



Description

The BSS123 uses advanced trench technology to provide excellent $R_{DS(ON)}$. This device is suitable for use as a load switch or in PWM applications.

General Features

$V_{DS} = 100V, I_D = 0.17A$

$R_{DS(ON)} < 6 \Omega @ V_{GS} = 10V$

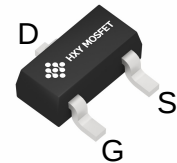
ESD Rating: 1500V HBM

Application

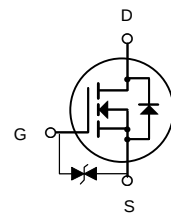
Battery protection

Load switch

Uninterruptible power supply



SOT-23



N-Channel MOSFET

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
BSS123	SOT-23	SA	3000

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current-Continuous	0.17	A
I_{DM}	Drain Current-Pulsed (Note 1)	0.68	A
P_D	Maximum Power Dissipation	0.35	W
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient (Note 2)	350	°C/W



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

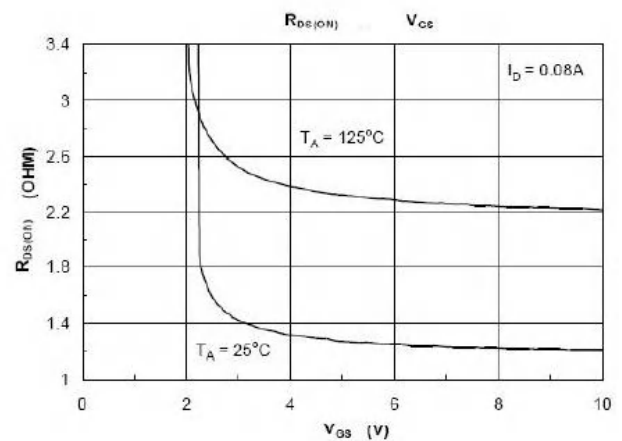
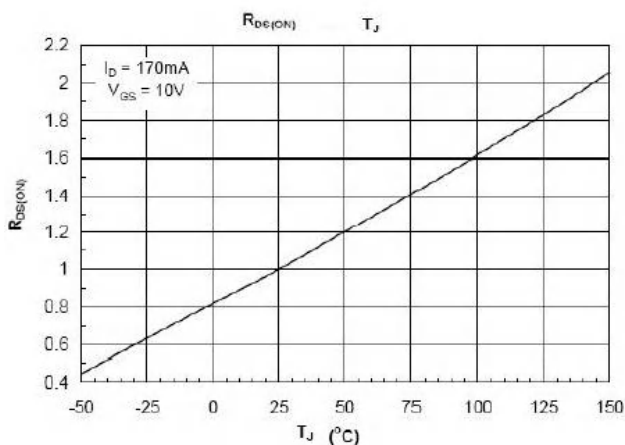
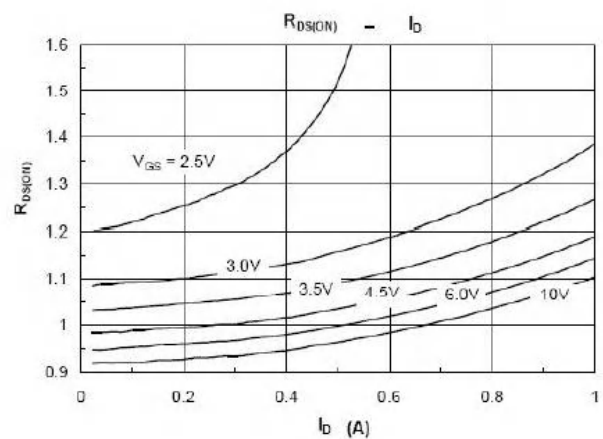
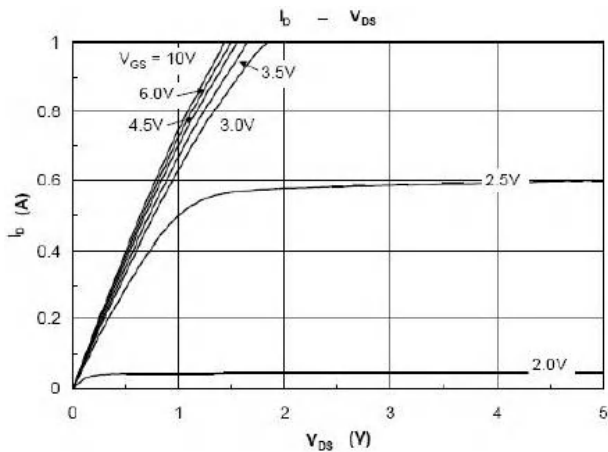
Symbol	Parameter	Test conditions	M n	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-source breakdown voltage	V _{GS} =0, I _D =250μA	100			V
V _{GS(th)}	Gate threshold voltage	V _{DS} =V _{GS} , I _D =250μA	1.5		2.5	V
I _{GSS}	Gate-body leakage current	V _{DS} =0, V _{GS} =±20V			±10	μA
I _{DSS}	Zero gate voltage drain current	V _{DS} =100V, V _{GS} =0V			1	μA
R _{DS(on)}	Drain-source on-resistance ^a	V _{GS} =10V, I _D =0.17A			6.0	Ω
		V _{GS} =4.5V, I _D =0.17A			9.0	Ω
V _{SD}	Diode forward voltage	I _S =0.2A,V _{GS} =0V			1.0	V
Dynamic						
C _{iss}	Input capacitance	V _{DS} =50V, V _{GS} =0V, f=1MHz		30		pF
C _{oss}	Output capacitance			10		
C _{rss}	Reverse transfer capacitance ^b			7		
Switching ^b						
t _{d(on)}	Turn-on delay time	V _{GS} =10V,V _{DS} =50V I _D =200mA, R _{GEN} =6Ω		1.7		nS
t _r	Rise time			9		
t _{d(off)}	Turn-off delay time			17		
t _f	Fall time			7		

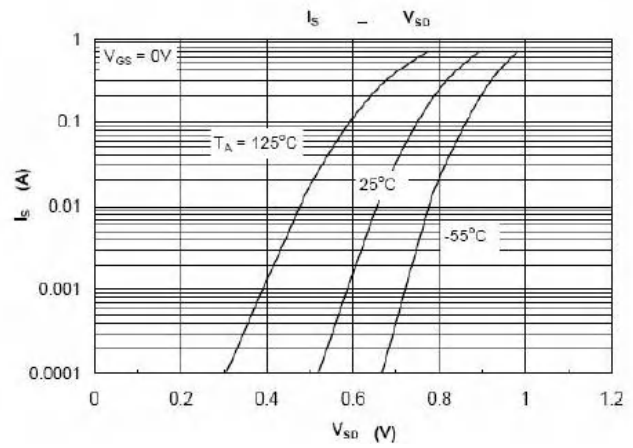
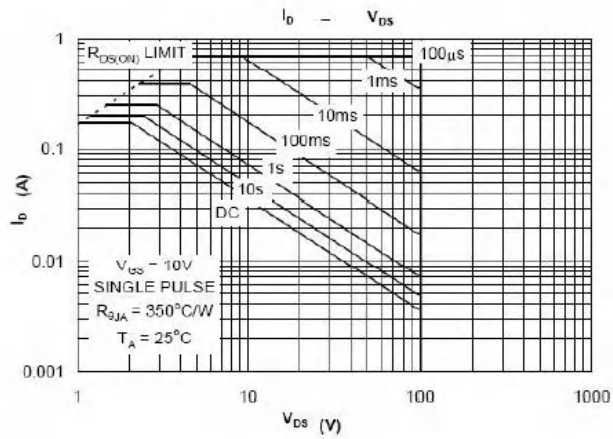
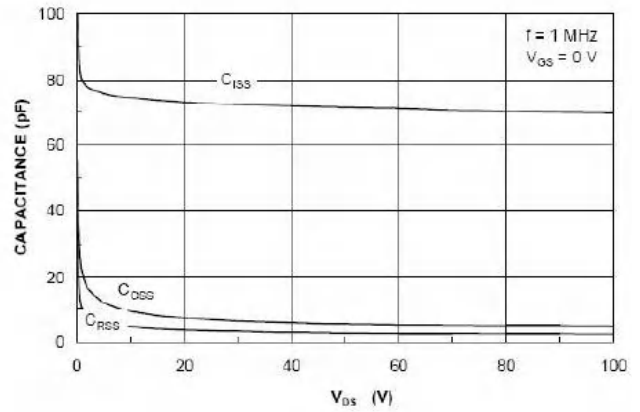
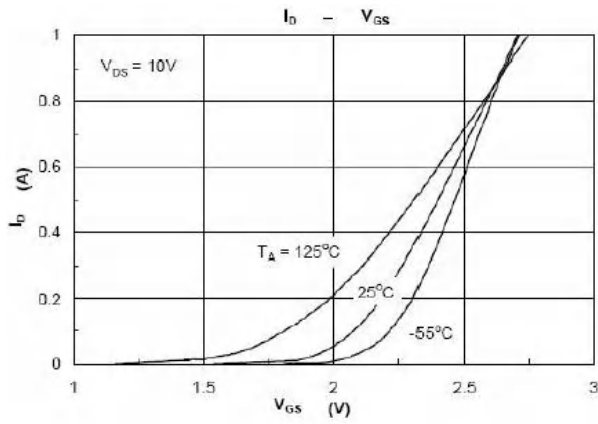
Notes :

a. Pulse Test : Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

b. Guaranteed by design, not subject to producing.

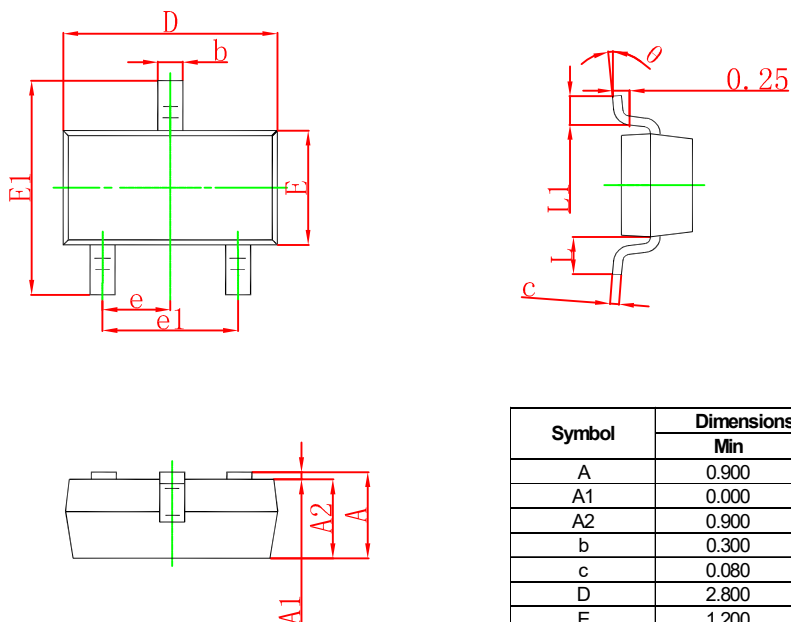
Typical Characteristics





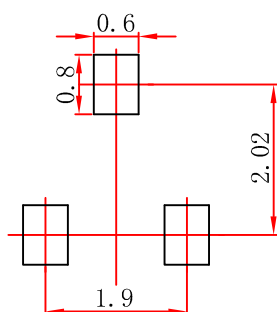


SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.



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