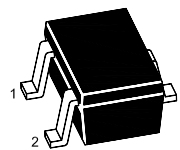
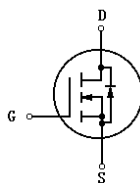


MMBT7002W

N-Channel Enhancement Mode Field Effect Transistor



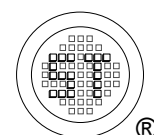
1. Gate 2. Source 3. Drain
SOT-323 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

| Parameter | Symbol | Value | Unit |
|---|-----------|---------------|------------------|
| Drain Source Voltage | V_{DSS} | 60 | V |
| Drain Gate Voltage ($R_{GS} \leq 1\text{ M}\Omega$) | V_{DGR} | 60 | V |
| Gate Source Voltage | V_{GSS} | ± 20 | V |
| | | ± 40 | |
| Drain Current | I_D | 115 | mA |
| | | 800 | |
| Total Power Dissipation | P_{tot} | 200 | mW |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{Stg} | - 55 to + 150 | $^\circ\text{C}$ |

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter | Symbol | Min. | Max. | Unit |
|---|---------------|------|------|---------------|
| Drain Source Breakdown Voltage at $I_D = 10\text{ }\mu\text{A}$ | BV_{DSS} | 60 | - | V |
| Zero Gate Voltage Drain Current at $V_{DS} = 60\text{ V}$ | I_{DSS} | - | 1 | μA |
| Gate Source Leakage Current at $\pm V_{GS} = 20\text{ V}$ | $\pm I_{GSS}$ | - | 100 | nA |
| Gate Source Threshold Voltage at $V_{DS} = V_{GS} = 10\text{ V}$, $I_D = 250\text{ }\mu\text{A}$ | $V_{GS(th)}$ | 1 | 2.5 | V |
| Static Drain Source On Resistance at $V_{GS} = 5\text{ V}$, $I_D = 50\text{ mA}$ at $V_{GS} = 10\text{ V}$, $I_D = 500\text{ mA}$ | $R_{DS(ON)}$ | - | 7.5 | Ω |
| | | - | 7.5 | |
| Drain Source On Voltage at $V_{GS} = 5\text{ V}$, $I_D = 50\text{ mA}$ at $V_{GS} = 10\text{ V}$, $I_D = 500\text{ mA}$ | $V_{DS(ON)}$ | - | 1.5 | V |
| | | - | 3.75 | |
| Forward Transconductance at $V_{DS} = 10\text{ V}$, $I_D = 200\text{ mA}$ | g_{FS} | 80 | - | mS |
| Input Capacitance at $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$ | C_{iss} | - | 50 | pF |
| Output Capacitance at $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$ | C_{oss} | - | 25 | pF |
| Reverse Transfer Capacitance at $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$ | C_{rss} | - | 5 | pF |
| Turn On Time at $V_{DD} = 30\text{ V}$, $R_L = 150\Omega$, $I_D = 0.2\text{ A}$, $V_{GS} = 10\text{ V}$, $R_{GEN} = 25\Omega$ | t_{on} | - | 20 | ns |
| Turn Off Time at $V_{DD} = 30\text{ V}$, $R_L = 150\Omega$, $I_D = 0.2\text{ A}$, $V_{GS} = 10\text{ V}$, $R_{GEN} = 25\Omega$ | t_{off} | - | 20 | ns |



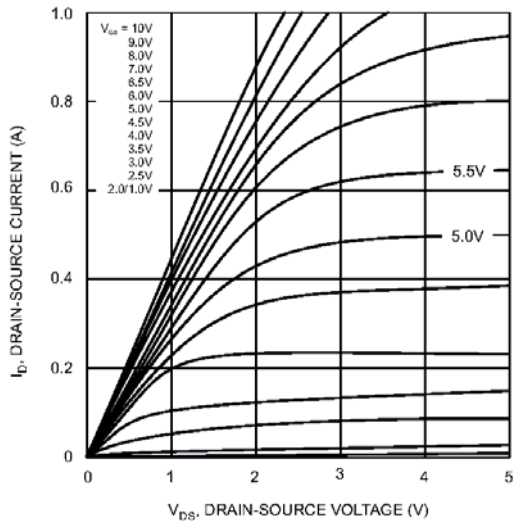


Fig. 1 On-Region Characteristics

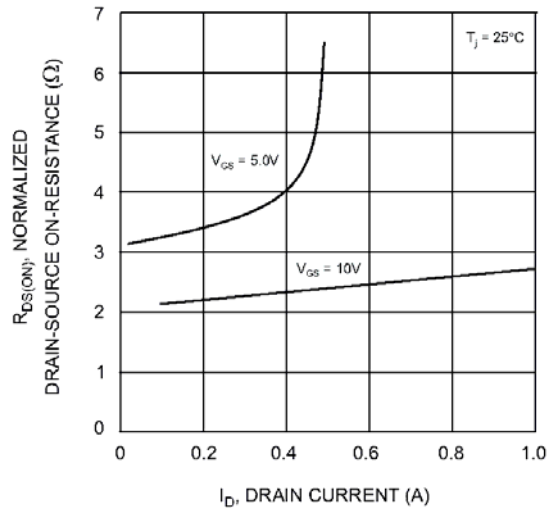


Fig. 2 On-Resistance vs Drain Current

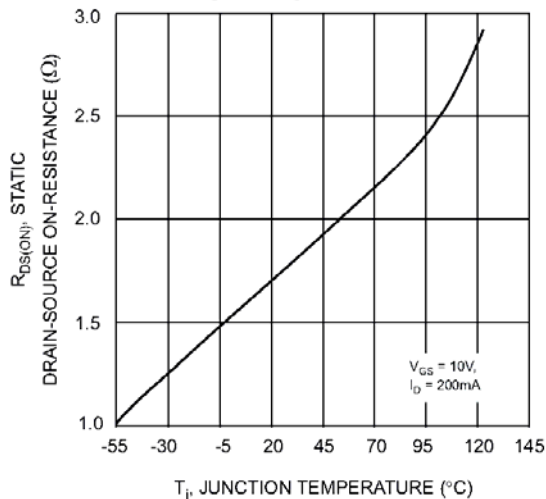


Fig. 3 On-Resistance vs Junction Temperature

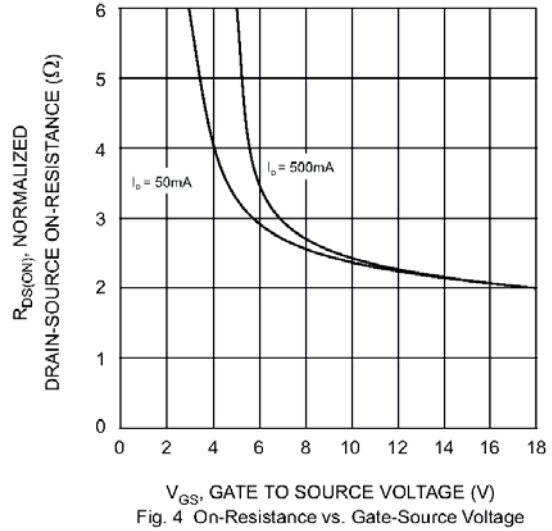


Fig. 4 On-Resistance vs. Gate-Source Voltage

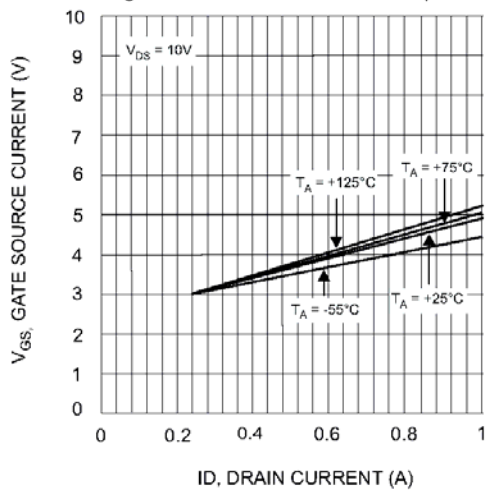
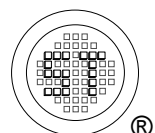
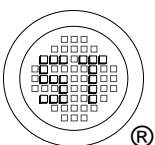
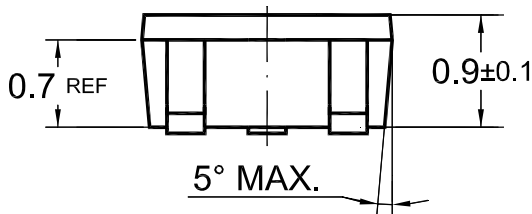
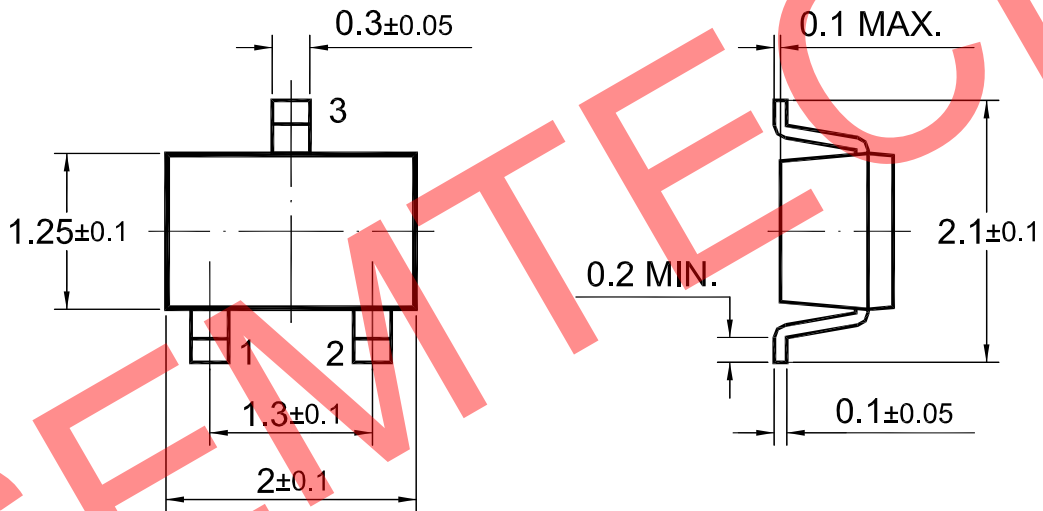
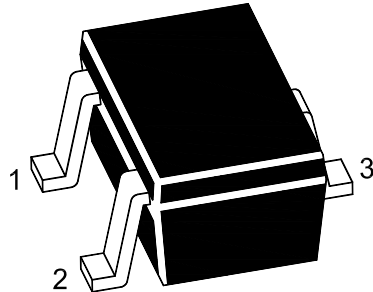


Fig. 5 Typical Transfer Characteristics



SOT-323 Package Outline

Package Outline Dimensions (Units: mm)



SEMTECH ELECTRONICS LTD.
Subsidiary of Sino-Tech International (BVI) Limited



Dated : 23/10/2010 Rev:01