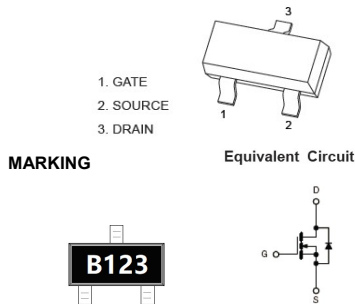


BSS123W MOSFET(N-Channel)
SOT-323 Plastic-Encapsulate MOSFET

V(BR)DSS	RDS(ON)MAX	ID
100V	6Ω@10V	0.17A
	10Ω@4.5V	

SOT-323

Features

- TrenchFET Power MOSFET
- Load Switch for Portable Devices.
- DC/DC Converter.

Mechanical Data

- SOT-323 Small Outline Plastic Package.
- Epoxy UL: 94V-0.
- Mounting Position: Any.

Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	100	V
Drain-Source Voltage R _{Gs} ≤ 20K Ω	V _{DRG}	100	V
Gate-Source Voltage	V _{GS}	± 20	V
Continuous Drain Current	I _D	0.17	A
Pulsed Drain Current	I _{DM}	0.68	A
Power Dissipation	P _D	200	mW
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-50-+150	°C
Thermal Resistance From Junction to Ambient	R _{θJA}	625	°C/W

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbols	Test Condition	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	V(BR)DSS	V _{GS} =0V, I _D =250uA	100			V
Gate-Threshold voltage(note1)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =1mA	0.8	1.4	2.0	V
Gate-body Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =20V			50	nA
Zero Gate Voltage Drain current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1.00	uA
		V _{DS} =20V, V _{GS} =0V			0.01	
Drain-Source On-Resistance (note1)	R _{DS(ON)}	V _{GS} =10V, I _D =0.17A			6	Ω
		V _{GS} =4.5V, I _C =0.17A			10	
Forward trans conductance (note1)	g _{fs}	V _{DS} =10V, I _D =0.17A	80	370		mS
Diode forward voltage(note1)	V _{SD}	I _S =0.34A, V _{GS} =0V		0.84	1.3	V
Dynamic(note2)						
Input capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz		29	60	pF
Output capacitance	C _{oss}			10	15	
Reverse Transfer capacitance	C _{rss}			2	6	
Switching(note1,2)						
Turn-on Time	t _{d(on)}	V _{DD} =30V, R _{GEN} =50Ω, V _{GS} =10V, I _D ≈0.28A,			8	ns
Rise time	t _r				8	
Turn-off Time	t _{d(off)}				13	
Fall time	t _f				16	

Notes: a. Pulse Test: Pulse Width ≤ 300us, Duty Cycle ≤ 2%.

Typical characteristics

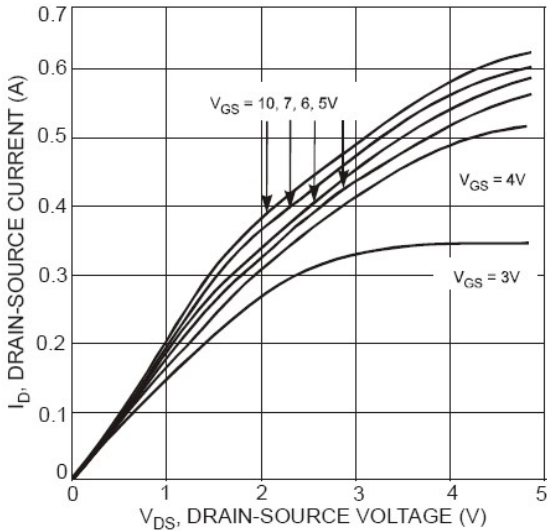


Fig. 1 On-Region Characteristics

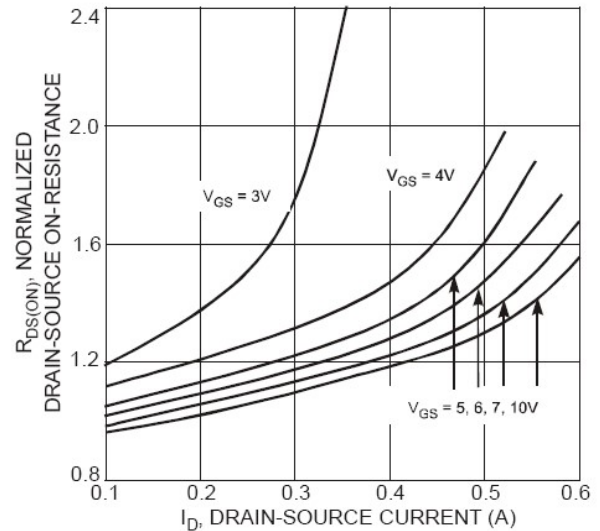


Fig. 2 On-Resistance Variation with Gate Voltage and Drain-Source Current

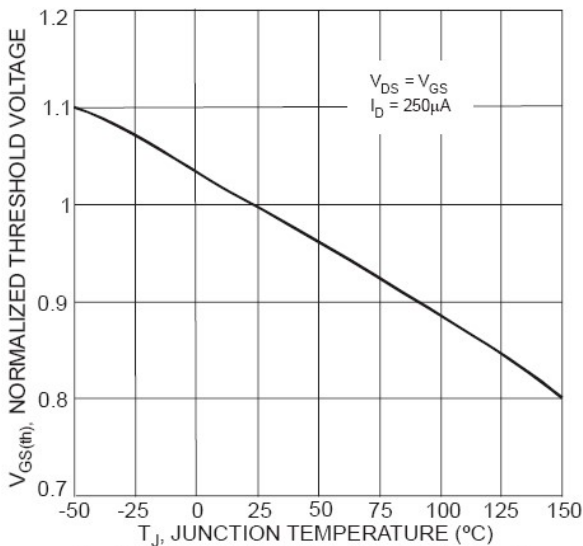


Fig. 3 Gate Threshold Variation with Temperature

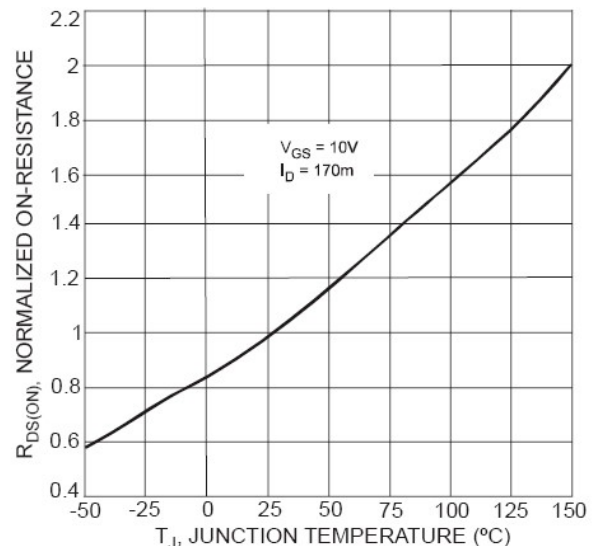


Fig. 4 On-Resistance Variation with Temperature

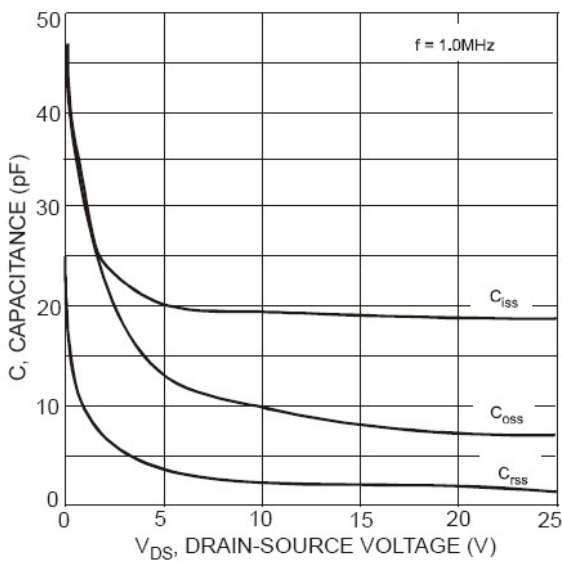


Fig. 5 Typical Capacitance

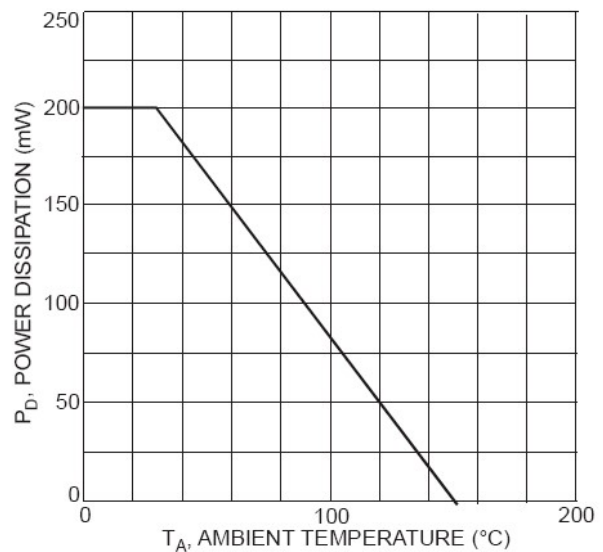
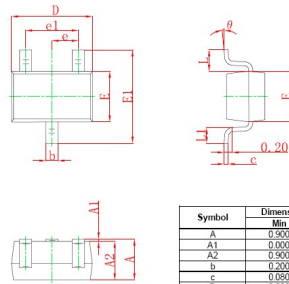


Fig. 6 Power Derating Curve, Total Package

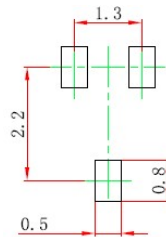
SOT-323 PACKAGE OUTLINE Plastic surface mounted package



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.900	0.950	0.035	0.037
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Precautions: PCB Design

Recommended land dimensions for SOT-323 diode. Electrode patterns for PCBs



- Note:
1. Controlling dimension; in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.