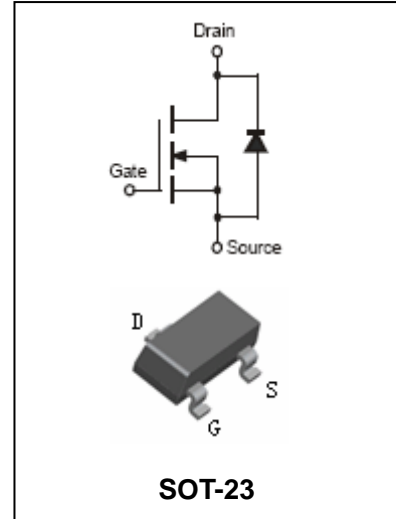




N-Channel Logic Level Enhancement Mode Field Effect Transistor BSS138

FEATURES

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



ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------|---------|--------------|
| BSS138 | 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} ≤ 20K Ω | 50 | V |
| V _{GSS} | Gate-Source Voltage | ±20 | V |
| I _D | Drain current -continuous | 200 | mA |
| P _D | Power Dissipation | 300 | mW |
| R _{θJA} | Thermal Resistance, Junction-to-Ambient | 417 | °C/W |
| T _J , T _{stg} | Junction and Storage Temperature | -55 to +150 | °C |

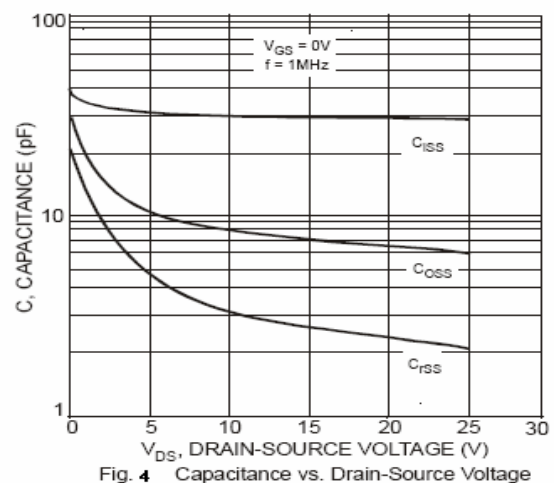
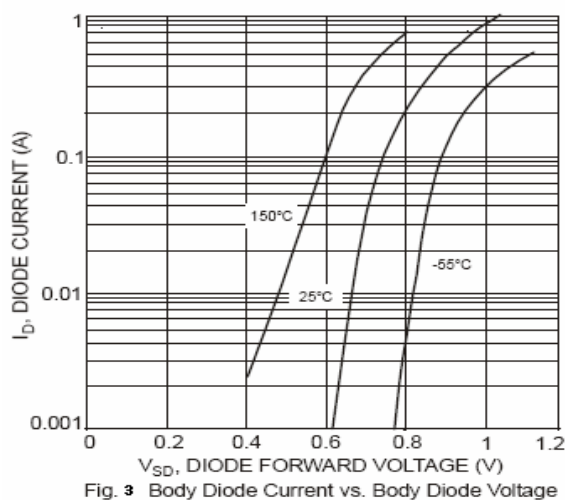
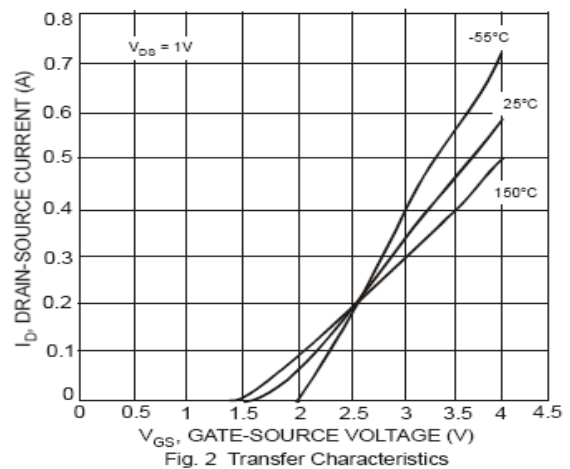
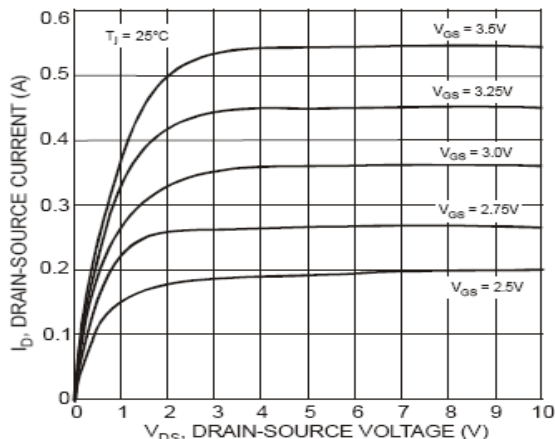


N-Channel Logic Level Enhancement Mode Field Effect Transistor BSS138

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 | 1.5 | 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} | $V_{DS}=10V, V_{GS}=0V, f=1.0MHz$ | | | 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



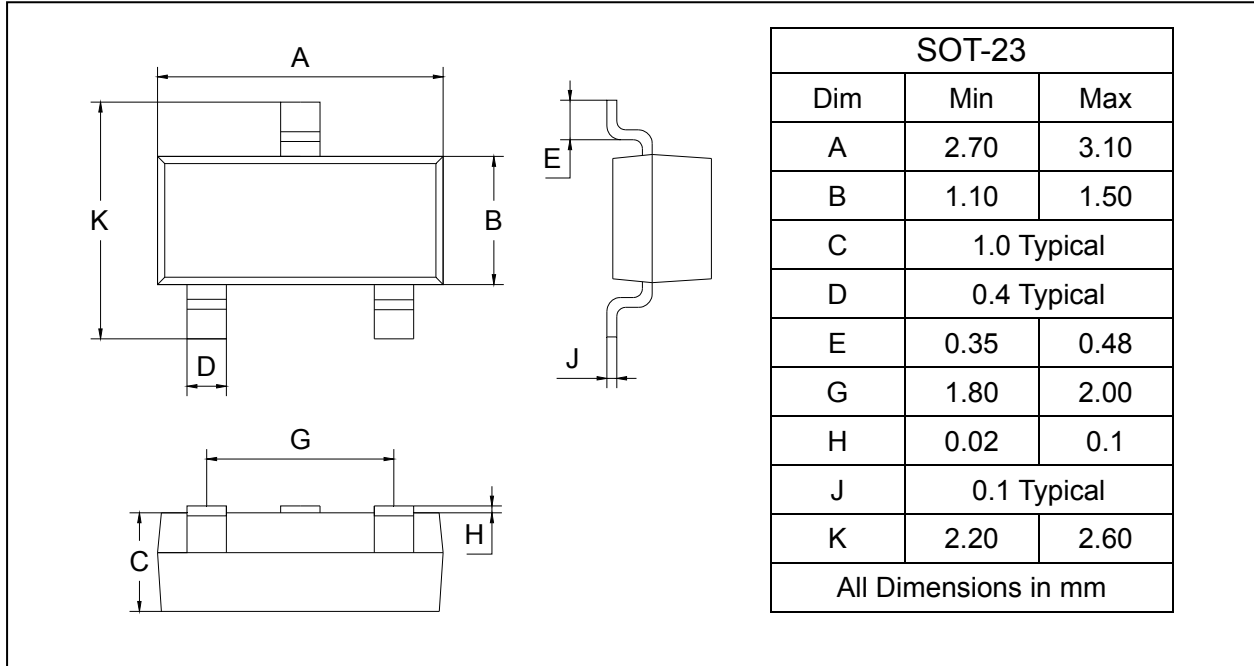


N-Channel Logic Level Enhancement Mode Field Effect Transistor BSS138

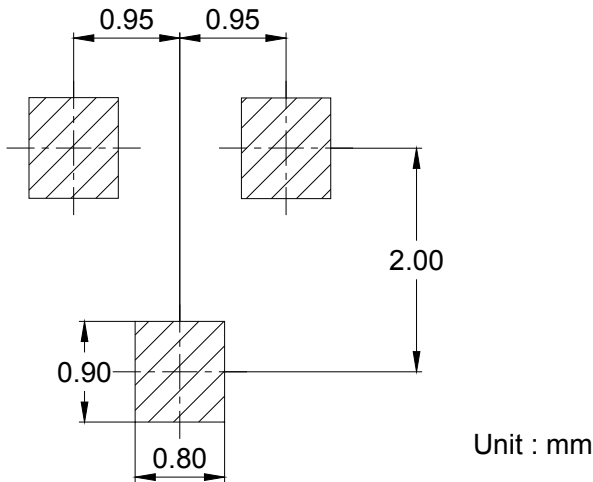
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

| Device | Package | Shipping |
|--------|---------|----------------|
| BSS138 | SOT-23 | 3000/Tape&Reel |