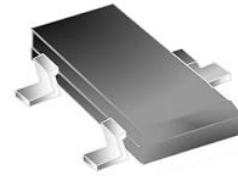


## 1. Features

- Ultra Low Capacitance: 0.4pF(typ.)
- Reverse Working Voltage: 5V
- IEC 61000-4-2 (ESD Air):  $\pm 20\text{kV}$   
IEC 61000-4-2 (ESD Contact):  $\pm 20\text{kV}$   
IEC 61000-4-4 (EFT 5/50ns): 40A  
IEC 61000-4-5 (Lightning 8/20 $\mu\text{s}$ ): 4A

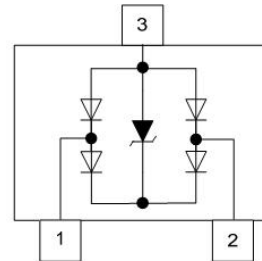
## 2. Pin Description



## 3. Applications

- Smart Phone and Tablet PC
- TV and Set Top Box
- Wearable Devices
- PDA

## 4. Schematic Diagram



## 5. Order Information

Type	Package	Size (mm)	Delivery Form	Delivery Quantity
SCSC12U04	SOT-23	2.90x2.40x1.00	7" T&R	3,000

## 6. Limiting Values( $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

Symbol	Parameter	Conditions	Min	Max	Unit
$V_{\text{ESD}}$	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	$\pm 20$	kV
		IEC 61000-4-2; Air Discharge	-	$\pm 20$	kV
$P_{\text{PP}}$	Peak Pulse Power	$t_P = 8/20\text{ }\mu\text{s}$	-	60	W
$I_{\text{PPM}}$	Rated Peak Pulse Current	$t_P = 8/20\text{ }\mu\text{s}$	-	4	A
$T_A$	Ambient Temperature Range	-	-55	125	$^{\circ}\text{C}$
$T_{\text{stg}}$	Storage Temperature Range	-	-55	150	$^{\circ}\text{C}$

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

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
$V_{RWM}$	Reverse Working Voltage	$T_A = 25^\circ\text{C}$	-	-	5.0	V
$V_{BR}$	Breakdown Voltage	$I_R = 1\text{mA}$ ; $T_A = 25^\circ\text{C}$	7.0	8.0	9.0	V
$I_R$	Reverse Leakage Current	$V_{RWM} = 5\text{V}$ ; $T_A = 25^\circ\text{C}$	-	-	0.1	$\mu\text{A}$
$V_C$	Clamping Voltage	$I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$	-	-	11	V
		$I_{PP}=4\text{A}$ , $t_p=8/20\mu\text{s}$	-	-	15	V
$C_J$	Junction Capacitance	$V_R = 0\text{V}$ , $f = 1\text{MHz}$ Any I/O pin to GND	-	0.4	0.65	pF
		$V_R = 0\text{V}$ , $f = 1\text{MHz}$ Any I/O pin to I/O pin	-	0.25	0.40	

## 8. Typical Characteristics

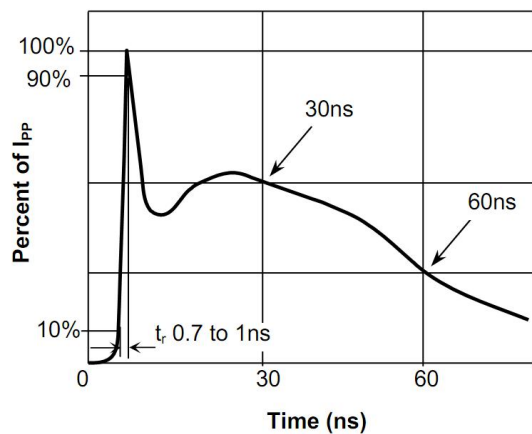


Fig.1 Pulse Waveform-ESD(IEC61000-4-2)

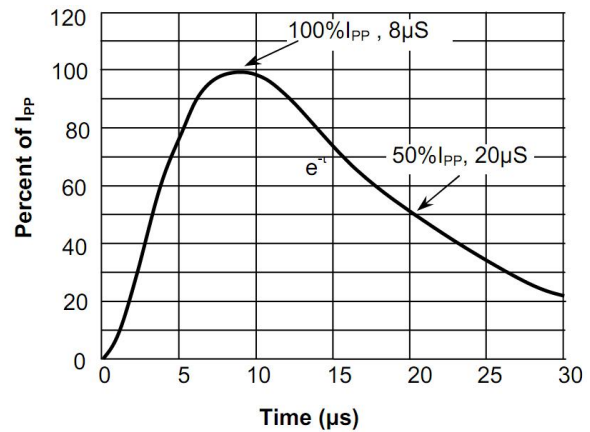


Fig.2 Pulse Waveform-8/20μs

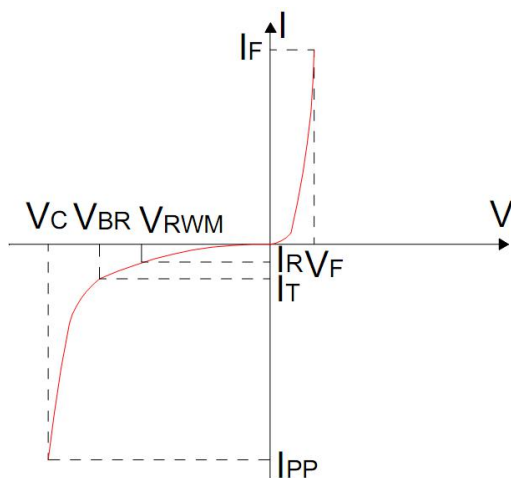


Fig.3 V-I Characteristics for Uni-directional Diode

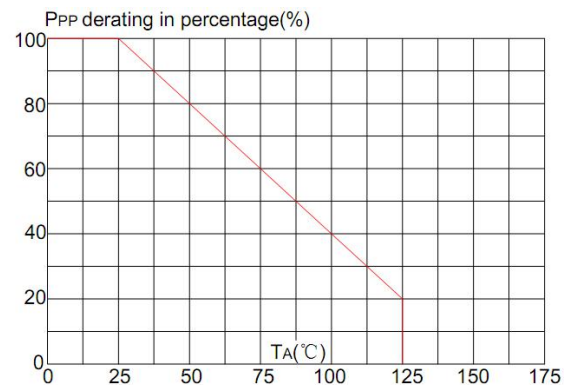
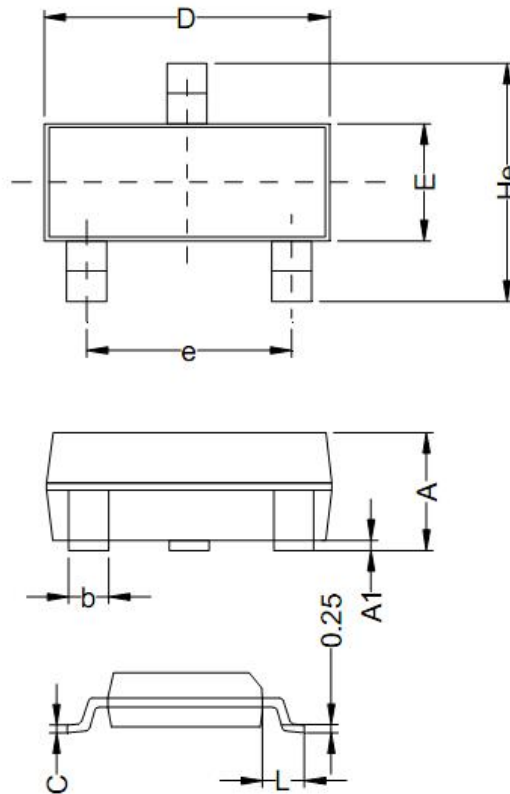


Fig.4 Power Derating Curve

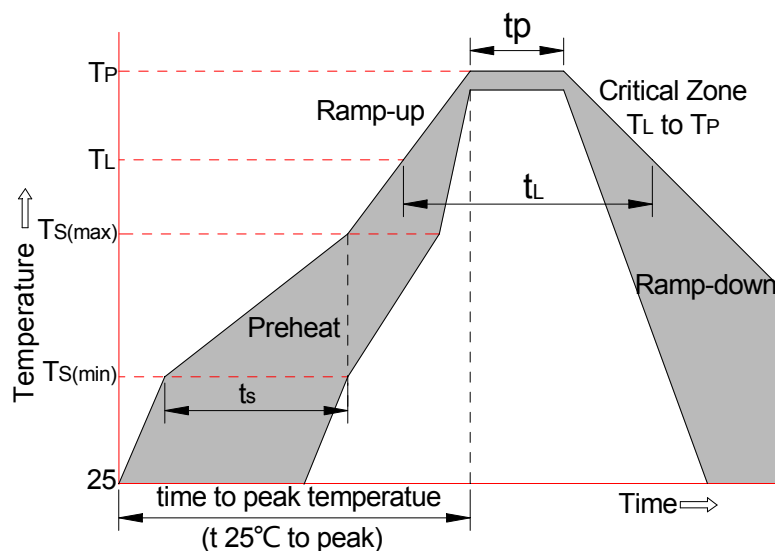
## 9. Package Dimension

**SOT-23 Package Outline**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
<b>A</b>	0.900	1.150	0.035	0.045
<b>A1</b>	0.000	0.100	0.000	0.004
<b>b</b>	0.250	0.325	0.010	0.013
<b>C</b>	0.220	0.250	0.009	0.010
<b>D</b>	2.800	3.000	0.110	0.118
<b>e</b>	1.800	1.900	0.071	0.075
<b>E</b>	1.200	1.400	0.047	0.055
<b>L</b>	0.300	0.500	0.012	0.020
<b>He</b>	2.250	2.550	0.089	0.100

## 10. Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) ( $t_s$ )	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquid us)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C