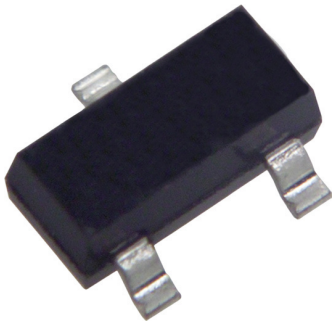
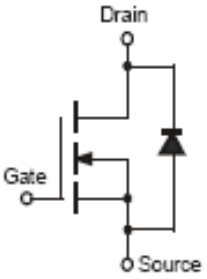
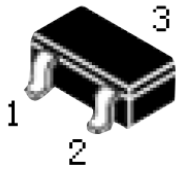
N-Channel Logic Level Enhancement Mode Field Effect Transistor







SOT-323

Features:

- Low On-Resisrance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input / Output Leakage

Maximum Ratings:

Ratings at 25°C unless otherwise specified.

Parameter	Symbol	Value	Units
Drain-source voltage	V_{DSS}	50	V
Drain-gate voltage RGS ≤20kΩ	V_{GGR}	50	V
Gate-surce voltage	V_{GSS}	±20	V
Drain current -continuous	I_D	200	mA
Power dissipation	P_D	200	mW
Thermal resistance, junction-to-ambient	$R_{\theta JA}$	417	°C/W
Junction and storage temperature	T_J, T_{stg}	-55 to +150	°C

Electrical Characteristics:

Ratings at 25°C unless otherwise specified

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Gate leakage current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	-	-	±100	nA
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250uA	50	75	-	V
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	0.5	1.2	1.5	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=50V, V_{GS}=0V	-	-	0.5	μA
Drain-source on-state resistance	$R_{DS(on)}$	I_D=0.22A, V_{GS}=10V	-	1.4	3.5	Ω
Forward transfer admittance	g_{FS}	V_{DS}=25V, I_D=0.2A, f=1MHz	100	-	-	mS
Input capacitance	C_{ISS}	V_{DS}=10V ,V_{GS}=0V, f=1MHz	-	-	50	pF
Output capacitance	C_{OSS}		-	-	25	
Reverse transfer capacitance	C_{RSS}		-	-	8	
Turn-on delay time	$t_{D(ON)}$	V_{DD}=30V, I_D= 0.2A, R_{GEN}=50Ω	-	-	20	ns
Turn-off delay time	$t_{D(OFF)}$		-	-		ns

Typical Characteristics:

T_A = 25°C unless otherwise specified

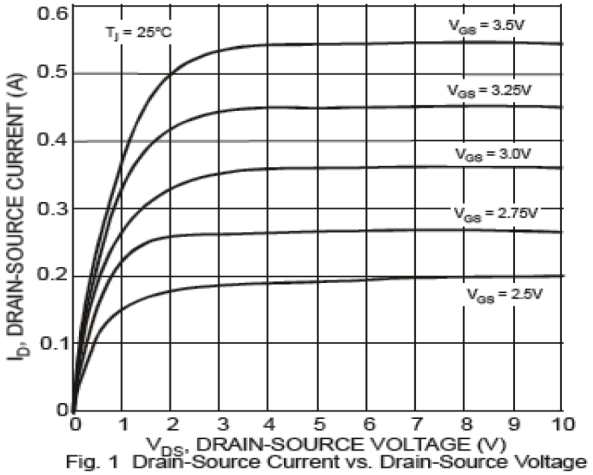


Fig. 1 Drain-Source Current vs. Drain-Source Voltage

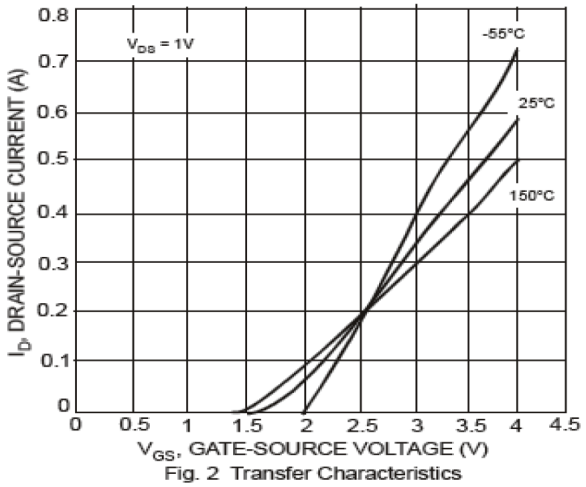


Fig. 2 Transfer Characteristics

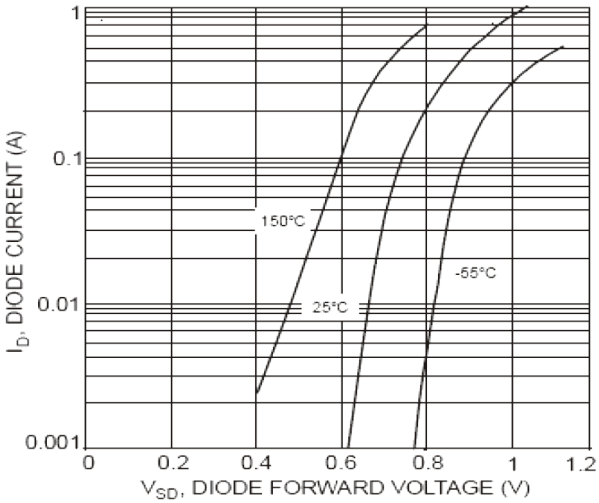


Fig. 3 Body Diode Current vs. Body Diode Voltage

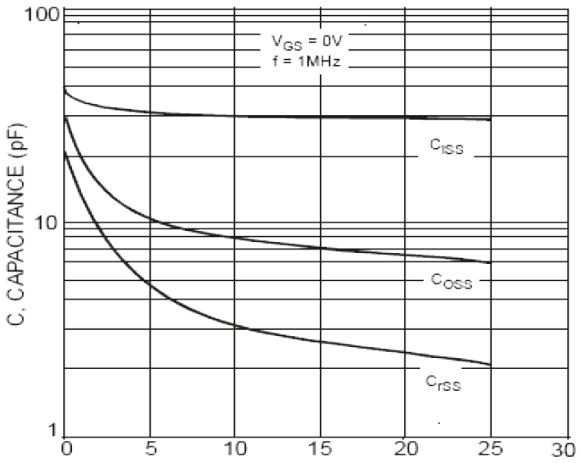
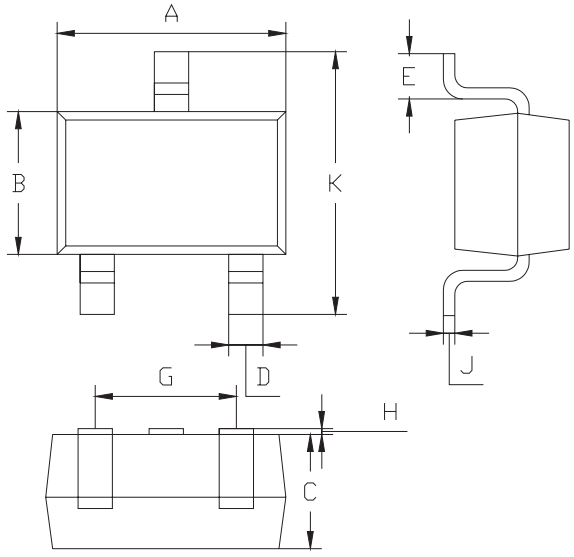


Fig. 4 Capacitance vs. Drain-Source Voltage

Package Outline:

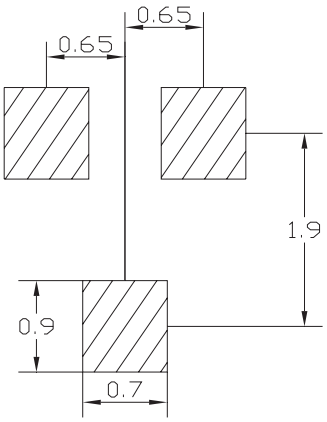
Plastic surface mounted package



SOT-323		
Dim.	**Min.**	**Max.**
A	1.8	2.2
B	1.15	1.35
C	1 Typ.	
D	0.15	0.35
E	0.25	0.4
G	1.2	1.4
H	0.02	0.1
J	0.1 Typ.	
K	2.2	2.4

Dimensions : Millimetres

Soldering Footprint:



Dimensions : Millimetres

Package Information:

Device	Package	Shipping
BSS138W-7-F	SOT-323	3,000 / Tape & Reel

Part Number Table

Description	Part Number
N-Channel Logic Level Enhancement Mode Field Effect Transistor	BSS138W-7-F