

Features

- 350 Watts peak pulse power ($t_p=8/20\mu s$), 2-Line of ESD Protection
- Low clamping voltage
- Working voltage: 3.3V, 5V, 12V, 15V, 24V
- Low leakage current
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

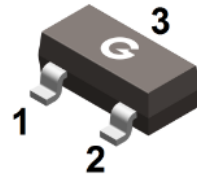
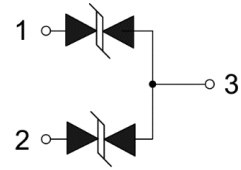
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Typical Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Portable Instrumentation

Mechanical Data

- Case: SOT-23
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Tin plated leads, solderable per MIL-STD-202, Method 208



SOT-23

Ordering Information

Part Number	Package	Shipping	Marking Code
TPSOT03BC	SOT-23	3000 pcs / Tape & Reel	03BC
TPSOT05BC	SOT-23	3000 pcs / Tape & Reel	05BC
TPSOT12BC	SOT-23	3000 pcs / Tape & Reel	12BC
TPSOT15BC	SOT-23	3000 pcs / Tape & Reel	15BC
TPSOT24BC	SOT-23	3000 pcs / Tape & Reel	24BC

Maximum Ratings (@ $T_A=25^{\circ}C$ unless otherwise specified)

Characteristic	Symbol	Value	Units
Peak pulse power according to IEC61000-4-5 ($t_p = 8/20\mu s$)	P_{PK}	350	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
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	454	$^{\circ}C/W$
Junction temperature	T_J	125	$^{\circ}C$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}C$

Electrical Characteristics (@T_A=25°C unless otherwise specified)

TPSOT03BC TVS for 3.3V Lines						
Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V _{RWM}		-	-	3.3	V
Reverse breakdown voltage	V _{BR}		4.5	-	6.5	V
Reverse leakage current	I _R	V _R = 3.3V	-	-	1	uA
Clamping voltage	V _C	I _{PP} =1A, tp=8/20us	-	-	7	V
		I _{PP} =25A, tp=8/20us	-	-	12	
Junction capacitance	C _J	V _R = 0V, f = 1MHz Pin 1 to 3 or Pin 2 to 3	-	-	150	pF
TPSOT05BC 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 = 1mA	6	-	8	V
Reverse leakage current	I _R	V _R = 5V	-	-	1	uA
Clamping voltage	V _C	I _{PP} =5A, tp=8/20us	-	-	9.8	V
		I _{PP} =20A, tp=8/20us	-	-	15	
Junction capacitance	C _J	V _R = 0V, f = 1MHz Pin 1 to 3 or Pin 2 to 3	-	-	125	pF
TPSOT12BC 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 = 1mA	13.3	-	16	V
Reverse leakage current	I _R	V _R = 12V	-	-	1	uA
Clamping voltage	V _C	I _{PP} =5A, tp=8/20us	-	-	19	V
		I _{PP} =15A, tp=8/20us	-	-	25	
Junction capacitance	C _J	V _R = 0V, f = 1MHz Pin 1 to 3 or Pin 2 to 3	-	-	100	pF
TPSOT15BC 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 = 1mA	16.7	-	20	V
Reverse leakage current	I _R	V _R = 15V	-	-	1	uA
Clamping voltage	V _C	I _{PP} =5A, tp=8/20us	-	-	27	V
		I _{PP} =10A, tp=8/20us	-	-	40	
Junction capacitance	C _J	V _R = 0V, f = 1MHz Pin 1 to 3 or Pin 2 to 3	-	32	50	pF
TPSOT24BC 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 = 1mA	26.7	-	33	V
Reverse leakage current	I _R	V _R = 24V	-	-	1	uA
Clamping voltage	V _C	I _{PP} =5A, tp=8/20us	-	-	40	V
		I _{PP} =8A, tp=8/20us	-	-	50	
Junction capacitance	C _J	V _R = 0V, f = 1MHz Pin 1 to 3 or Pin 2 to 3	-	-	50	pF

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

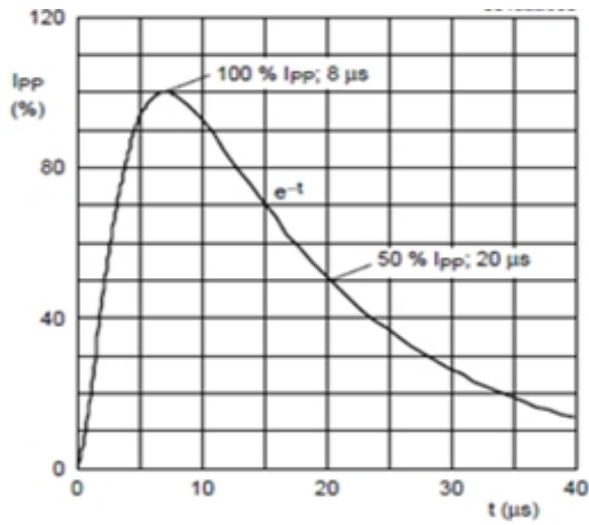


Fig1. 8/20us pulse waveform according to IEC61000-4-5

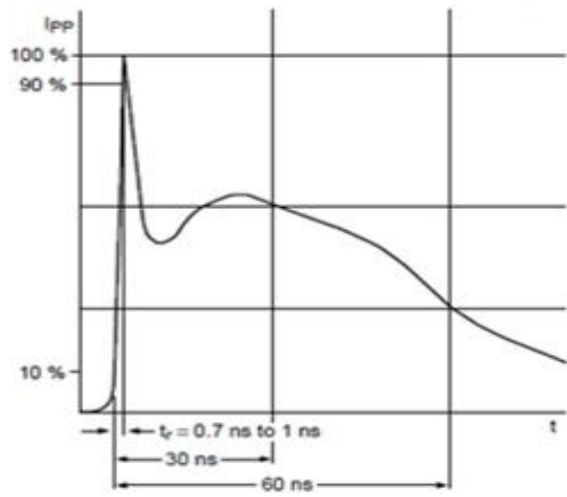
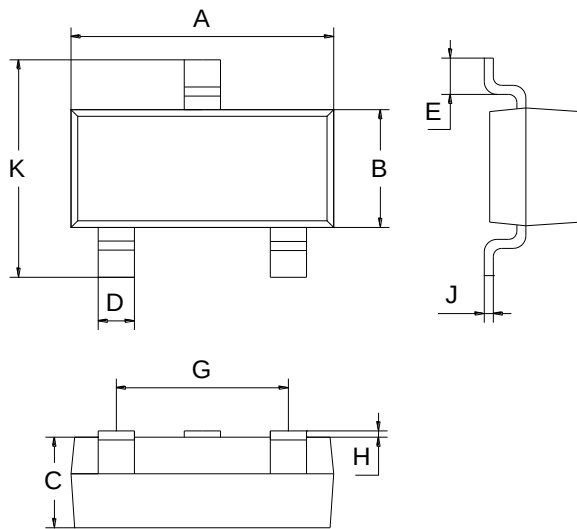


Fig2. ESD pulse waveform according to IEC61000-4-2

Package Outline Dimensions (unit: mm)



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Mounting Pad Layout (unit: mm)

