

### Features

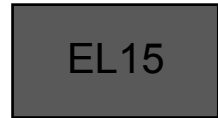
300 Watts peak pulse power ( $t_p = 8/20\mu s$ )  
Unidirectional and unidirectional configurations  
Solid-state silicon-avalanche technology  
Low clamping voltage  
Low leakage current  
IEC 61000-4  $\pm 20kV_{contact} \pm 20kV_{air}$   
IEC 61000-4-4 (EFT) 40A (5/50ns)  
IEC 61000-4-5 (Lightning) 10A (8/20 $\mu s$ )

### Mechanical Data

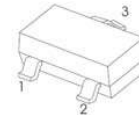
SOT-23 package  
Molding compound flammability rating: UL 94V-0  
Packaging: Tape and Reel  
RoHS/WEEE Compliant

### Applications

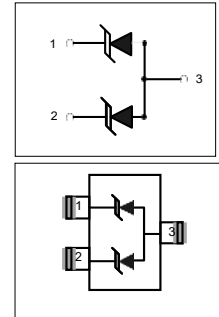
Dataline  
Automatic Teller Machines  
Net works  
Power line



SOT-23



1.BASE  
2.EMITTER  
3.COLLECTOR



Schematic & PIN Configuration

### Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{PP}$	300	Watts
Peak Pulse Current ( $t_p = 8/20\mu s$ ) (note1)	$I_{PP}$	10	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	20 20	kV
Lead Soldering Temperature	$T_L$	260(10seconds)	$^{\circ}C$
Junction Temperature	$T_J$	-55 to + 125	$^{\circ}C$
Storage Temperature	$T_{stg}$	-55 to + 125	$^{\circ}C$

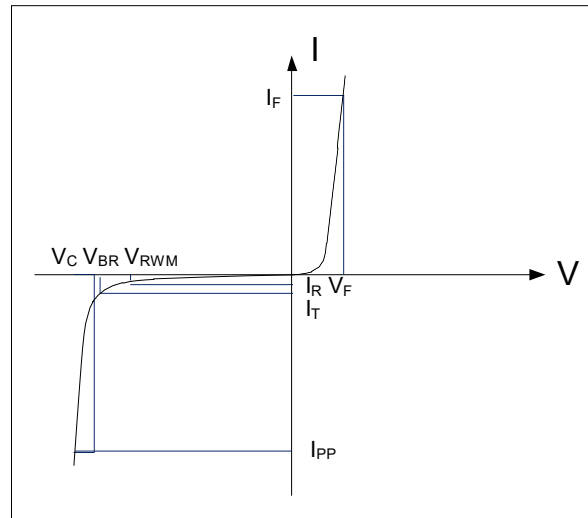
## Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$				16	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	14			V
Reverse Leakage Current	$I_R$	$V_{RWM}=12V, T=25^\circ C$			5	$\mu A$
Peak Pulse Current	$I_{PP}$	$t_p=8/20\mu s$			10	A
Clamping Voltage	$V_C$	$I_{PP}=10A, t_p=8/20\mu s$			30	V
Junction Capacitance	$C_j$	$V_R=0V, f=1MHz$ (Pin 1 to Pin 2)		90		pF

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

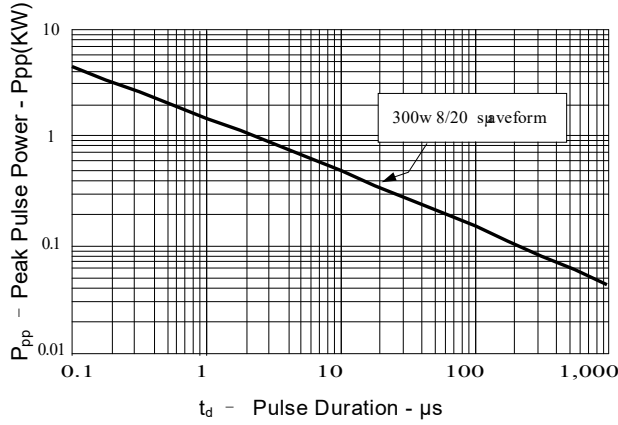
Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current

Note.: 8/20 $\mu s$  pulse waveform.

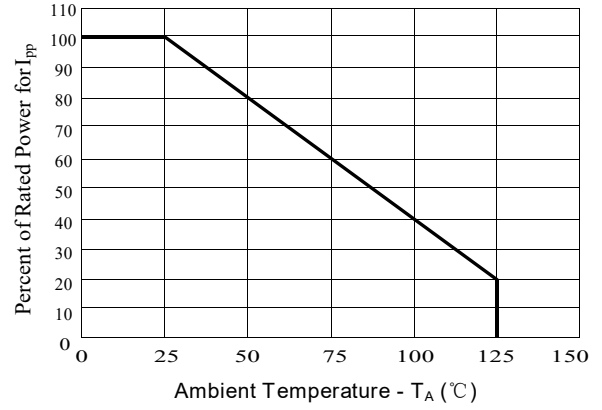


RATING AND CHARACTERISTIC CURVES

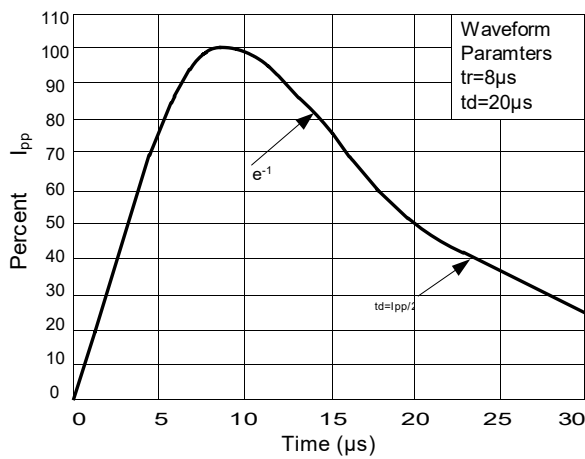
**Figure 1: Peak Pulse Power vs. Pulse Time**



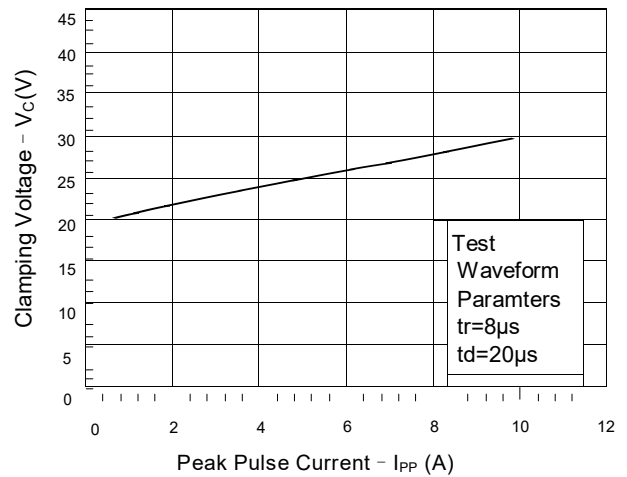
**Figure 2: Power Derating Curve**



**Figure3: Pulse Waveform**



**Figure 4: Clamping Voltage vs. Ipp**



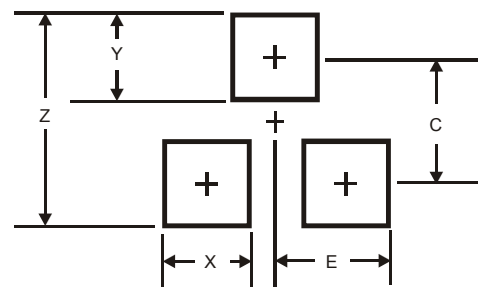
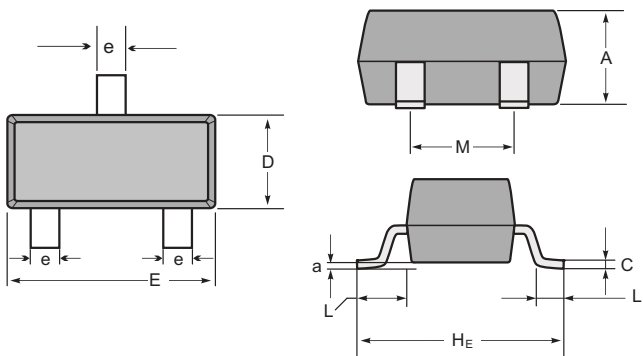
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	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
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C



Package Dimensions & Suggested Pad Layout

SOT23

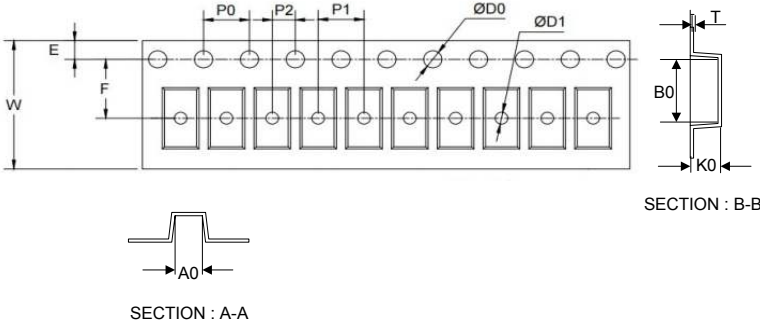
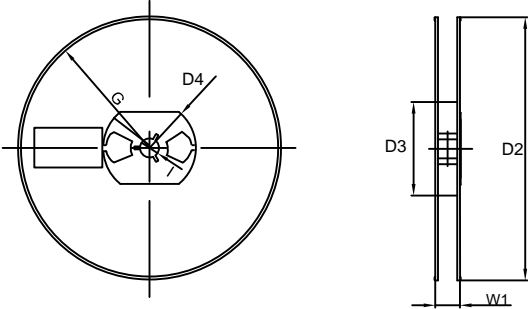


SOT-23 mechanical data

UNIT	A	C	D	E	He	e	M	L	L1	a	
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & reel specification

Tape	Symbol	Dimension (mm)	
	P0	4.00±0.10	
	P1	4.00±0.10	
	P2	2.00±0.10	
	D0	1.55±0.10	
	D1	1.05±0.10	
	E	1.55±0.10	
	F	3.60±0.10	
	W	8.00±0.10	
	A0	3.80±0.20	
	B0	3.25±0.20	
	K0	1.45±0.10	
	T	0.25±0.05	
	<p>7" Reel</p> 	D2	178.0±3.0
		D3	55Min.
		D4	R24.0±3.0
G		R82.0±3.0	
I		13.0±2.0	
W1	11.0±3.0		
Quantity: 3000PCS			