





# BSS123T

## Electrical Characteristics (T<sub>J</sub>=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	100	-	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =100V, V <sub>GS</sub> =0V	-	-	1	μA
		V <sub>DS</sub> =100V, V <sub>GS</sub> =0V, T <sub>J</sub> =150	-	-	100	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> =0V	-	-	±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250μA	1.0	1.8	2.5	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =200mA	-	2.4	3.4	
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =200mA	-	2.65	3.6	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =200mA, V <sub>GS</sub> =0V	-	-	1.2	V
Gate resistance	R <sub>G</sub>	f=1MHz,	-	5.5	-	
Maximum Body-Diode Continuous Current	I <sub>S</sub>		-	-	200	mA
<b>Dynamic Parameters</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =0V, f=1MHz	-	33	-	pF
Output Capacitance	C <sub>oss</sub>		-	3.5	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	1	-	
<b>Switching Parameters</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =50V, I <sub>D</sub> =1A	-	1.8	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	0.6	-	
Gate-Drain Charge	Q <sub>gd</sub>		-	0.3	-	
Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =1A, di/dt=100A/us	-	6	-	nC
Reverse Recovery Time	t <sub>rr</sub>		-	20	-	ns
Turn-on Delay Time	t <sub>D(on)</sub>	V <sub>GS</sub> =10V, V <sub>DD</sub> =50V, I <sub>D</sub> =1A R <sub>GEN</sub> =3	-	4	-	ns
Turn-on Rise Time	t <sub>r</sub>		-	20	-	
Turn-off Delay Time	t <sub>D(off)</sub>		-	7	-	
Turn-off fall Time	t <sub>f</sub>		-	31	-	

A. Repetitive rating; pulse width limited by max. junction temperature.

B. P<sub>d</sub> is based on max. junction temperature, using junction-case thermal resistance.

C. The value of R<sub>JA</sub> is measured with the dev TJ70.3 129.14 Tmen0 G[d]4( )-5(w5e)4(a)19(s)-6(u)4(r)5(e)]TJETQq0.00008881ns me dev T[d]4( )-5(w5e)4

## Typical Electrical and Thermal Characteristics Diagrams

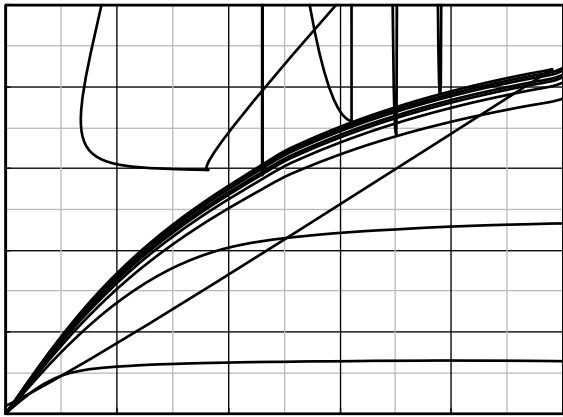


Figure 1. Output Characteristics

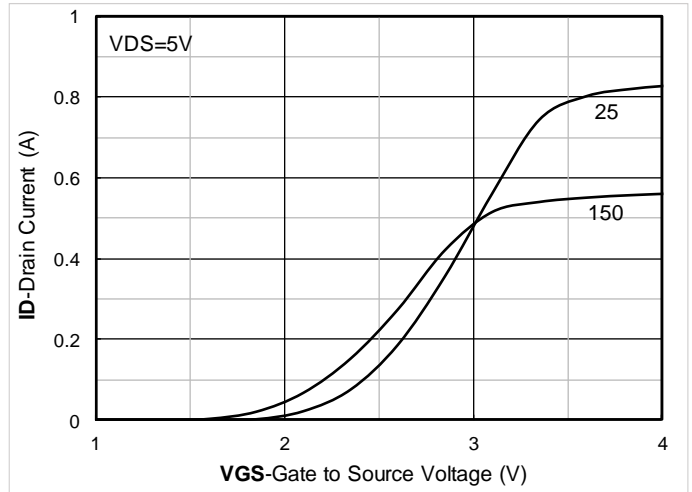


Figure 2. Transfer Characteristics

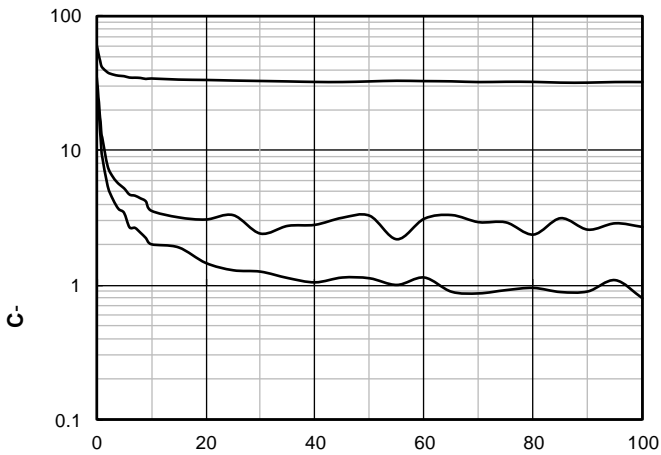


Figure 3. Capacitance Characteristics

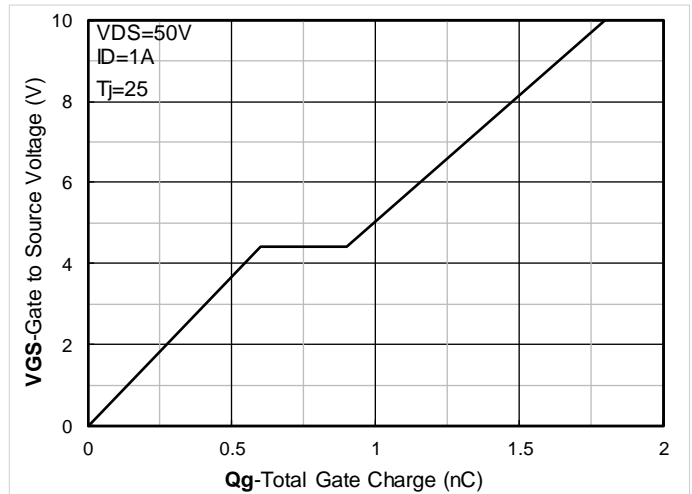


Figure 4. Gate Charge

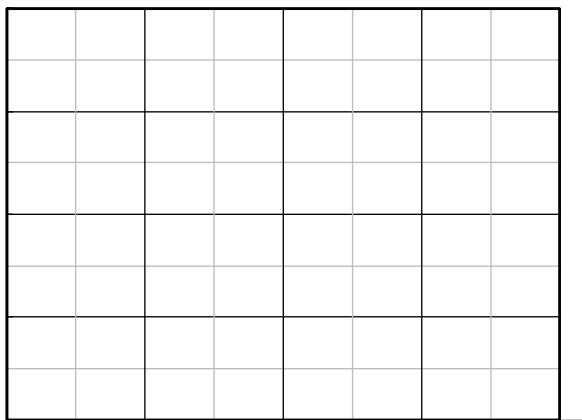


Figure 5. On-Resistance VS Gate to Source Voltage

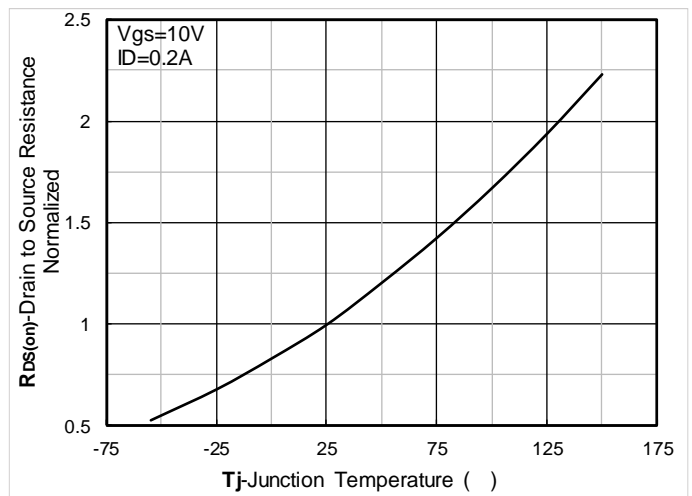


Figure 6. Normalized On-Resistance



Figure 7.  $R_{DS(on)}$  VS Drain Current

Figure 8. Forward characteristics of reverse diode

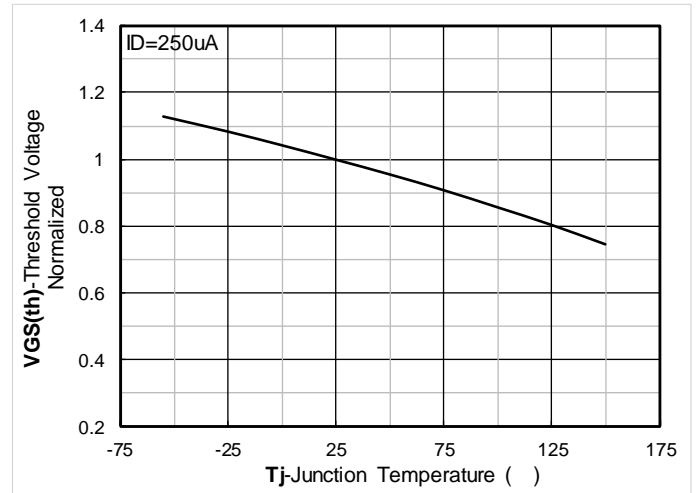
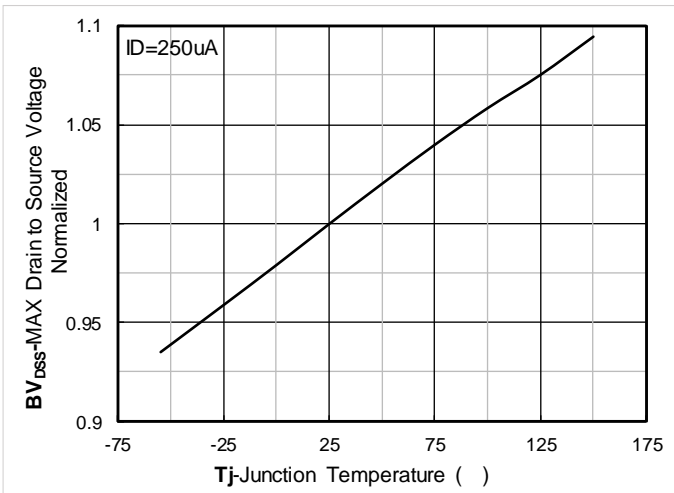


Figure 9. Normalized breakdown voltage

Figure 10. Normalized Threshold voltage

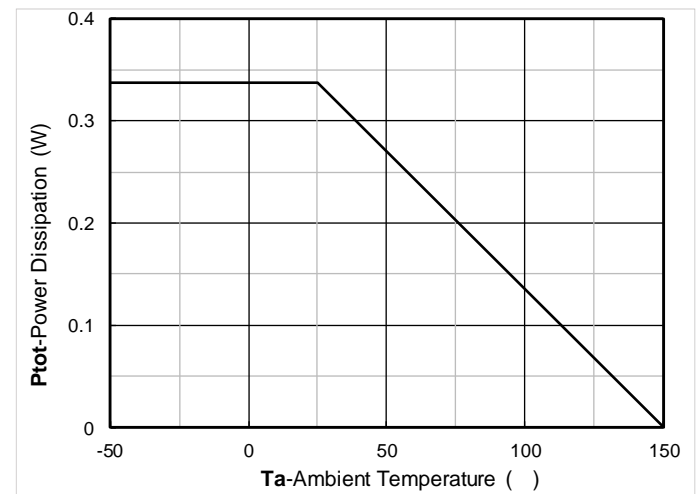
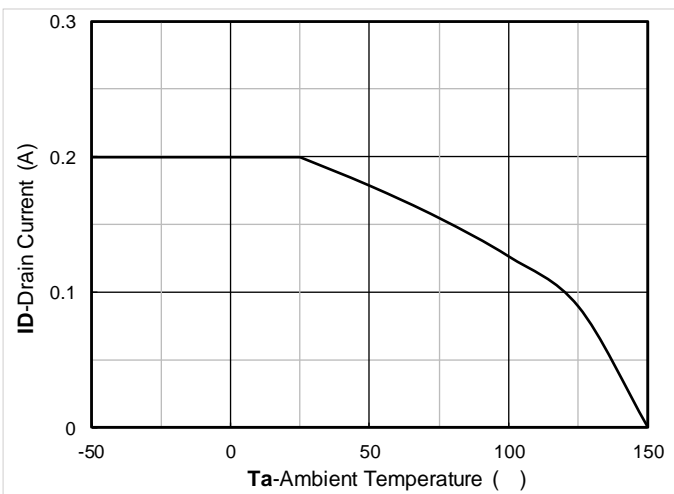


Figure 11.  $I_{DSS} = 0.00008882 T_c + 0.59604$  (A)  $R_{th(jc)} = 0.00008882 T_c + 0.59604$  (°C/W)  $R_{th(ja)} = 0.00008882 T_c + 0.59604$  (°C/W)  $R_{th(jc)} = 0.00008882 T_c + 0.59604$  (°C/W)  $R_{th(ja)} = 0.00008882 T_c + 0.59604$  (°C/W)

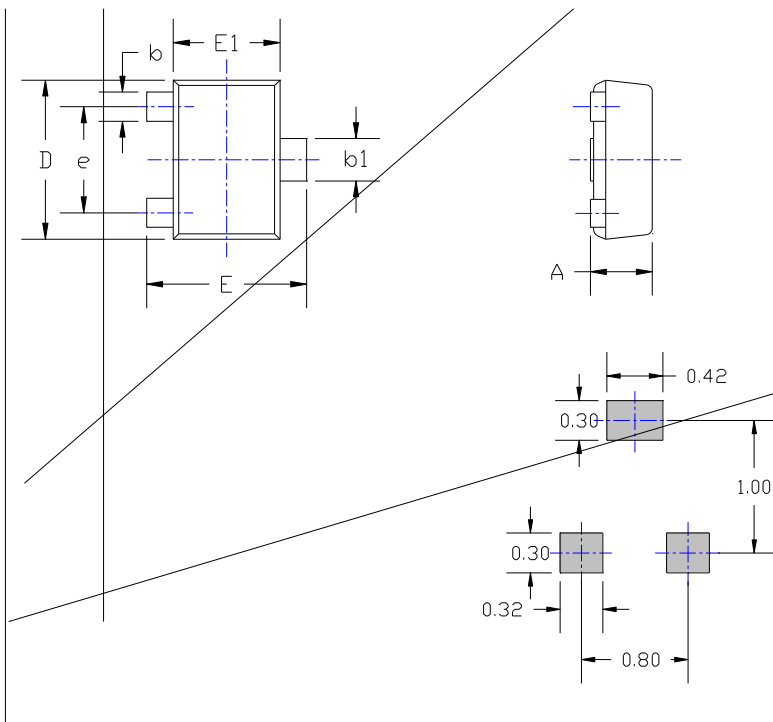
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## SOT-723 Package information



SYMBOL	DIMENSIONS		Mi
	INCHES		
	MIN.	MAX.	
A	0.017	0.022	
A1	0.000	0.002	
b		0.011	
b1			
c			
D			
E			
E1			
e			

NOTE:  
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.  
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.  
3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



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## Disclaimer

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The product listed herein is designed to be used with ordinary electronic equipment or devices, and notmeucTf1 0 0 7t4 ba