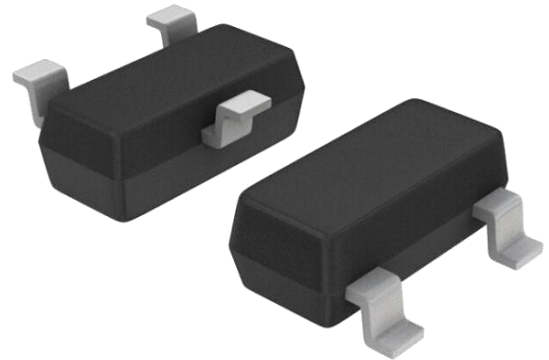




## Features

- 500Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Working Voltages: 5V, 8V, 12V, 15V, 24V and 36V
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2  $\pm 8kV$  contact  $\pm 15kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 24A (8/20 $\mu s$ )



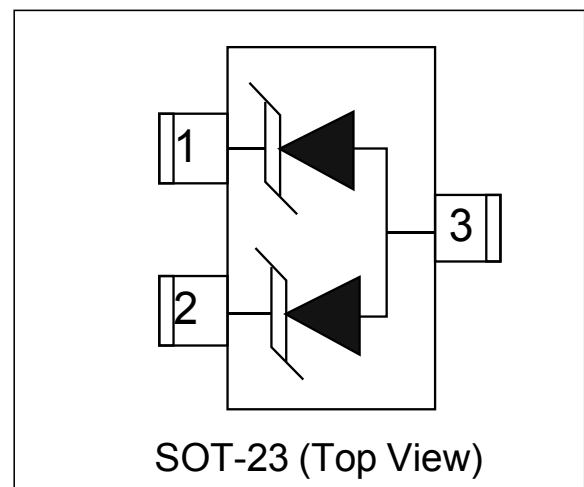
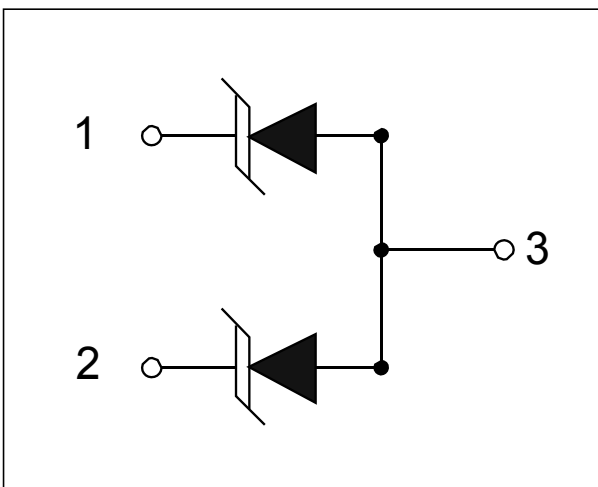
## Applications

- RS-232, RS-422 & RS-423
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Pagers Peripherals

## Mechanical Data

- SOT-23 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

## Schematic & PIN Configuration



## Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{PP}$	500	Watts
Peak Pulse Current ( $t_p = 8/20\mu s$ ) (note1)	$I_{pp}$	24	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	8 15	kV
Lead Soldering Temperature	$T_L$	260(10seconds)	°C
Junction Temperature	$T_J$	-55 to + 150	°C
Storage Temperature	$T_{stg}$	-55 to + 150	°C

## Electrical Characteristics

### PESD05VS2UT

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	6.0			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V, T = 25^\circ C$			1.0	$\mu A$
Peak Pulse Current	$I_{PP}$	$t_p = 8/20\mu s$			45	A
Clamping Voltage	$V_C$	$I_{PP} = 45A, t_p = 8/20\mu s$		15		V
Junction Capacitance	$C_j$	$V_R = 0V, f = 1MHz$		325		pF

### PESD08VS2UT

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				8.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	8.5			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 8V, T = 25^\circ C$			1.0	$\mu A$
Peak Pulse Current	$I_{PP}$	$t_p = 8/20\mu s$			35	A
Clamping Voltage	$V_C$	$I_{PP} = 35A, t_p = 8/20\mu s$		17		V
Junction Capacitance	$C_j$	$V_R = 0V, f = 1MHz$		240		pF

## Electrical Characteristics

### PESD12VS2UT

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				12.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	13.3			V
Reverse Leakage Current	$I_R$	$V_{RWM}=12V, T=25^{\circ}C$			1.0	$\mu A$
Peak Pulse Current	$I_{PP}$	$t_p=8/20\mu s$			23	A
Clamping Voltage	$V_C$	$I_{PP}=23A, t_p=8/20\mu s$		22		V
Junction Capacitance	$C_j$	$V_R=0V, f=1MHz$		150		pF

### PESD15VS2UT

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				15.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	16.5			V
Reverse Leakage Current	$I_R$	$V_{RWM}=15V, T=25^{\circ}C$			1.0	$\mu A$
Peak Pulse Current	$I_{PP}$	$t_p=8/20\mu s$			17	A
Clamping Voltage	$V_C$	$I_{PP}=17A, t_p=8/20\mu s$		28		V
Junction Capacitance	$C_j$	$V_R=0V, f=1MHz$		90		pF

### PESD24VS2UT

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				24	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	26.0			V
Reverse Leakage Current	$I_R$	$V_{RWM}=24V, T=25^{\circ}C$			1.0	$\mu A$
Peak Pulse Current	$I_{PP}$	$t_p=8/20\mu s$			10	A
Clamping Voltage	$V_C$	$I_{PP}=10A, t_p=8/20\mu s$		44		V
Junction Capacitance	$C_j$	$V_R=0V, f=1MHz$		65		pF

## Electrical Characteristics

### PESD36VS2UT

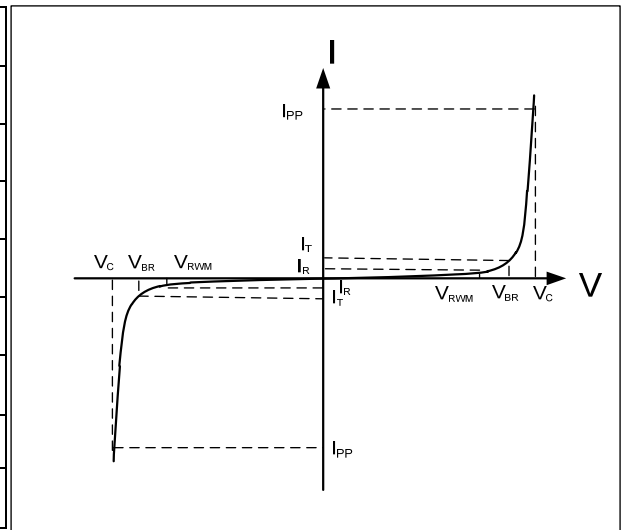
Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				36.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	40.0			V
Reverse Leakage Current	$I_R$	$V_{RWM}=36\text{V}, T=25^\circ\text{C}$			1.0	$\mu\text{A}$
Peak Pulse Current	$I_{PP}$	$t_p=8/20\mu\text{s}$			8	A
Clamping Voltage	$V_C$	$I_{PP}=8\text{A}, t_p=8/20\mu\text{s}$		60		V
Junction Capacitance	$C_j$	$V_R = 0\text{V}, f = 1\text{MHz}$		50		pF

Note1: 8/20 $\mu\text{s}$  pluse waveform.

Note2:  $C_j$  is measured from pin1/pin2 to pin3.

Electrical Parameters (TA = 25°C unless otherwise noted)

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 @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_R$
$I_T$	Test Current



Note: 8/20μs pulse waveform.

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

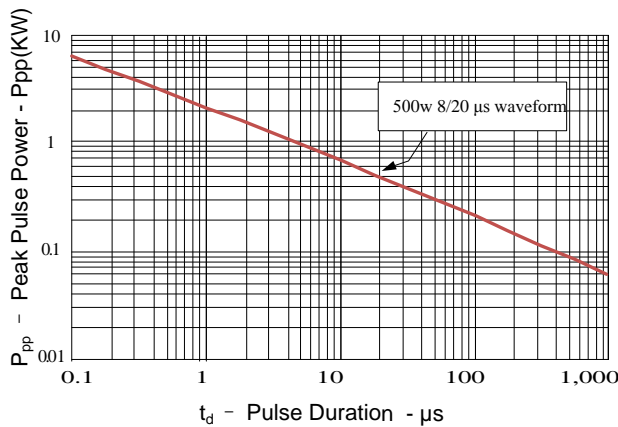


Figure 2: Power Derating Curve

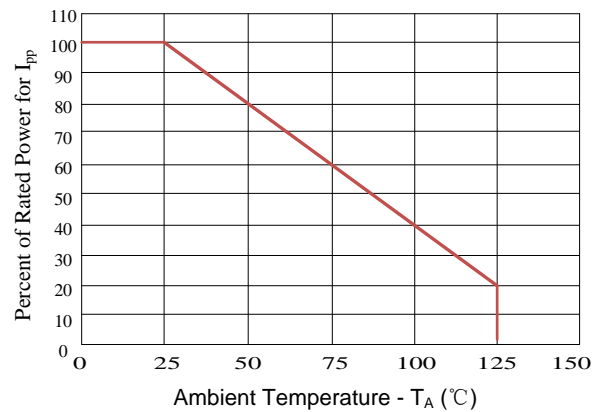


Figure3: Pulse Waveform

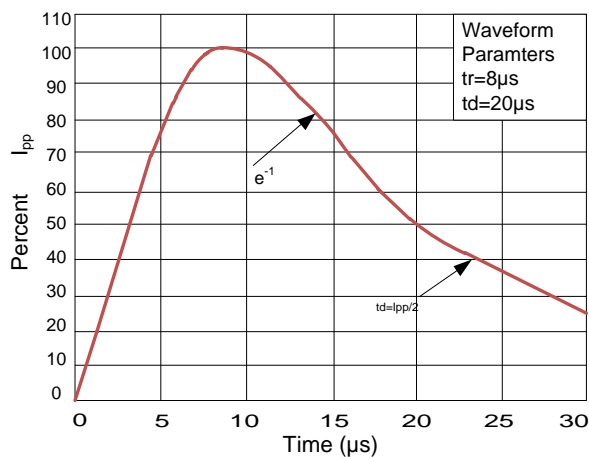
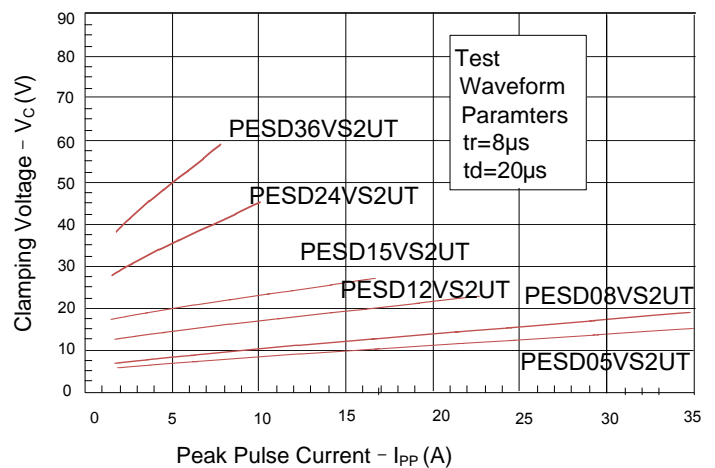
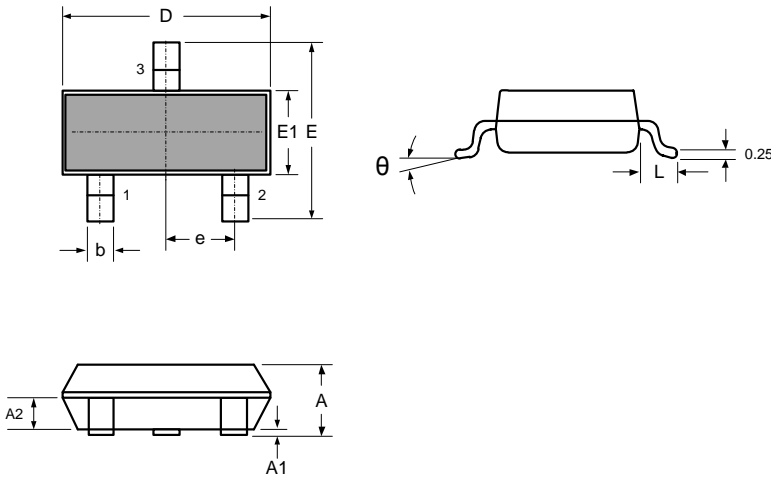


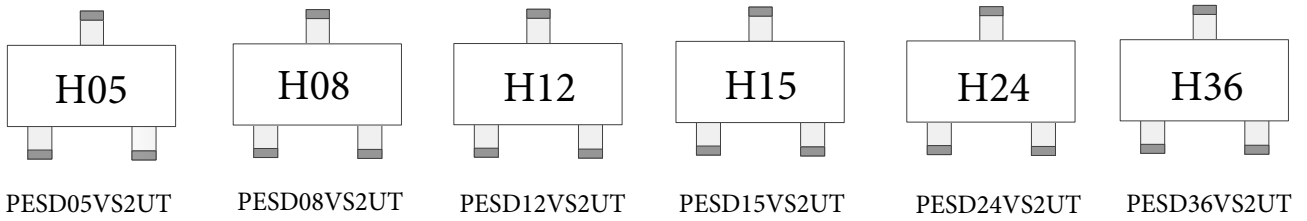
Figure 4: Clamping Voltage vs. Ipp





SYMBOL	DIMENSIONS			
	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
D	2.800	3.000	0.110	0.118
b	0.300	0.500	0.012	0.020
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
e	0.950 BSC		0.037 BSC	
L	0.300	0.500	0.012	0.020
θ	0	8°	0	8°

## Marking



## Ordering Information

Order code	Package	Base qty	Delivery mode
PESDxxVS2UT	SOT-23	3k	Tape and reel