

Features

- ESD Protection of Two Lines
- Low Clamping Voltage
- Working Voltage: 3V, 5V, 12V, 15V, 24V, 32V, 36V
- Low Leakage Current
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

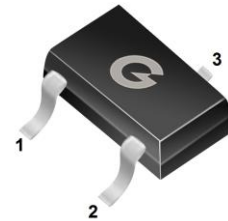
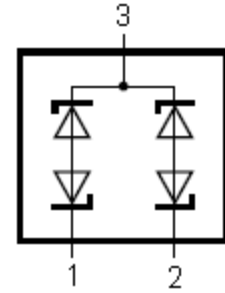
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Typical Applications

- Cell Phone Handsets and Accessories
- Computers and Peripherals
- Audio and Video Equipment
- Communication Systems
- Portable Electronics

Mechanical Data

- Case: SOT-323
- Molding compound, UL flammability classification rating 94V-0.
- Terminals: Tin plated leads, solderable per MIL-STD-202, Method 208.



SOT-323

Ordering Information

Part Number	Package	Shipping	Marking Code
TSOT03BCW	SOT-323	3000 pcs / Tape & Reel	T03B
TSOT05BCW	SOT-323	3000 pcs / Tape & Reel	T05B
TSOT12BCW	SOT-323	3000 pcs / Tape & Reel	T12B
TSOT15BCW	SOT-323	3000 pcs / Tape & Reel	T15B
TSOT24BCW	SOT-323	3000 pcs / Tape & Reel	T24B
TSOT32BCW	SOT-323	3000 pcs / Tape & Reel	T32B
TSOT36BCW	SOT-323	3000 pcs / Tape & Reel	T36B

Maximum Ratings (@T_A=25°C unless otherwise specified)

Characteristic	Symbol	Value	Units
Peak pulse power (t _p = 8/20μs)	P _{PK}	200	W
ESD according to IEC61000-4-2 air discharge	V _{ESD}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	

Thermal Characteristics

Parameter	Symbol	Value	Units
Junction temperature	T_J	125	°C
Storage temperature range	T_{STG}	-55 to +150	°C

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

TSOT03BCW TVS for 3V Lines						
Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}		-	-	3	V
Reverse breakdown voltage	V_{BR}		4.5	-	6.5	V
Reverse leakage current	I_R	$V_R=3\text{V}$	-	-	1	μA
Clamping voltage	V_C	$I_{PP}=15\text{A}$, $t_p=8/20\mu\text{s}$	-	-	12	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$ Pin 1 or 2 to Pin 3	-	-	100	pF
TSOT05BCW TVS for 5V Lines						
Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}		-	-	5	V
Reverse breakdown voltage	V_{BR}	$I_R=1\text{mA}$	6	-	8	V
Reverse leakage current	I_R	$V_R=5\text{V}$	-	-	1	μA
Clamping voltage	V_C	$I_{PP}=12\text{A}$, $t_p=8/20\mu\text{s}$	-	-	13	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$ Pin 1 or 2 to Pin 3	-	-	75	pF
TSOT12BCW TVS for 12V Lines						
Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}		-	-	12	V
Reverse breakdown voltage	V_{BR}	$I_R=1\text{mA}$	13.3	-	16	V
Reverse leakage current	I_R	$V_R=12\text{V}$	-	-	1	μA
Clamping voltage	V_C	$I_{PP}=8\text{A}$, $t_p=8/20\mu\text{s}$	-	-	20	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$ Pin 1 or 2 to Pin 3	-	-	50	pF
TSOT15BCW TVS for 15V Lines						
Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}		-	-	15	V
Reverse breakdown voltage	V_{BR}	$I_R=1\text{mA}$	16.7	-	20	V
Reverse leakage current	I_R	$V_R=15\text{V}$	-	-	1	μA
Clamping voltage	V_C	$I_{PP}=6\text{A}$, $t_p=8/20\mu\text{s}$	-	-	25	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$ Pin 1 or 2 to Pin 3	-	-	40	pF
TSOT24BCW TVS for 24V Lines						
Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}		-	-	24	V
Reverse breakdown voltage	V_{BR}	$I_R=1\text{mA}$	26.7	-	33	V
Reverse leakage current	I_R	$V_R=24\text{V}$	-	-	1	μA
Clamping voltage	V_C	$I_{PP}=3\text{A}$, $t_p=8/20\mu\text{s}$	-	-	50	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$ Pin 1 or 2 to Pin 3	-	-	35	pF

TSOT32BCW TVS for 32V Lines

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}		-	-	32	V
Reverse breakdown voltage	V_{BR}	$I_R = 1mA$	35	-	40	V
Reverse leakage current	I_R	$V_R = 32V$	-	-	1	μA
Clamping voltage	V_C	$I_{PP} = 2.5A$, $t_p = 8/20\mu s$	-	-	70	V
Junction capacitance	C_J	$V_R = 0V$, $f = 1MHz$ Pin 1 or 2 to Pin 3	-	-	30	pF

TSOT36BCW TVS for 36V Lines

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}		-	-	36	V
Reverse breakdown voltage	V_{BR}	$I_R = 1mA$	38	-	44	V
Reverse leakage current	I_R	$V_R = 36V$	-	-	1	μA
Clamping voltage	V_C	$I_{PP} = 2A$, $t_p = 8/20\mu s$	-	-	80	V
Junction capacitance	C_J	$V_R = 0V$, $f = 1MHz$ Pin 1 or 2 to Pin 3	-	-	15	pF

Ratings and Characteristic Curves ($T_A = 25^\circ C$ unless otherwise noted)

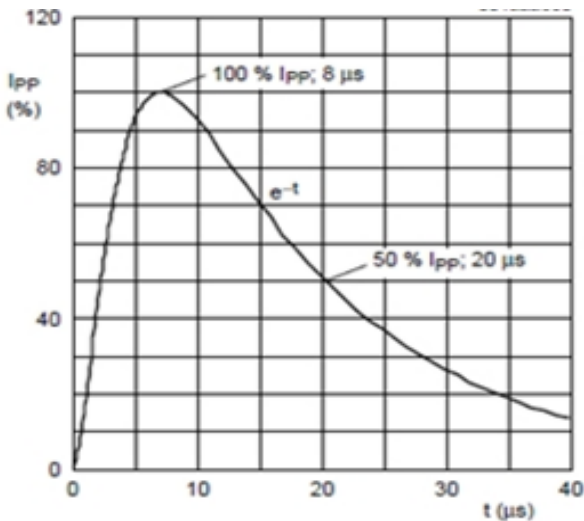


Fig1. 8/20us pulse waveform according to
IEC61000-4-5

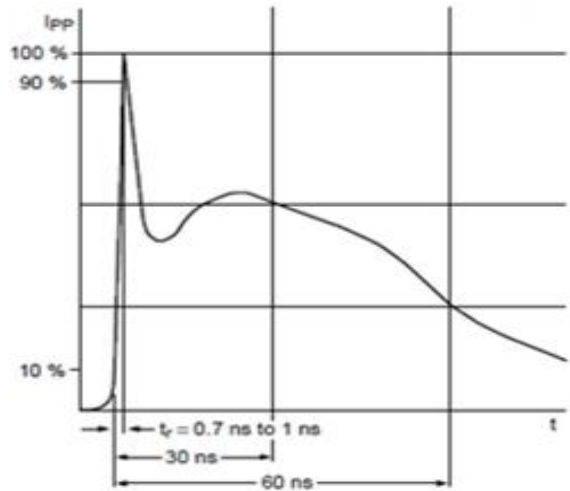
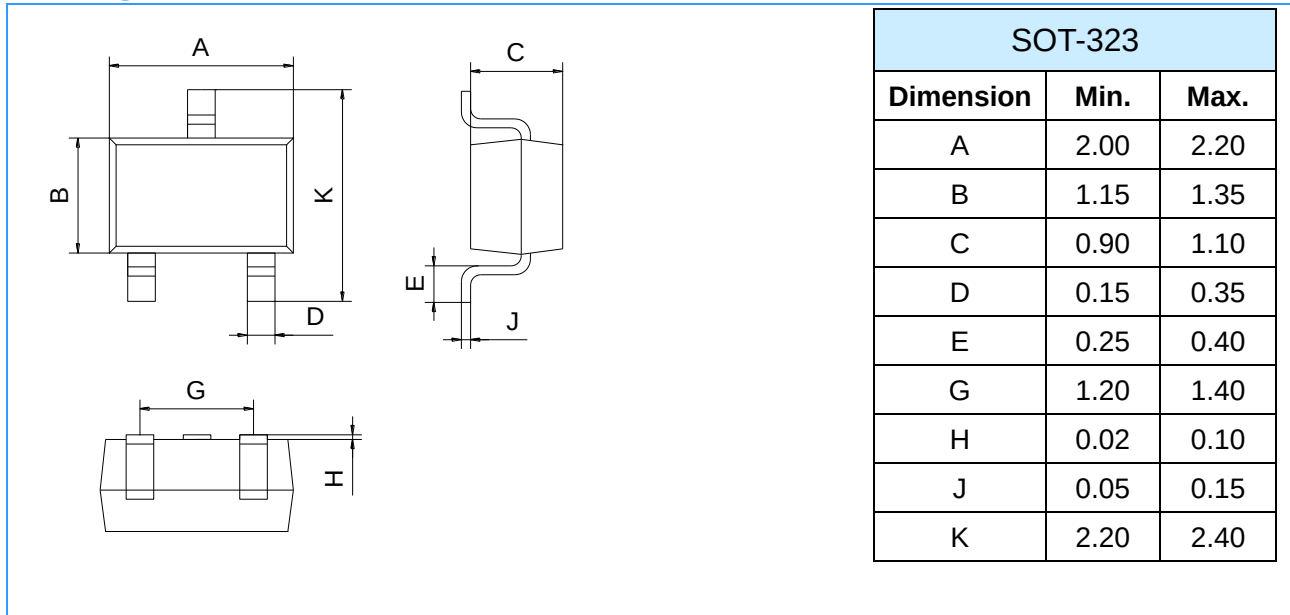
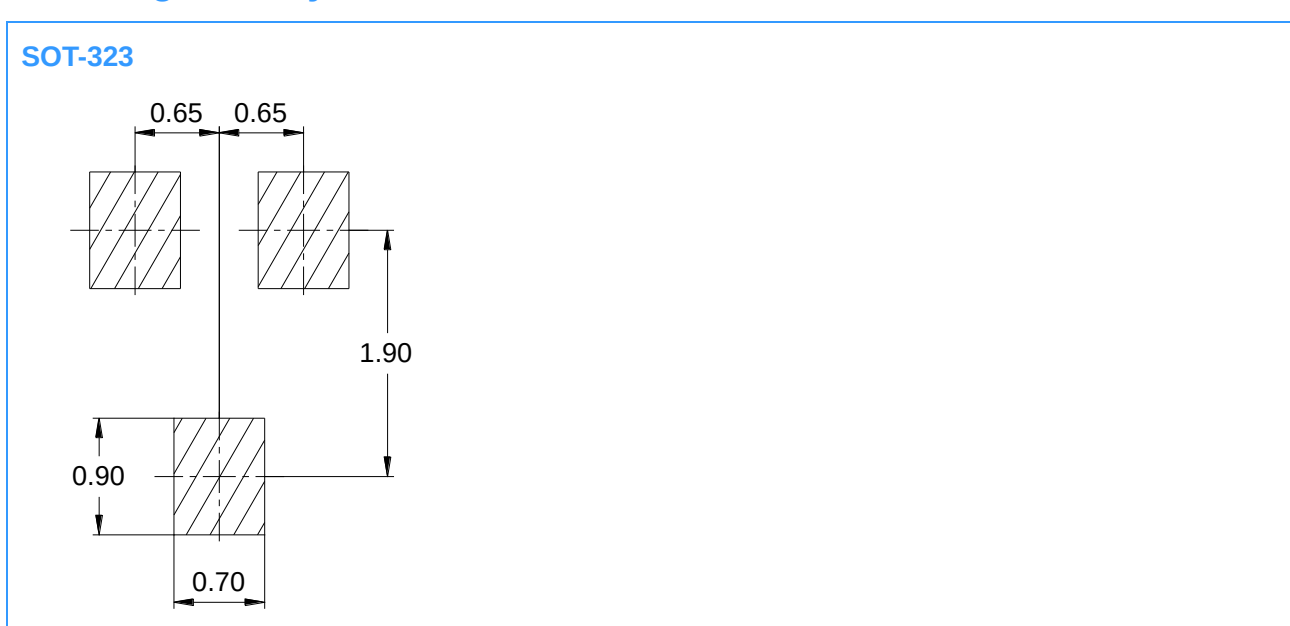


Fig2. ESD pulse waveform according to
IEC61000-4-2

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



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