

## Features

- For Sensitive ESD Protection
- Ultra Low Leakage
- Low Clamping Voltage
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

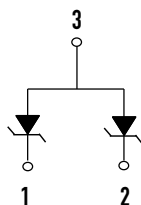
## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +125°C
- Storage Temperature Range: -55°C to +150°C

MCC Part Number	Device Marking
SM3.3H	S33H

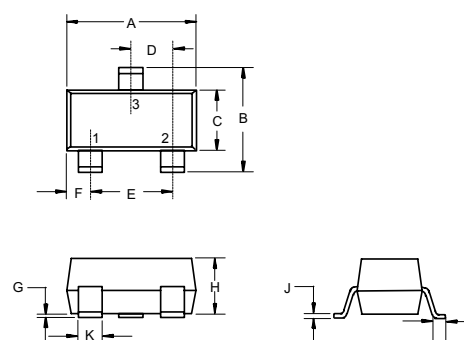
IEC61000-4-2(ESD)	Air Contact	±30KV ±30KV
Peak Pulse Current(8/20μs)	I <sub>PP</sub>	40A
Peak Pulse Power (8/20μs)	P <sub>PK</sub>	500W

## Internal Structure



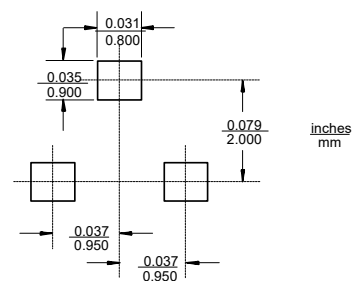
## ESD Protection Device

## SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

## Suggested Solder Pad Layout



**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	$V_{RWM}$				3.3	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	3.5			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V$ , Any I/O Pin to Ground			0.5	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A$ , $t_p = 8/20\mu s$ , Any I/O Pin to Ground			8	V
Clamping Voltage	$V_C$	$I_{PP} = 40A$ , $t_p = 8/20\mu s$ , Any I/O Pin to Ground			12.5	V
Junction Capacitance	$C_J$	$V_R = 0V$ , $f = 1MHz$ , Any I/O Pin to Ground		260		pF

## Curve Characteristics

Fig. 1 - 8 X 20 $\mu$ s Pulse Waveform

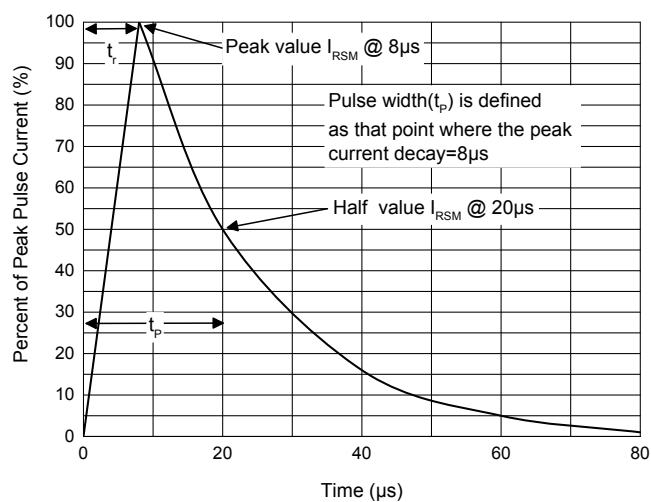


Fig. 2 - Non-Repetitive Peak Pulse Power

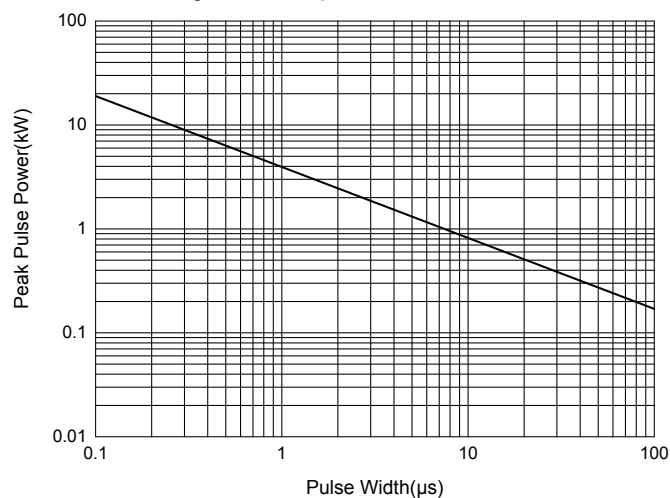


Fig. 3 - Capacitance Characteristics

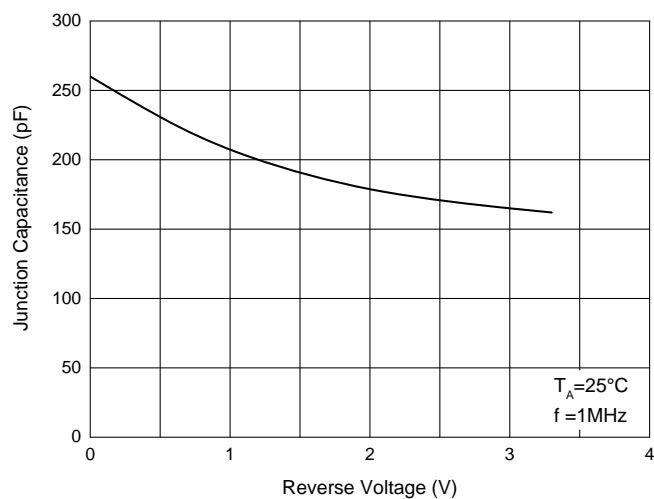


Fig. 4 - Clamping Voltage Characteristics

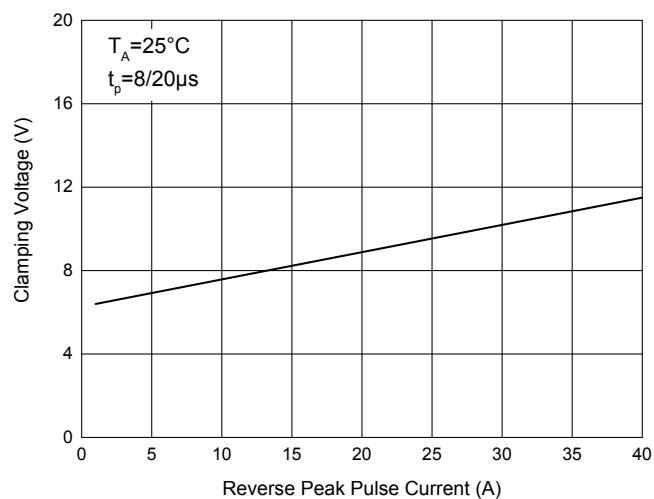
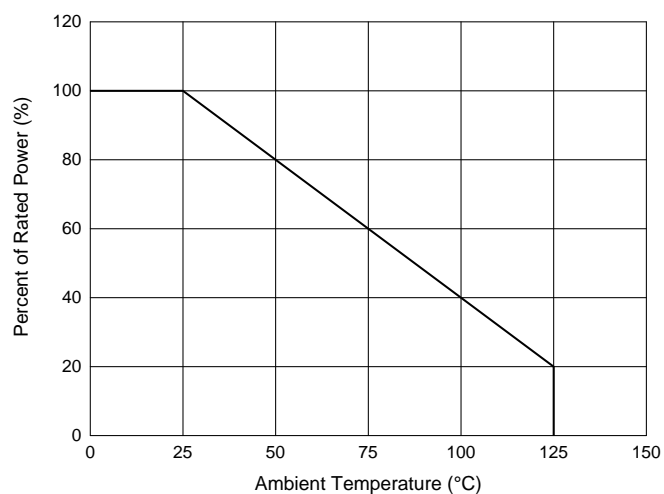


Fig. 5 - Pulse Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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