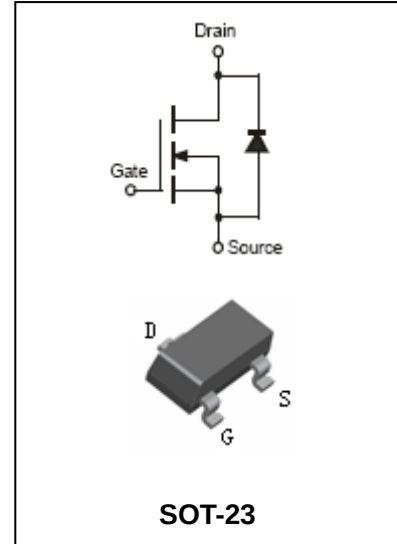


N-Channel Logic Level Enhancement Mode Field Effect Transistor TBSS138

FEATURES

- Low on-resistance
- Low gate threshold voltage
- Low input capacitance
- Fast switching speed
- Low input/output leakage
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF



ORDERING INFORMATION

Type No.	Marking	Package Code
TBSS138	K38	SOT-23

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	50	V
V_{DGR}	Drain-Gate voltage $R_{GS} \leq 20K \Omega$	50	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Drain current -continuous	200	mA
P_D	Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	417	$^{\circ}C/W$
T_J, T_{STG}	Junction and Storage Temperature	-55 to +150	$^{\circ}C$

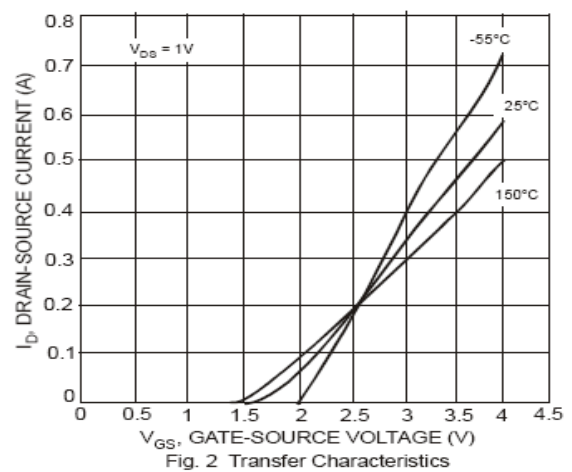
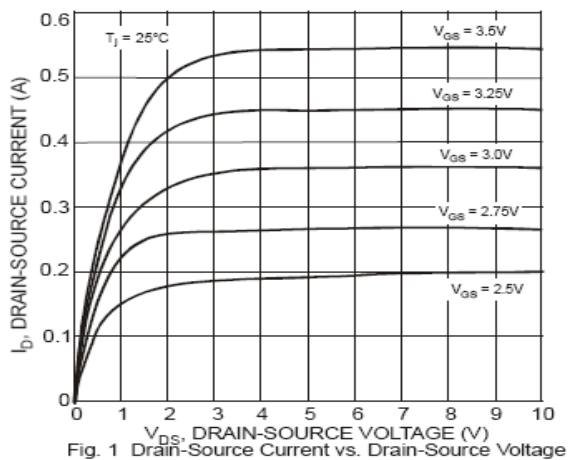
N-Channel Logic Level Enhancement Mode Field Effect Transistor

TBSS138

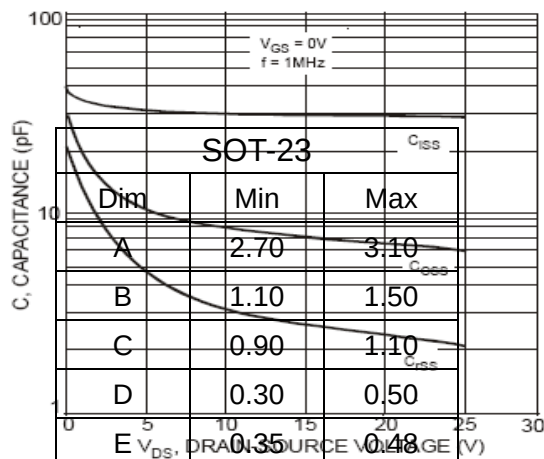
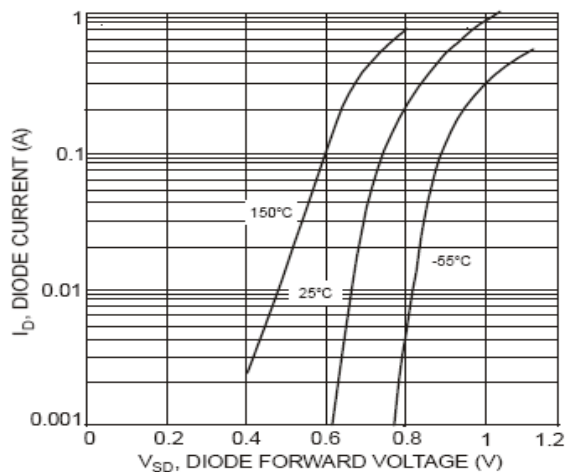
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Gate leakage current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 1	μA
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	50	75		V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	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	$t_{D(ON)}$	$V_{DD}=30V, I_D=0.2A,$ $R_{GEN}=50\Omega$			20	ns
Turn-Off Delay Time	$t_{D(OFF)}$				20	ns

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



N-Channel Logic Level Enhancement Mode Field Effect Transistor TBSS138



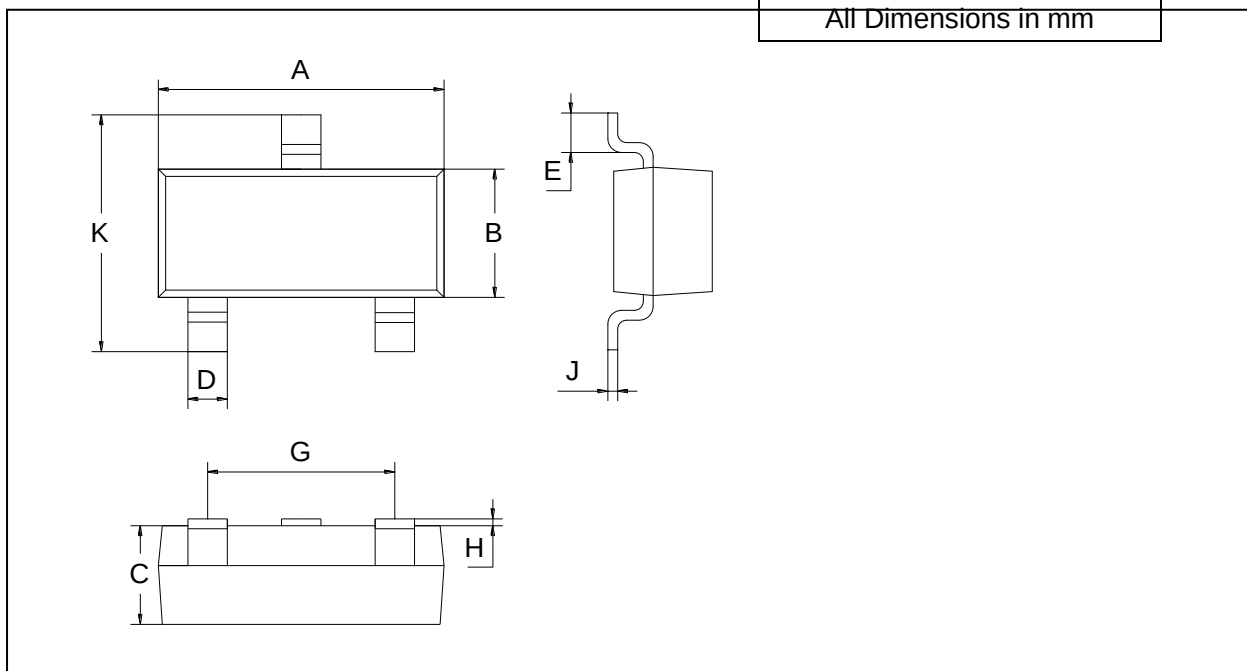
PACKAGE OUTLINE

Plastic surface mounted package

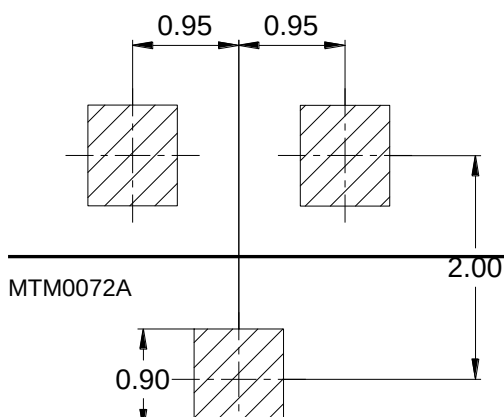
SOT-23

Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

All Dimensions in mm



SOLDERING FOOTPRINT



N-Channel Logic Level Enhancement Mode Field Effect Transistor

TBSS138

Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
TBSS138	SOT-23	3000 pcs / Tape & Reel