



## SSCE12V11D3

Low-Capacitance Uni-directional TVS Diodes for ESD Protection

### ● Description

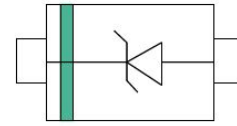
The SSCE12V11D3 is designed with AF Punch-Through process TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed, VGA, DVI, SDI and other high speed line applications.

It has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), and EFT (electrical fast transients).

### ● Feature

- ◇ Peak Power Dissipation—150 W(8 x 20 us Waveform)
- ◇ Working Voltage:12V
- ◇ Protects I/O Port
- ◇ Meets MSL 1 Requirements
- ◇ ROHS compliant
- ◇ AF Punch-Through TVS Process technology

### ● PIN configuration



Top view

### ● Applications

- ◇ High Speed Line:USB1.0/2.0,VGA,DVI,SDI
- ◇ Serial and Parallel Ports
- ◇ Notebooks,Desktops,Servers
- ◇ Projection TV
- ◇ Cellular handsets and accessories
- ◇ Portable instrumentation
- ◇ Peripherals

### ● Mechanical data

- ◇ Lead finish:100%matte Sn(Tin)
- ◇ Mounting position:Any
- ◇ Qualified max reflow temperature:260°C
- ◇ Device meets MSL 1 requirements
- ◇ Pure tin plating:7~17 um
- ◇ Pin flatness:≤3mil

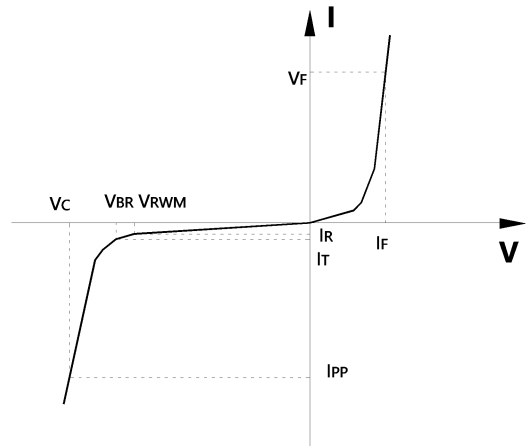
### ● Protection solution to meet

- ◇ IEC61000-4-2(ESD)±30kV(air),±25kV(contact)
- ◇ IEC61000-4-4(EFT)40A(5/50ns)



## ● Electronic Parameter

Symbol	Parameter
$V_{RWM}$	Working Peak Reverse Voltage
$V_{PT}$	Punch-Through Voltage@ $I_{PT}$
$V_{SB}$	Snap-Back Voltage@ $I_{SB}$
$V_C$	Clamping Voltage @ $I_{PP}$
$I_T$	Test Current
$I_{RM}$	Leakage current at $V_{RWM}$
$I_{PP}$	Peak pulse current
$C_O$	Off-state Capacitance
$C_J$	Junction Capacitance



## ● Absolute maximum rating@TA=25°C

Symbol	Parameter	Value	Units
$P_{PP}$	Peak Pulse Power( $t_p=8/20\mu s$ waveform)	150	Watts
	ESD Rating per IEC61000-4-2:		
	Contact	25	KV
	Air	30	KV
$T_L$	Lead Soldering Temperature	260(10 sec.)	°C
$T_J$	Operating Temperature Range	-55~150	°C
$T_{STG}$	Storage Temperature Range	-55~150	°C
$T_L$	Lead Solder Temperature—Maximum(10 Second Duration)	260	°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@TA=25°C

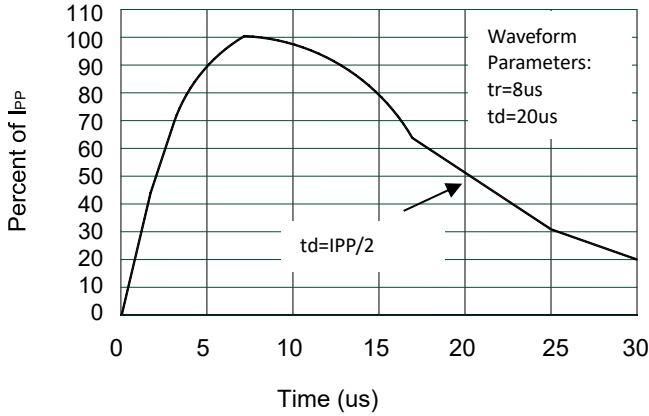
Device	$V_{RWM}$	$V_{BR}$		$I_R@50\text{ mA}$	$V_C$	Capacitance
		(Volts)		( $\mu A$ )	@1 A	@ $V_R=20V, 1\text{ MHz}(pF)$
	(V)	Typ	Max	Typ	(V)	Typ
SSCE12V11D3	12	13.3		1	18	75

Junction capacitance is measured in  $V_R=0V, F=1\text{MHz}$

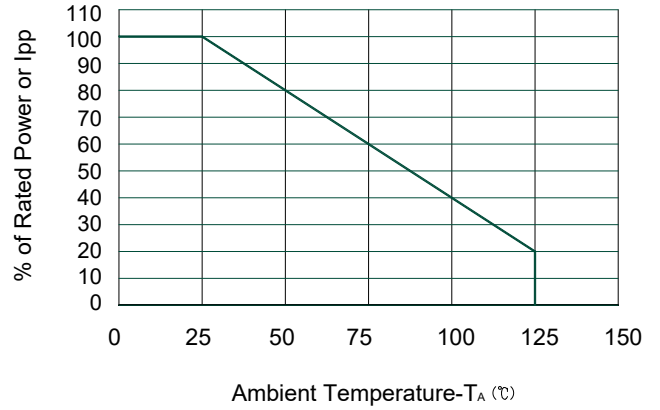


# SSCE12V11D3

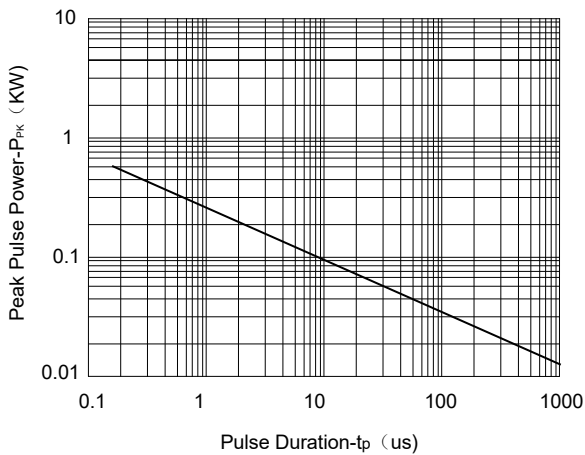
## ● Typical Performance Characteristics



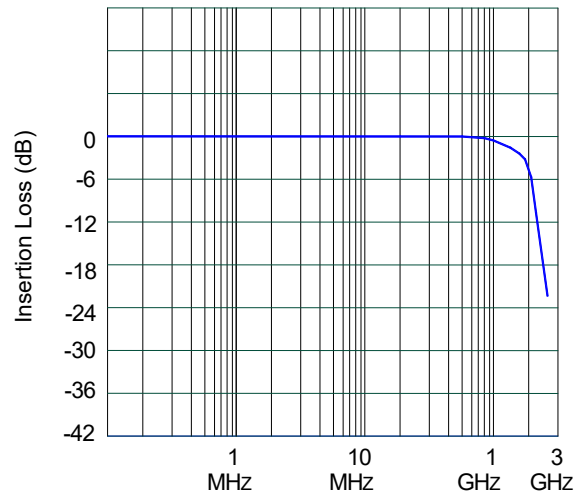
Pulse Waveform



Power Derating Curve



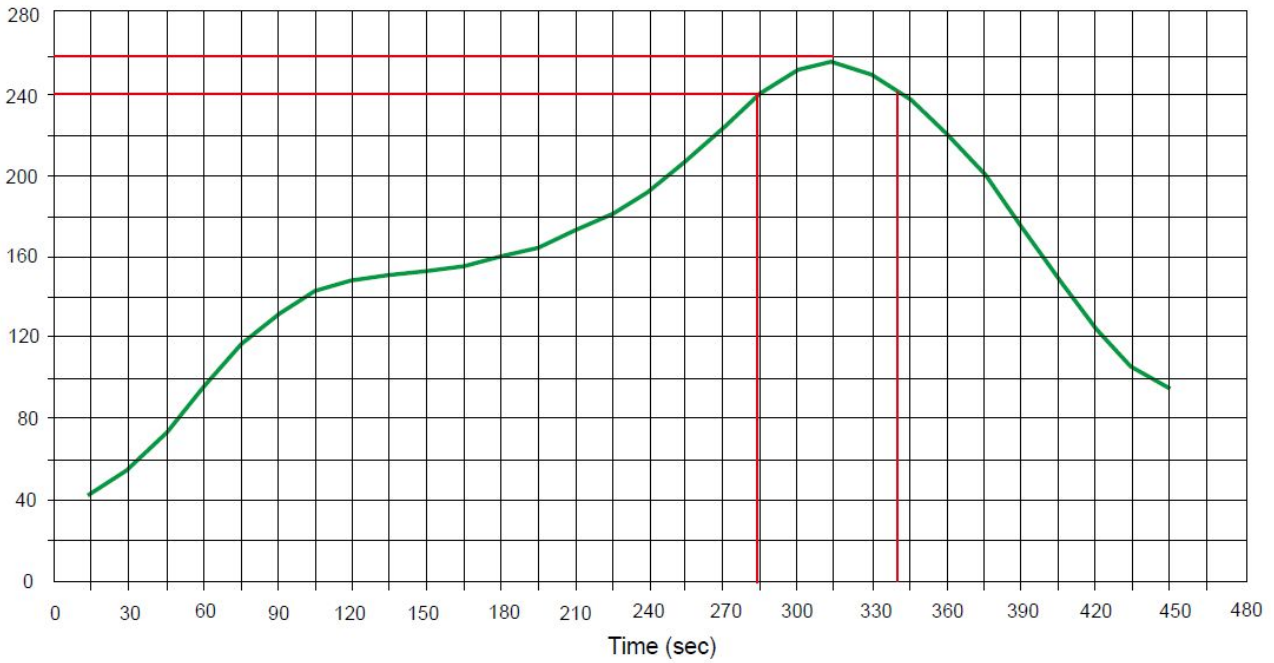
Non-Repetitive Peak Pulse Power vs. Pulse Time





- **Solder Reflow Recommendation**

Peak Temp=257°C,Ramp Rate=0.802deg.°C/sec





# SSCE12V11D3

## ● Package Information

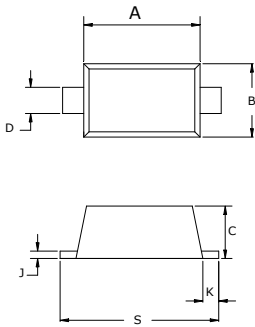
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE12V11D3	SOD-523	3000	7 Inch

### Mechanical Data

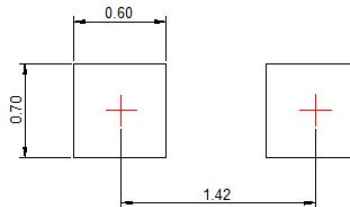
Case:SOD-523

Case Material:Molded Plastic.UL Flammability



DIM	Millimeters	
	Min	Max
A	1.10	1.30
B	0.75	0.85
C	0.51	0.70
D	0.25	0.35
J	0.08	0.15
K	0.15	0.25
S	1.50	1.70

### Recommended Pad outline





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