JYELECTRONICS

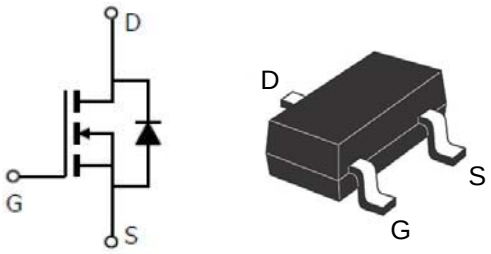
BSS123X

N-Channel MOSFET

Features

- V_{DS}=100V, I_D=0.17A
- $R_{DS(ON)}$ <6Ω @ V_{GS} =10V
  $R_{DS(ON}$ <9Ω @ V_{GS} =4.5V
- N-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- Surface Mount Package

Pin Configurations

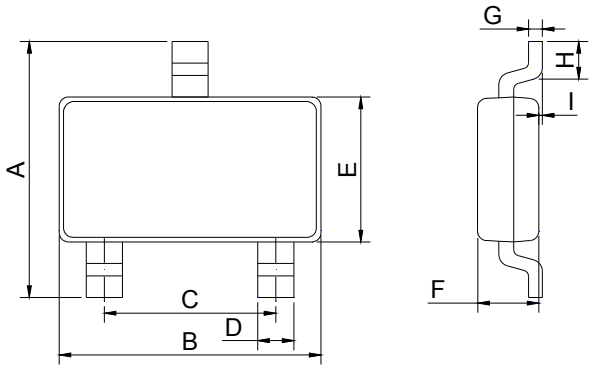


MARKING

BSS123	B123

Marking: BSS123 or B123

Package Mechanical Data



SOT23

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.30	2.40	2.50	0.091	0.095	0.098
B	2.80	2.90	3.00	0.110	0.114	0.118
C	1.90 REF			0.075 REF		
D	0.35	0.40	0.45	0.014	0.016	0.018
E	1.20	1.30	1.40	0.047	0.051	0.055
F	0.90	1.00	1.10	0.035	0.039	0.043
G		0.10	0.15		0.004	0.006
H	0.20			0.008		
I	0		0.10	0		0.004

Absolute Maximum Ratings (T_C=25℃ unless otherwise specified)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		100	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current	T_C = 25℃	0.17	A
		T_C = 100℃	0.11	
I_{DM}	Pulsed Drain Current note1		0.68	A
P_D	Power Dissipation	T_A = 25℃	0.35	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		357	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

Electrical Characteristics (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D= 250μA	100	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =80V, V_{GS} = 0V,	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS} =0V, V_{GS} = ±20V	-	-	±10	uA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D= 250μA	1.5	-	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS} =10V, I_D =0.25A	-	-	6	Ω
		V_{GS} =4.5V, I_D =0.2A	-	-	9	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} =25V, V_{GS} =0V, f = 1.0MHz	-	-	60	pF
C_{oss}	Output Capacitance		-	-	15	pF
C_{rss}	Reverse Transfer Capacitance		-	-	6	pF
Q_g	Total Gate Charge	V_{DS} =10V, I_D =0.22A, V_{GS} =10V	-	-	2	nC
Q_{gs}	Gate-Source Charge		-	-	0.25	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	-	0.4	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD} =30V, I_D =0.28A, R_{GEN}=50Ω, V_{GS}=10V,	-	-	8	ns
t_r	Turn-on Rise Time		-	-	8	ns
$t_{d(off)}$	Turn-off Delay Time		-	-	13	ns
t_f	Turn-off Fall Time		-	-	6	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	0.17	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	0.68	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} =0V, I_S =0.4A	-	-	1.3	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%