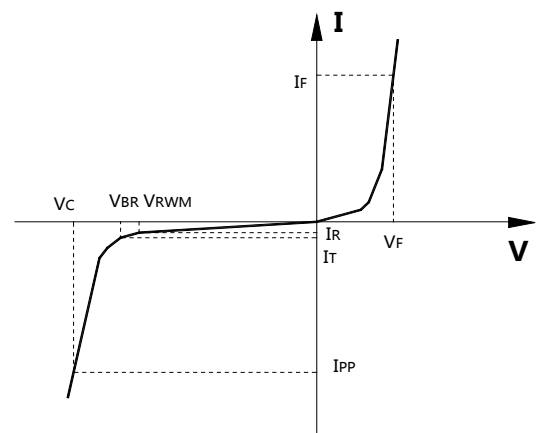
1. Non-repetitive current pulse, per Figure 1.

**Electrical characteristics (Tamb=25°C Unless Otherwise Specified)**

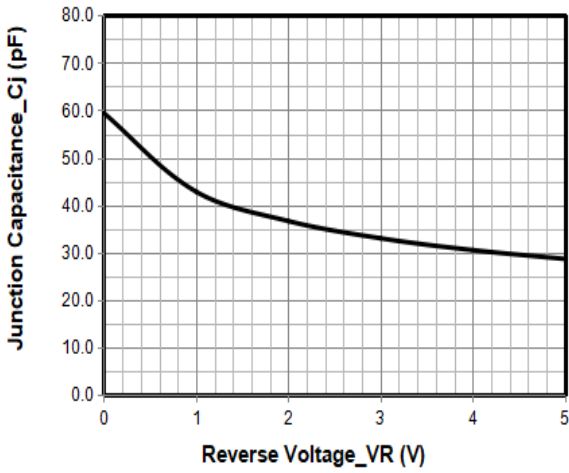
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V <sub>RWM</sub>	Reverse Working Voltage				5.0	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA,	6.0		8.5	V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 5V,		0.05	0.2	uA
V <sub>F</sub>	Diode Forward Voltage	I <sub>F</sub> = 15mA		0.85	1.2	V
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, tp =8/20µs,			8	V
		I <sub>PP</sub> = 8A, tp =8/20µs,			12	V
I <sub>PP</sub>	Peak Pulse Current	tp =8/20µs			8	A
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz,		55		pF

Junction capacitance is measured in VR=0V,F=1MHz

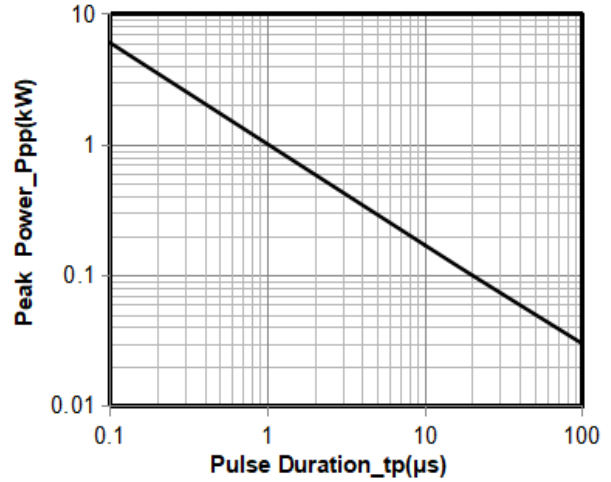
Symbol	Parameter
V <sub>RWM</sub>	Working Peak Reverse Voltage
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
I <sub>T</sub>	Test Current
I <sub>RM</sub>	Leakage current at V <sub>RWM</sub>
I <sub>PP</sub>	Peak pulse current
C <sub>O</sub>	Off-state Capacitance
C <sub>J</sub>	Junction Capacitance



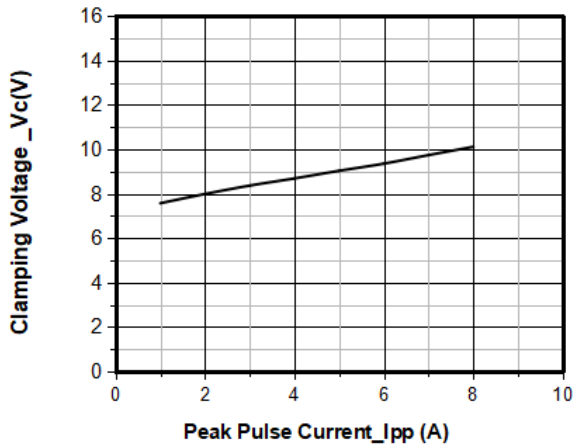
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



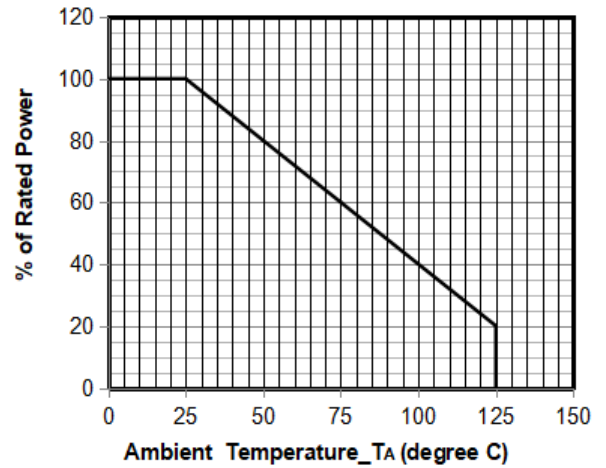
Junction Capacitance vs. Reverse Voltage



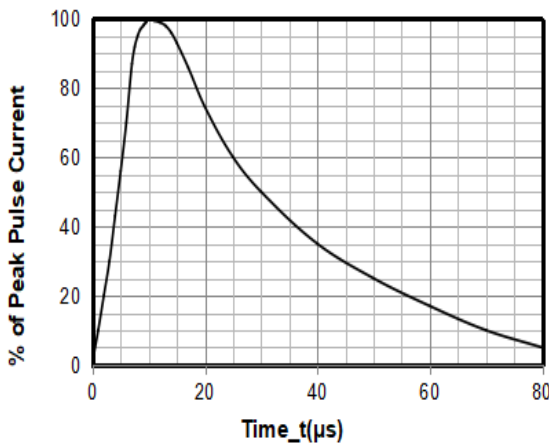
Peak Pulse Power vs. Pulse Time



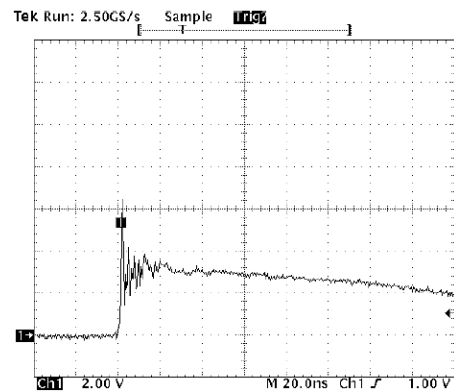
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

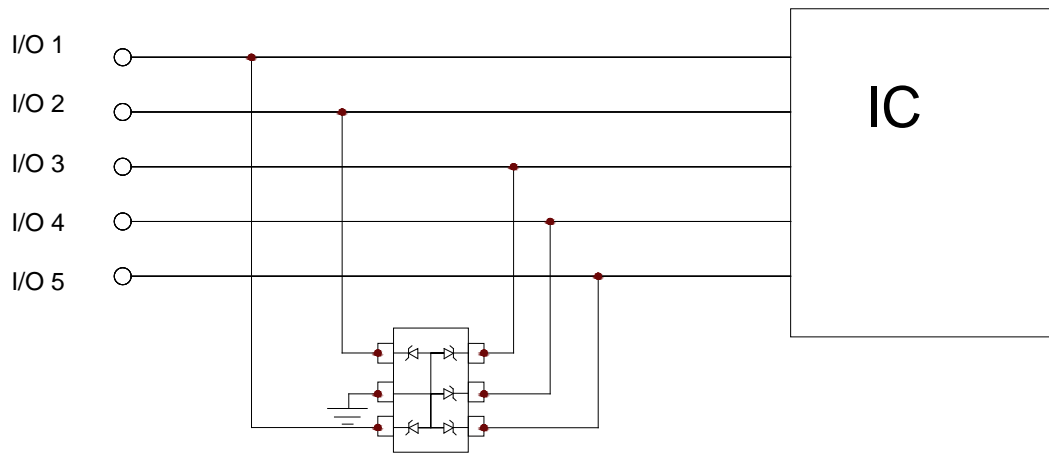


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

## Typical applications



### Device Connection for Protection of Five Data Lines

The WPE5605C is designed to protect up to five unidirectional data lines. The device is connected as follows:

Unidirectional protection of five I/O lines is achieved by connecting pins 1, 3, 4, 5 and 6 to the data lines. Pin 2 is connected to ground. The ground connection should be made directly to the ground plane for best results. The path length is kept as short as possible to reduce the effects of parasitic inductance in the board traces.

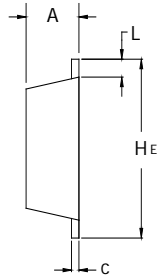
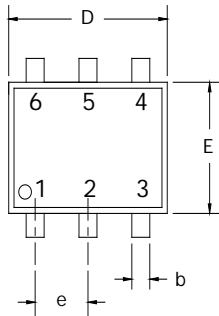
**Package Information**

**SOT-563**

**Mechanical Data**

Case: SOT-563

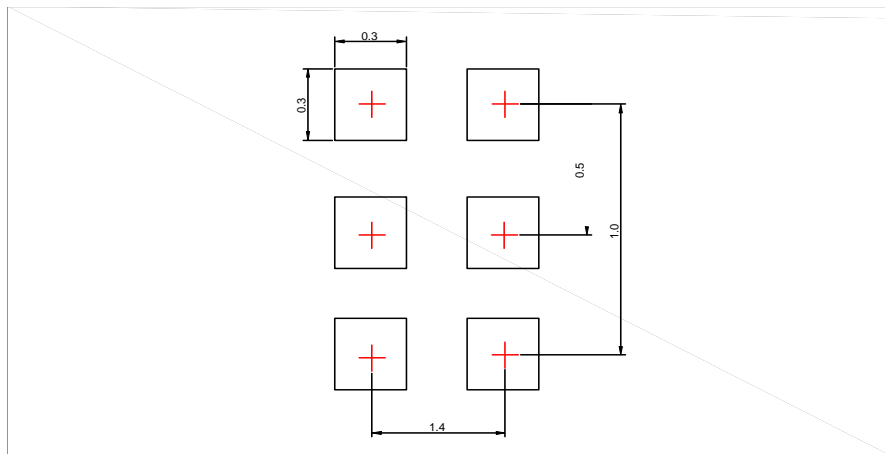
Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	Min	Max
A	0.525	0.60
b	0.17	0.27
c	0.09	0.16
D	1.50	1.70
E	1.10	1.30
e	0.50BSC	
L	0.10	0.30
HE	1.50	1.70

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**Recommended Pad outline**



**Contact information**

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