





# BSS123T

## Electrical Characteristics ( $T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$	-	-	1	$\mu A$
		$V_{DS}=100V, V_{GS}=0V, T_J=150$	-	-	100	
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=200mA$	-	2.4	3.4	
		$V_{GS}=4.5V, I_D=200mA$	-	2.65	3.6	
Diode Forward Voltage	$V_{SD}$	$I_S=200mA, V_{GS}=0V$	-	-	1.2	V
Gate resistance	$R_G$	$f=1MHz,$	-	5.5	-	
Maximum Body-Diode Continuous Current	$I_S$		-	-	200	mA
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$	-	33	-	$pF$
Output Capacitance	$C_{oss}$		-	3.5	-	
Reverse Transfer Capacitance	$C_{rss}$		-	1	-	
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=10V, V_{DS}=50V, I_D=1A$	-	1.8	-	nC
Gate-Source Charge	$Q_{gs}$		-	0.6	-	
Gate-Drain Charge	$Q_{gd}$		-	0.3	-	
Reverse Recovery Charge	$Q_{rr}$	$I_f=1A, di/dt=100A/us$	-	6	-	nC
Reverse Recovery Time	$t_{rr}$		-	20	-	ns
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=50V, I_D=1A$ $R_{GEN}=3$	-	4	-	ns
Turn-on Rise Time	$t_r$		-	20	-	
Turn-off Delay Time	$t_{D(off)}$		-	7	-	
Turn-off fall Time	$t_f$		-	31	-	

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

B.  $P_d$  is based on max. junction temperature, using junction-case thermal resistance.

C. The value of  $R_{JA}$  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

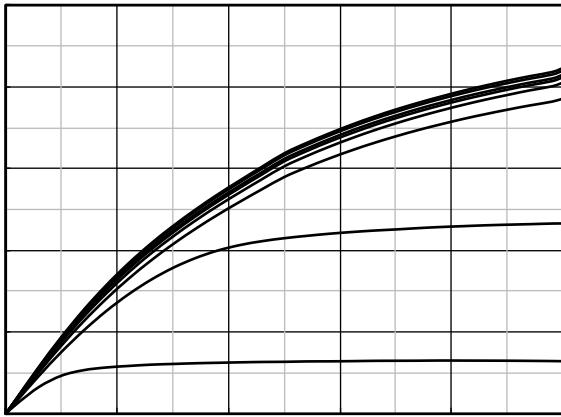


Figure 1. Output Characteristics

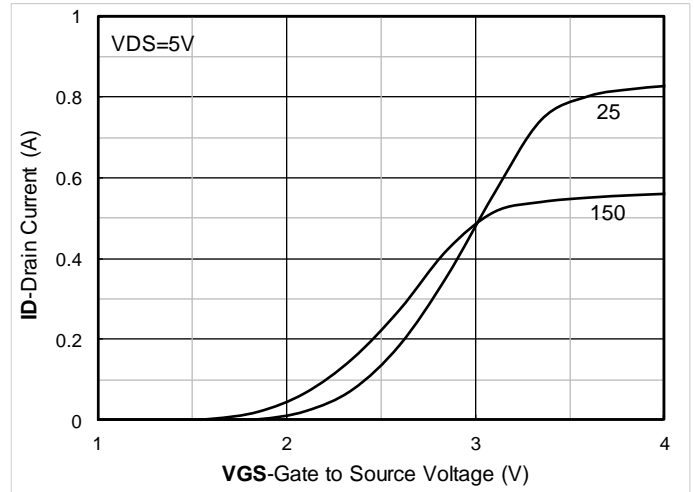


Figure 2. Transfer Characteristics

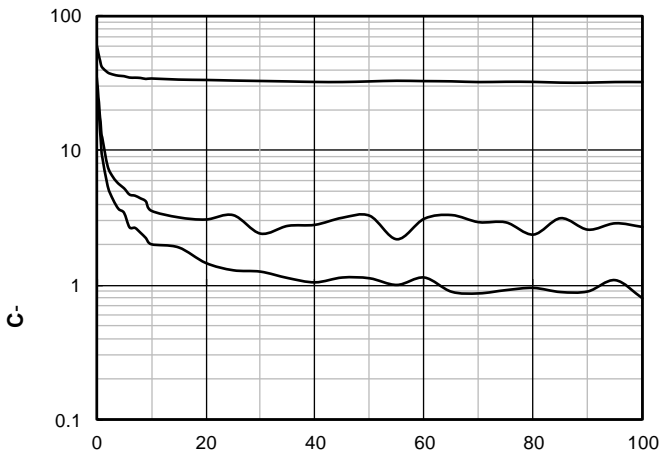


Figure 3. Capacitance Characteristics

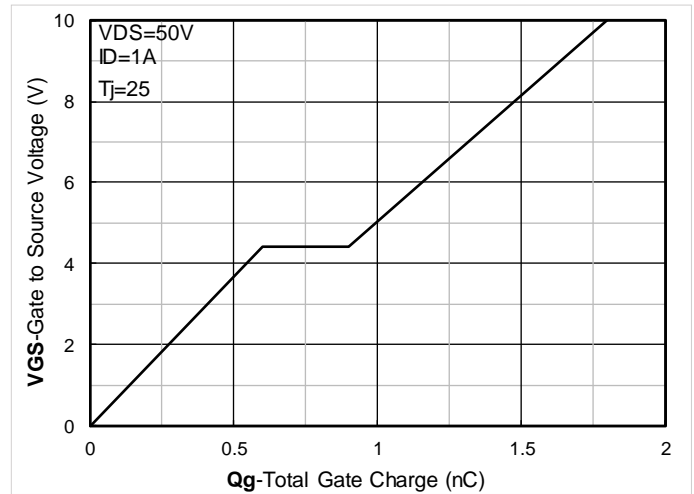


Figure 4. Gate Charge

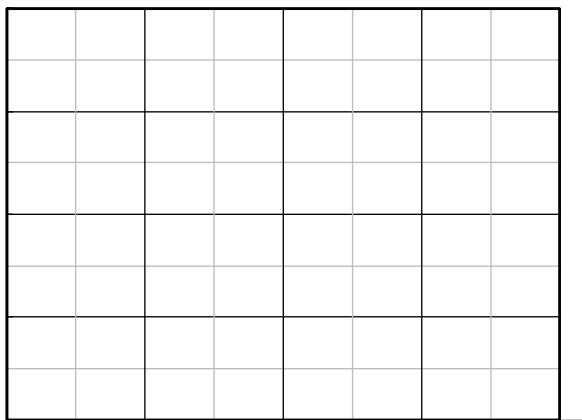


Figure 5. On-Resistance VS Gate to Source Voltage

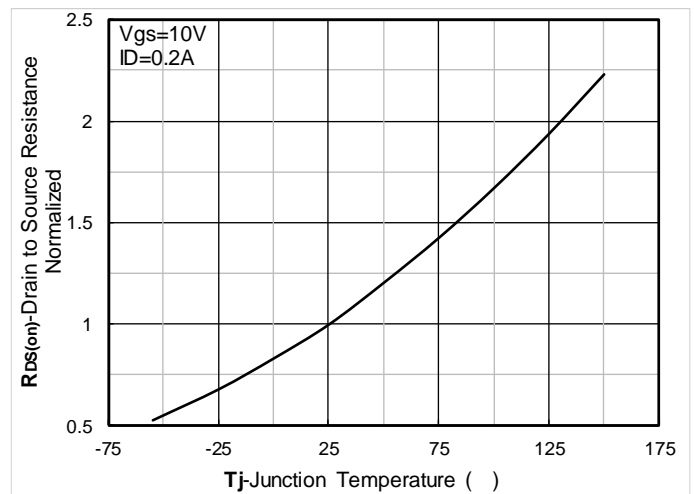


Figure 6. Normalized On-Resistance



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

Figure 8. Forward characteristics of reverse diode

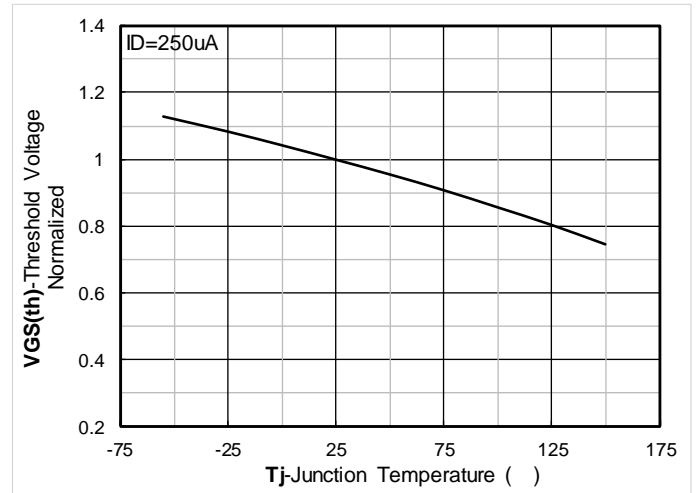
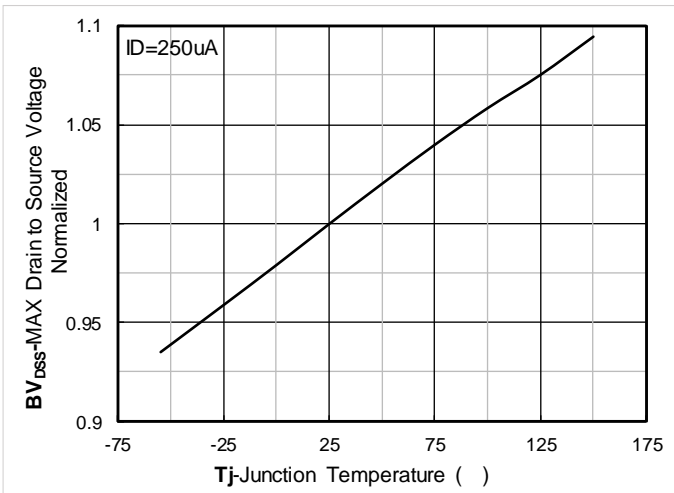


Figure 9. Normalized breakdown voltage

Figure 10. Normalized Threshold voltage

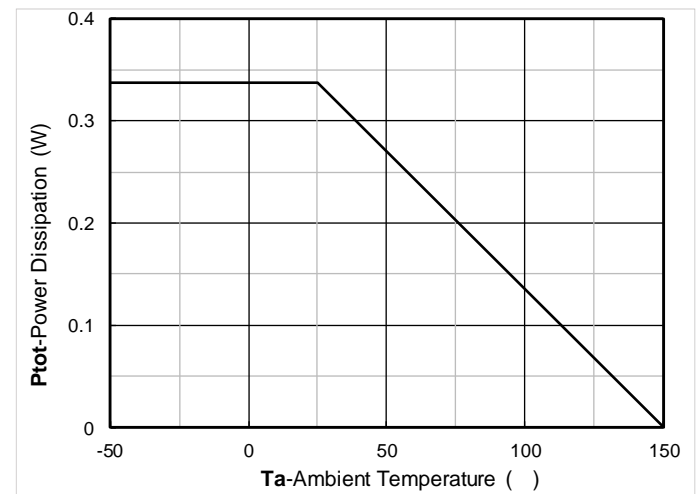
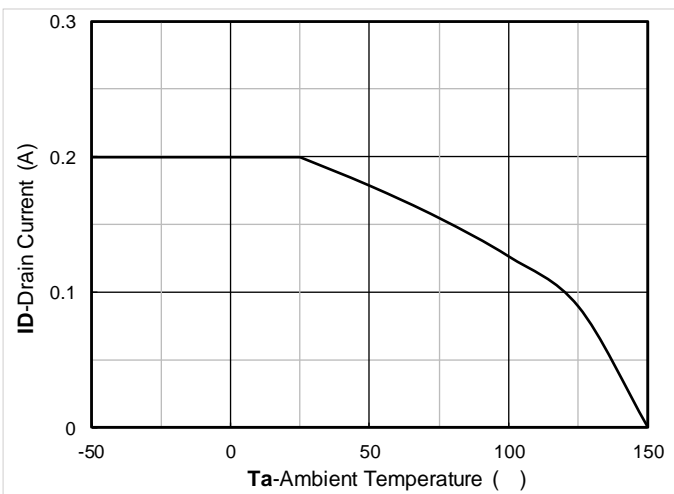


Figure 11. Current diss0 g G -0.00888 Tc[.]TJETQq0.00008882 0 596.04 842.04 reW\*Tm6 g1 0 0 1 133.82 569.1

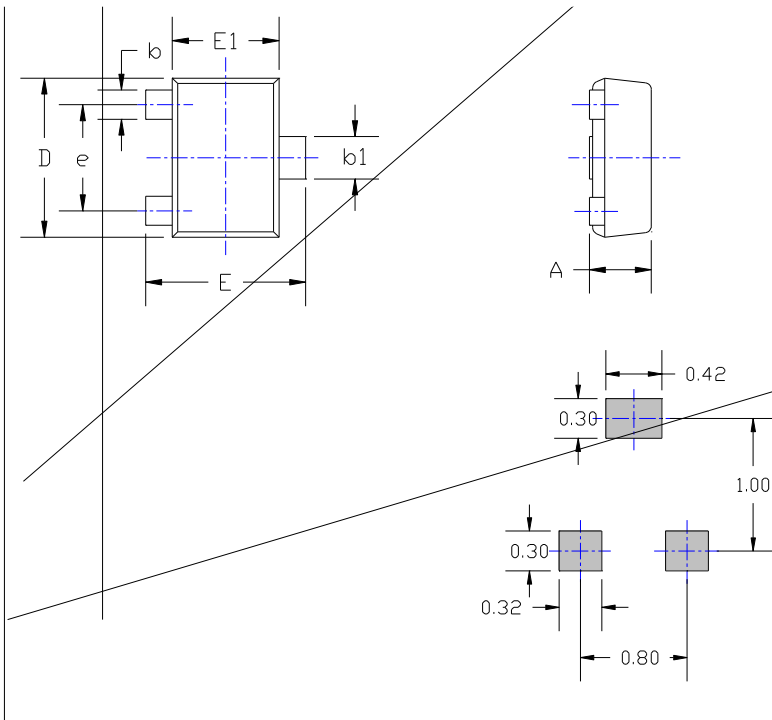
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## SOT-723 Package information



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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