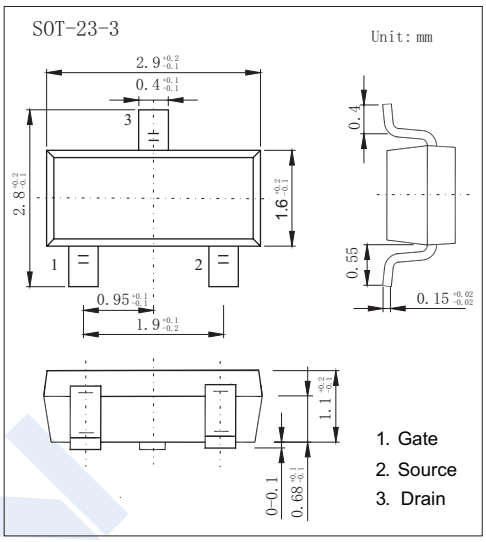
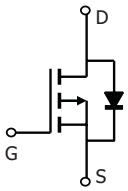
# P-Channel MOSFET

# BSS84




## ■ Features

- $V_{DS\ (V)}$ = -50V
- $I_D$ = -130 mA
- $R_{DS(ON)}$ < 10Ω ($V_{GS}$ = -5V)




## ■ Absolute Maximum Ratings Ta = 25℃

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | -50 | V |
| Gate-Source Voltage | $V_{GS}$ | ±20 | |
| Continuous Drain Current | $I_D$ | -130 | mA |
| Pulsed Drain Current (tp≤10μs) | $I_{DM}$ | -520 | |
| Power Dissipation | $P_D$ | 225 | mW |
| Thermal Resistance.Junction- to-Ambient | $R_{thJA}$ | 556 | ℃/W |
| Junction Temperature | $T_J$ | 150 | ℃ |
| Storage Temperature Range | $T_{stg}$ | -55 to 150 | |

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■ Electrical Characteristics Ta = 25℃ Unless otherwise noted

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $V_{DSS}$ | $I_D$=-250μA, $V_{GS}$=0V | -50 | | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=-50V, $V_{GS}$=0V | | | -0.1 | μA |
| | | $V_{DS}$=-50V, $V_{GS}$=0V | | | -15 | |
| Gate-Body Leakage Current | $I_{GSS}$ | $V_{DS}$=0V, $V_{GS}$=±20V | | | ±10 | μA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$ , $I_D$=-1.0mA | -0.8 | | -2 | V |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}$=-5V, $I_D$=-100mA | | | 10 | Ω |
| Forward Transconductance | $g_{FS}$ | $V_{DS}$=-25V, $I_D$=-100mA, f=1.0KHz | 50 | | | mS |
| Input Capacitance | $C_{iss}$ | $V_{GS}$=0V, $V_{DS}$=-5V, f=1MHz | | 30 | | pF |
| Output Capacitance | $C_{oss}$ | | | 10 | | |
| Reverse Transfer Capacitance | $C_{rss}$ | | | 5 | | |
| Turn-On DelayTime | $t_{d(on)}$ | $V_{DD}$=-15V, $I_D$=-0.25A, $R_L$=50Ω [1] | | 2.5 | | ns |
| Turn-On Rise Time | $t_r$ | | | 1 | | |
| Turn-Off DelayTime | $t_{d(off)}$ | | | 16 | | |
| Turn-Off Fall Time | $t_f$ | | | 8 | | |
| Gate Charge | $Q_T$ | | | 6000 | | PC |
| Maximum Body-Diode Continuous Current | $I_S$ | | | | -0.13 | A |
| Maximum Body-Diode Pulsed Current | $I_{SM}$ | | | | -0.52 | |
| Diode Forward Voltage | $V_{SD}$ | $I_{SD}$=-130mA,$V_{GS}$=0V | | -2.5 | | V |

1) Switching Time is Essentially Independent of Operating Temperature.

■ Marking

| Marking | PD |
|---|---|

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■ Typical Characterisitics

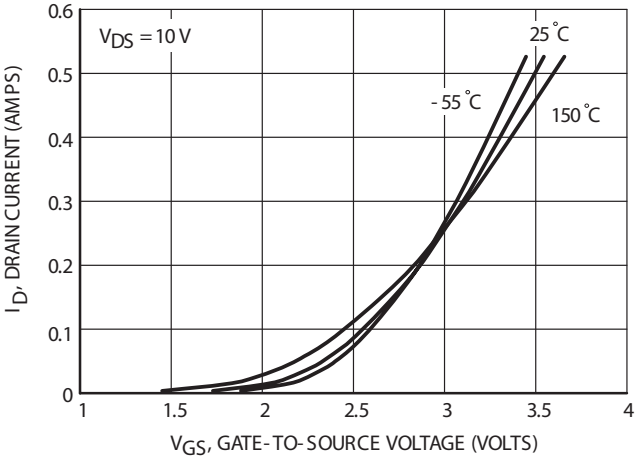


FIG1. Transfer Characteristics

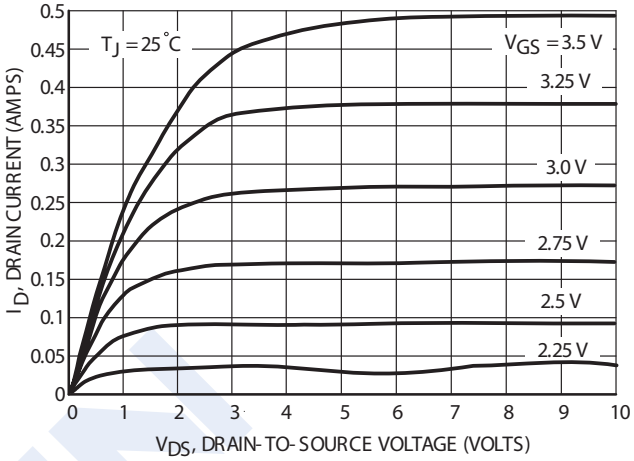


FIG2. On-Region Characteristics

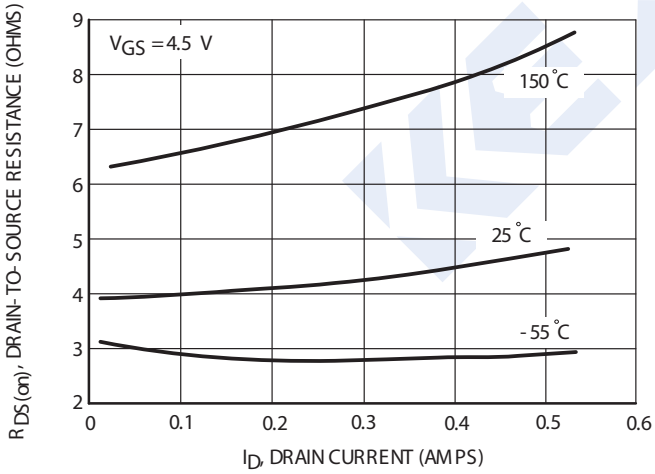


FIG3. On-Resistance versus Drain Current

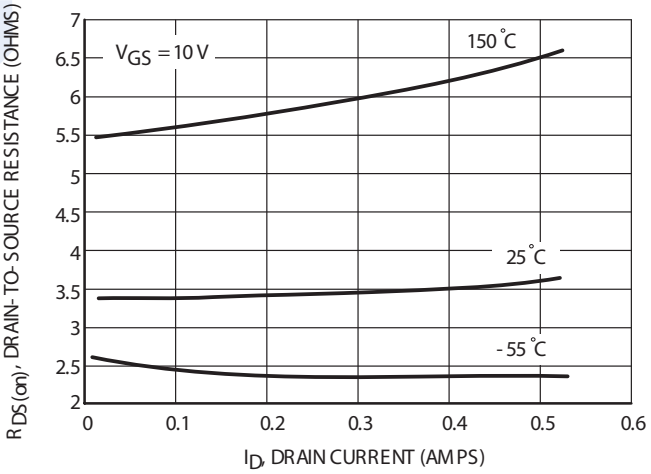


FIG4. On-Resistance versus Drain Current

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■ Typical Characterisitics

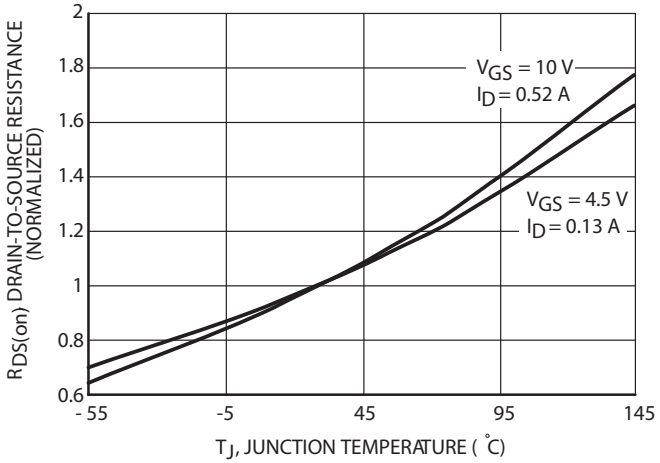


FIG5. On-Resistance Variation with Temperature

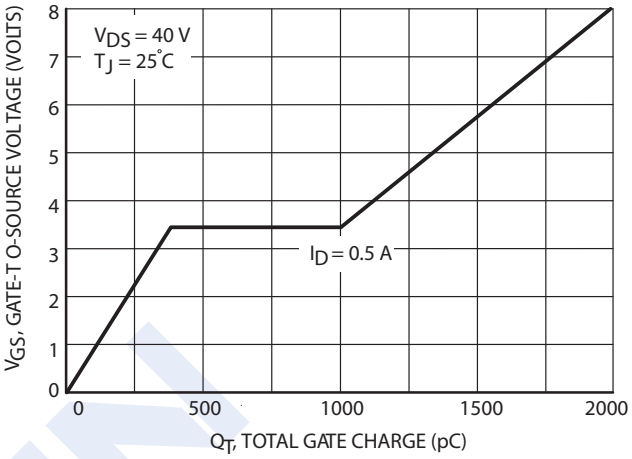


FIG6. Gate Charge

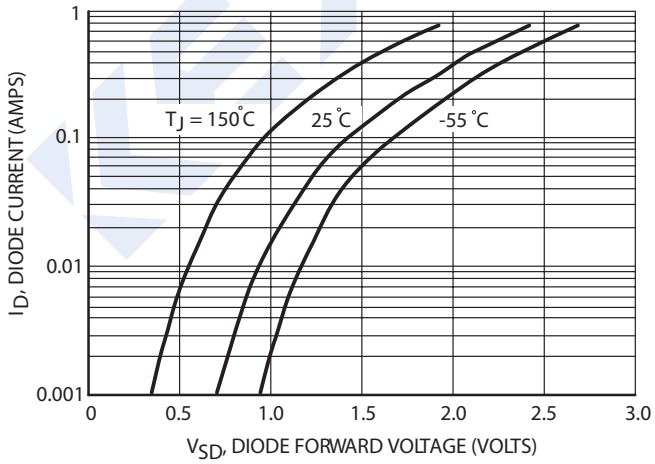


FIG7. Body Diode Forward Voltage