

**SEDFN2105C**  
**Single Line ESD Protection Diode with Low Capacitance**

Revision:A

**General Description**

The SEDFN2105C is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers, and PDA's. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, lower operating voltage, lower clamping voltage and no device degradation when compared to MLVs.

**Applications**

- Cellular phones handsets and Accessories
- PDA's
- MP3 players
- Digital cameras
- Portable applications
- Mobile telephone

**Features**

- Equivalent to 0201 package
- Low Body Height: 0.28mm
- Small package for use in portable electronics
- Low Leakage current
- These are Pb-Free Devices

**Complies with the following standards**

**IEC61000-4-2**

**Level 4 15 kV (air discharge)**

**8 kV (contact discharge)**

**MIL STD 883E - Method 3015-7 Class 3**

**Functional diagram**



**DFN0603-D**

**Absolute Ratings (T<sub>amb</sub>=25°C )**

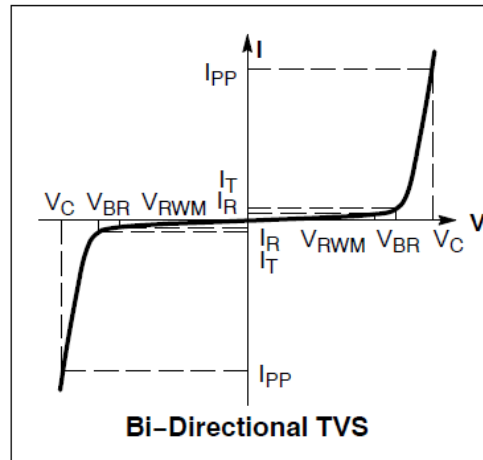
Symbol	Parameter	Value	Units
	IEC 61000-4-2 (ESD) Contact	8	kV
P <sub>D</sub>	Total Power Dissipation on FR-5 Board (Note 1)	200	mW
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +155	°C
T <sub>j</sub>	Maximum junction temperature	-55 to +155	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5=1.0\*0.75\*0.62 in.

## Electrical Parameter

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$I_T$	Test Current
$V_{BR}$	Breakdown Voltage @ $I_T$



## Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.  $V_F = 0.9V$  at  $I_F = 10mA$

Part Numbers	$V_{BR}$			$I_T$	$V_{RWM}$	$I_R$	$V_C$ @ $I_{ppMAX}=5.5A$	<b>C</b>
	Min.	Typ.	Max.					
	V	V	V					mA
SEDFN2105C	5.6	7.0	8.5	1	5.0	1	12.5	15

- $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of 25°C.
- Surge current waveform per Figure 5.
- For test procedure see Figures 3 and 4.

## Typical Characteristics

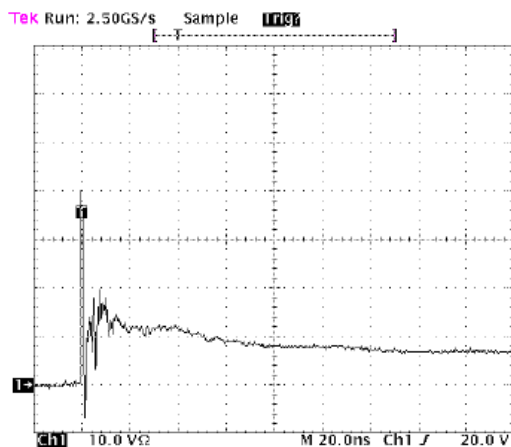


Figure 1.ESD Clamping Voltage Screenshot  
Positive 8 kV Contact per IEC61000-4-2

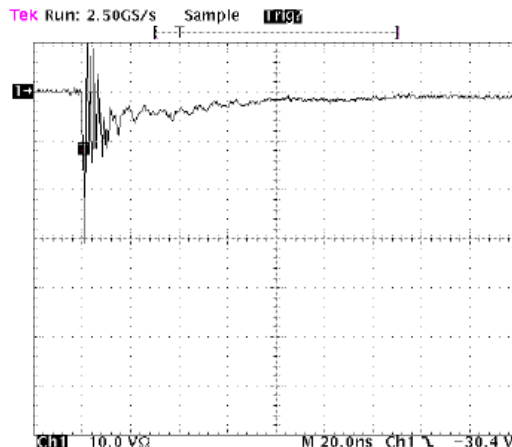


Figure 2.ESD Clamping Voltage Screenshot  
Negative 8 kV Contact per IEC61000-4-2

IEC 61000-4-2 Spec.

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

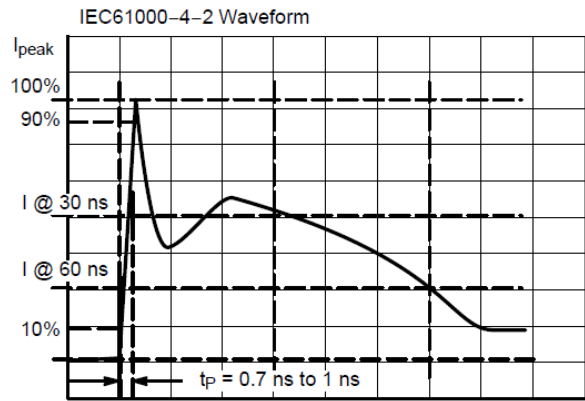


Figure 3.IEC 61000-4-2 Spec

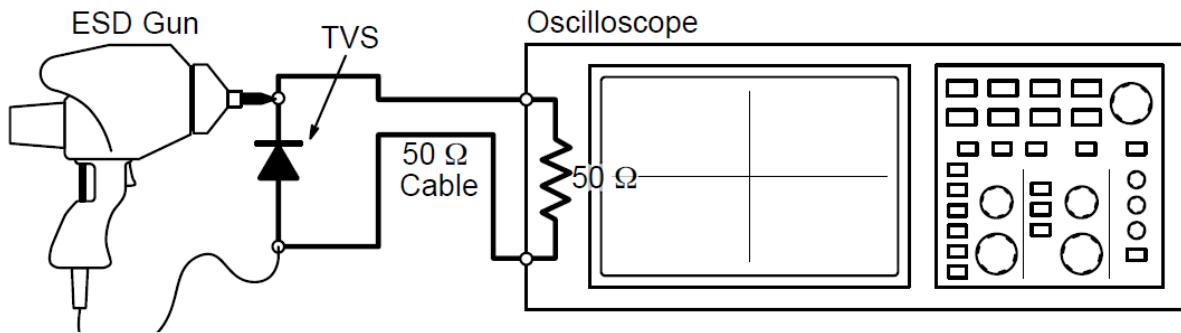


Figure 4. Diagram of ESD Test Setup

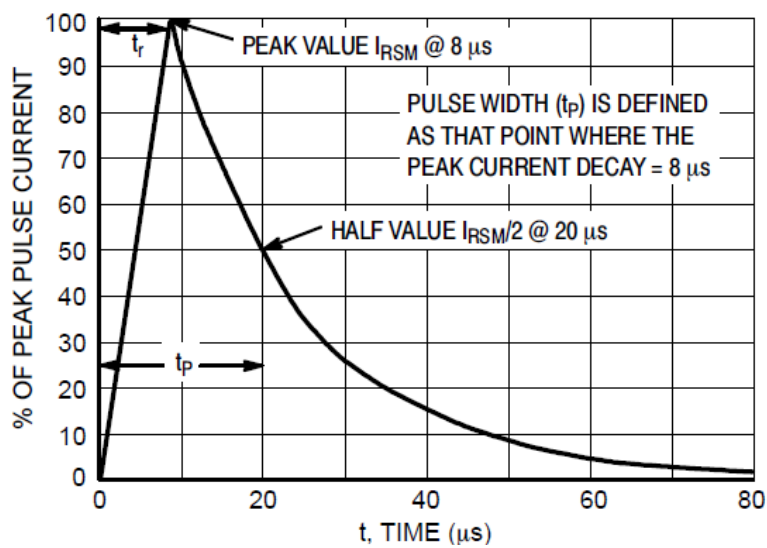
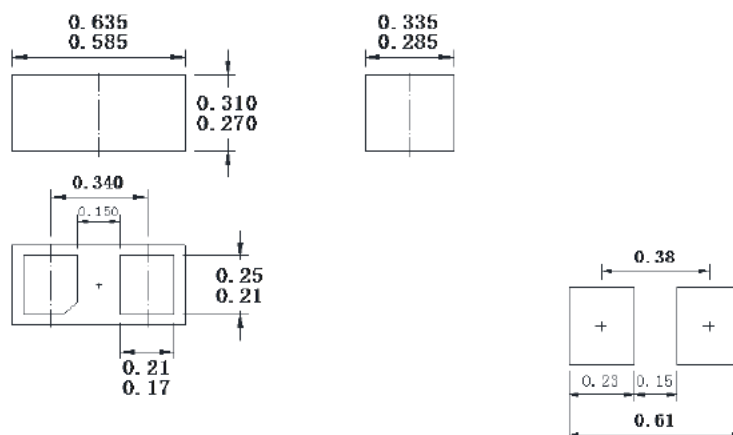


Figure 5.8\*20 us Pulse Waveform

**DFN10603-D Package Outline Dimensions**

DIMENSION OUTLINE:

Unit:mm



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