BSS138DW

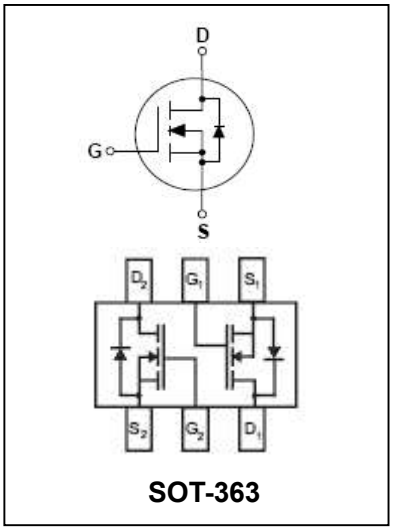
N-Channel Logic Level Enhancement Mode Field Effect Transistor

FEATURES

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

Lead-free

HF



SOT-363

ORDERING INFORMATION

Type No.	Marking	Package Code
BSS138DW□	K38	SOT-363

□: none is for Lead Free package;

"G" is for Halogen Free package.

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	50	V
V_{DGR}	Drain-Gate voltage $R_{GS} \leqslant 20K\Omega$	50	V
V_{GSS}	Gate-Surce Voltage	±20	V
I_D	Drain current -continuous	200	mA
P_D	Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient	417	℃/W
T_J, Tstg	Junction and Storage Temperature	-55 to +150	℃

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ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Gate leakage current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V			±1	uA
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	1.6	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=1.0MHz			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	$t_{D(OFF)}$				20	ns

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

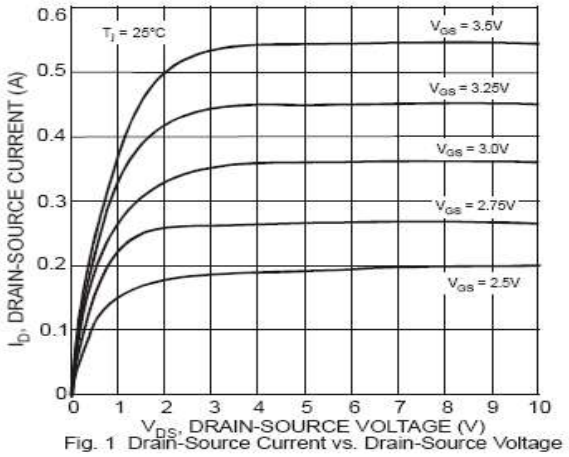

Fig. 1 Drain-Source Current vs. Drain-Source Voltage

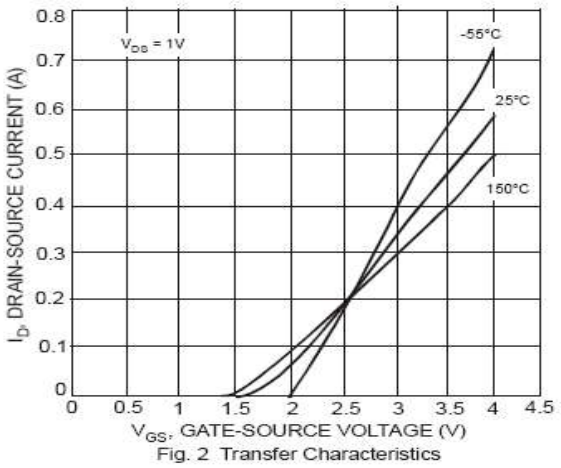

Fig. 2 Transfer Characteristics

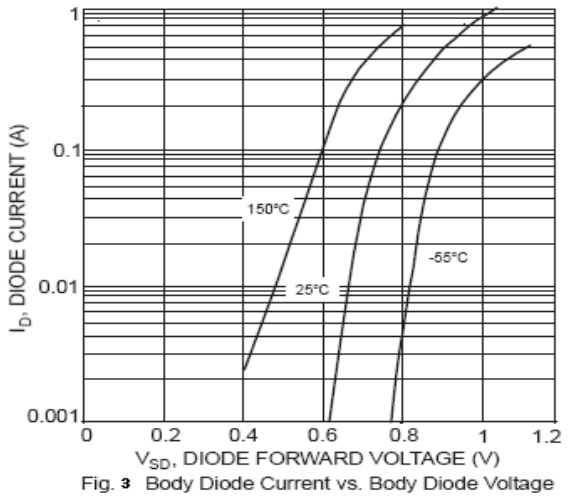

Fig. 3 Body Diode Current vs. Body Diode Voltage

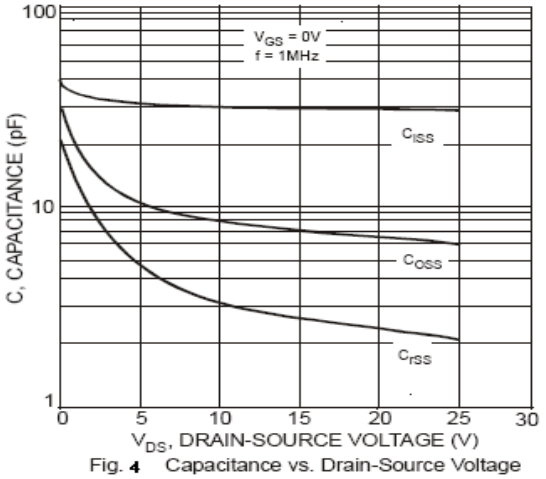

Fig. 4 Capacitance vs. Drain-Source Voltage

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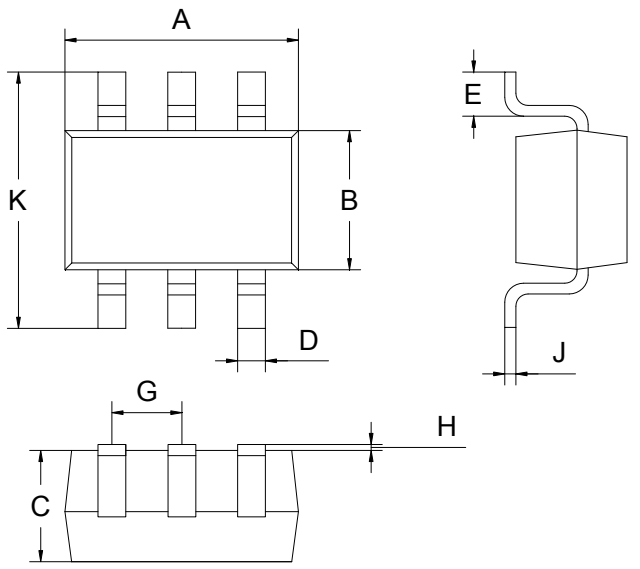
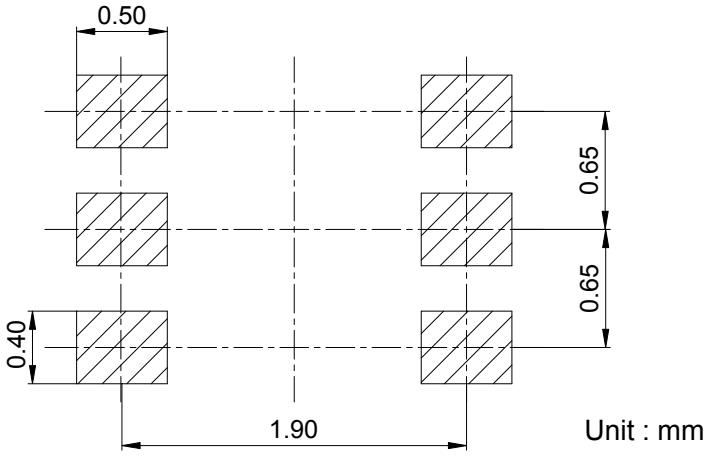
PACKAGE OUTLINE

Plastic surface mounted package SOT-363



SOT-363		
Dim	Min	Max
A	2.00	2.20
B	1.15	1.35
C	0.85	1.05
D	0.15	0.35
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40
All Dimensions in mm		

SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
BSS138DW	SOT-363	3000/Tape&Reel