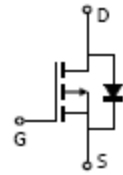




BSS84W P-CHANNEL MOSFET

| $V_{(BR)DSS}$ | $R_{DS(on)MAX}$ | I_D |
|---------------|-----------------|--------|
| -50V | 8Ω@-10V | -0.13A |
| | 10Ω@-5V | |

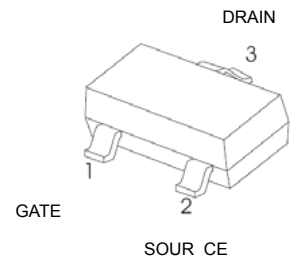


DESCRIPTION

These miniature surface mount MOSFETs reduce power loss conserve energy, making this device ideal for use in small power management circuitry.

FEATURE

- Energy Efficient
- Low Threshold Voltage
- High-speed Switching
- Miniature Surface Mount Package Saves Board Space



SOT-323

APPLICATION

- DC-DC converters, load switching, power management in portable and battery-powered products such as computers, printers, cellular and cordless telephones.

MARKING : B84

MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|-----------------|----------|------|
| Drain-Source Voltage | V_{DS} | -50 | V |
| Gate-Source Voltage | V_{GS} | ±20 | V |
| Continuous Drain Current | I_D | -0.13 | A |
| Pulsed Drain Current (note 1) @tp <10 μs | I_{DM} | -0.52 | A |
| Power Dissipation | P_D | 225 | mW |
| Thermal Resistance from Junction to Ambient (note 2) | $R_{\theta JA}$ | 556 | °C/W |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature | T_{STG} | -55~+150 | °C |
| Maximum Lead Temperature for Soldering Purposes , Duration for 5 Seconds | T_L | 260 | °C |



MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^{\circ}\text{C}$ unless otherwise specified

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---------------|---|------|-----|---------|----------|
| STATIC CHARACTERISTICS | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = -250\mu A$ | -50 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = -50V, V_{GS} = 0V$ | | | -15 | μA |
| | | $V_{DS} = -25V, V_{GS} = 0V$ | | | -0.1 | μA |
| Gate-body leakage current | I_{GSS} | $V_{GS} = \pm 20V, V_{DS} = 0V$ | | | ± 5 | μA |
| Gate threshold voltage (note 3) | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = -250\mu A$ | -0.9 | | -2 | V |
| Drain-source on-resistance (note 3) | $R_{DS(on)}$ | $V_{GS} = -5V, I_D = -0.1A$ | | | 10 | Ω |
| | | $V_{GS} = -10V, I_D = -0.1A$ | | | 8 | Ω |
| Forward transconductance (note 1) | g_{FS} | $V_{DS} = -25V; I_D = -100mA$ | 50 | | | mS |
| DYNAMIC CHARACTERISTICS (note 4) | | | | | | |
| Input capacitance | C_{iss} | $V_{DS} = -5V, V_{GS} = 0V, f = 1MHz$ | | 30 | | pF |
| Output capacitance | C_{oss} | | | 10 | | pF |
| Reverse transfer capacitance | C_{rss} | | | 5 | | pF |
| SWITCHING CHARACTERISTICS (note 4) | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DD} = -15V,$ $R_L = 50\Omega, I_D = -2.5A$ | | 2.5 | | ns |
| Turn-on rise time | t_r | | | 1 | | ns |
| Turn-off delay time | $t_{d(off)}$ | | | 16 | | ns |
| Turn-off fall time | t_f | | | 8 | | ns |
| SOURCE-DRAIN DIODE CHARACTERISTICS | | | | | | |
| Continuous Current | I_S | | | | -0.13 | A |
| Pulsed Current | I_{SM} | | | | -0.52 | A |
| Diode forward voltage (note 3) | V_{SD} | $I_S = -0.13A, V_{GS} = 0V$ | | | -2.2 | V |

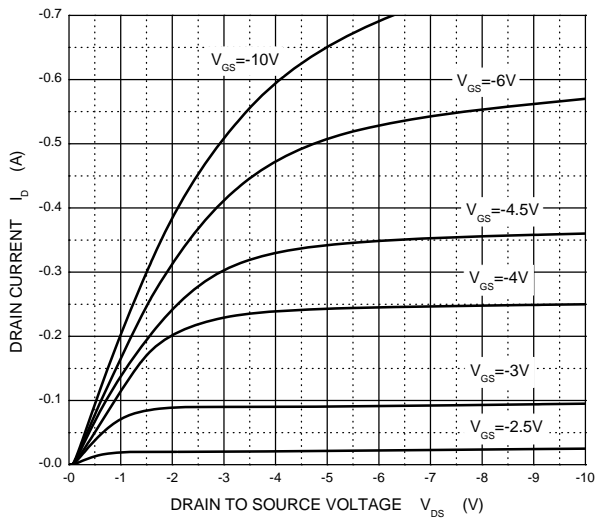
Notes :

1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , $t \leq 10s$.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to producing.

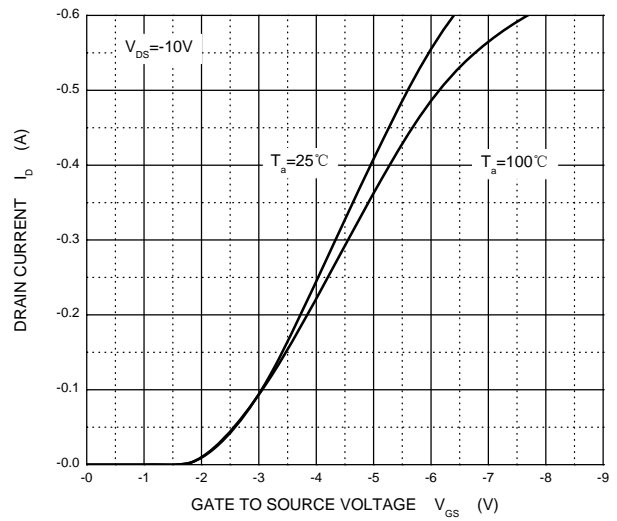


Typical Characteristics

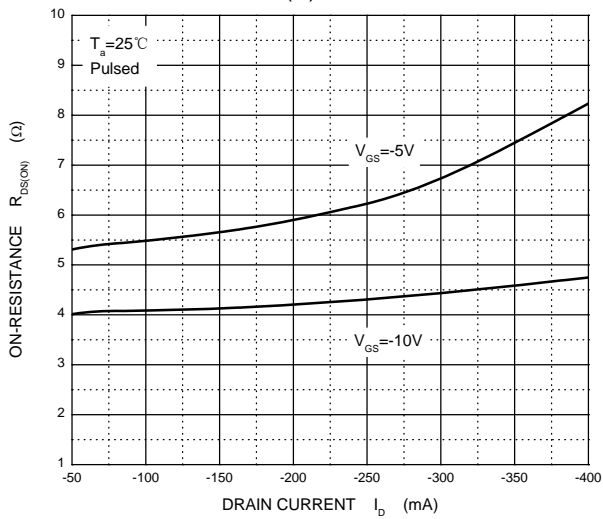
Output Characteristics



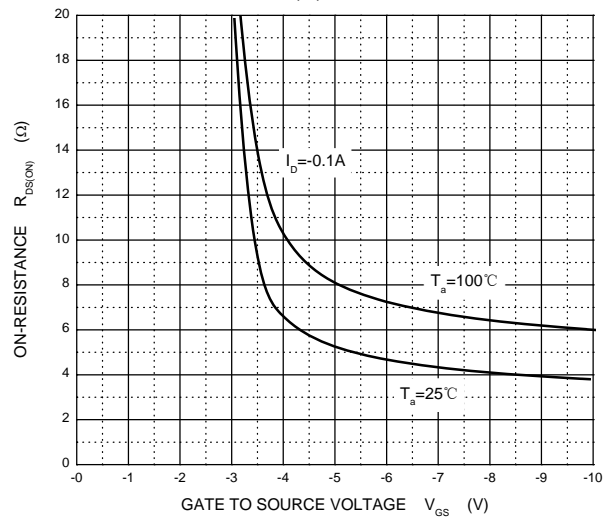
Transfer Characteristics



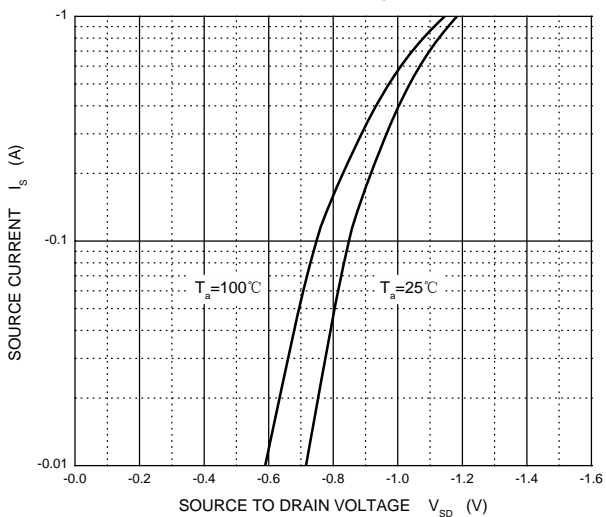
$R_{DS(ON)}$ — I_D



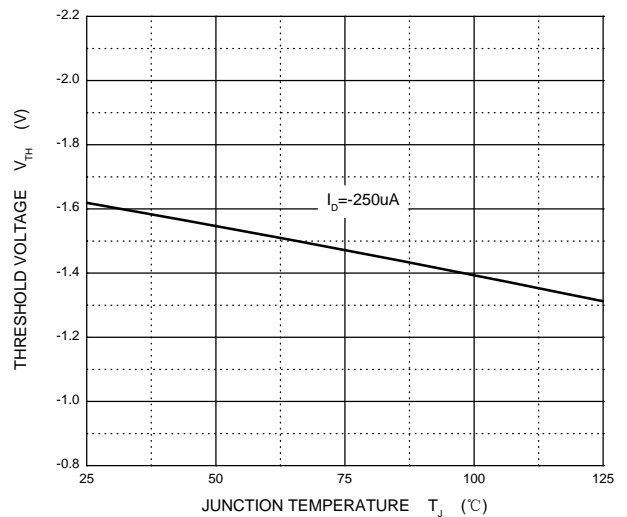
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

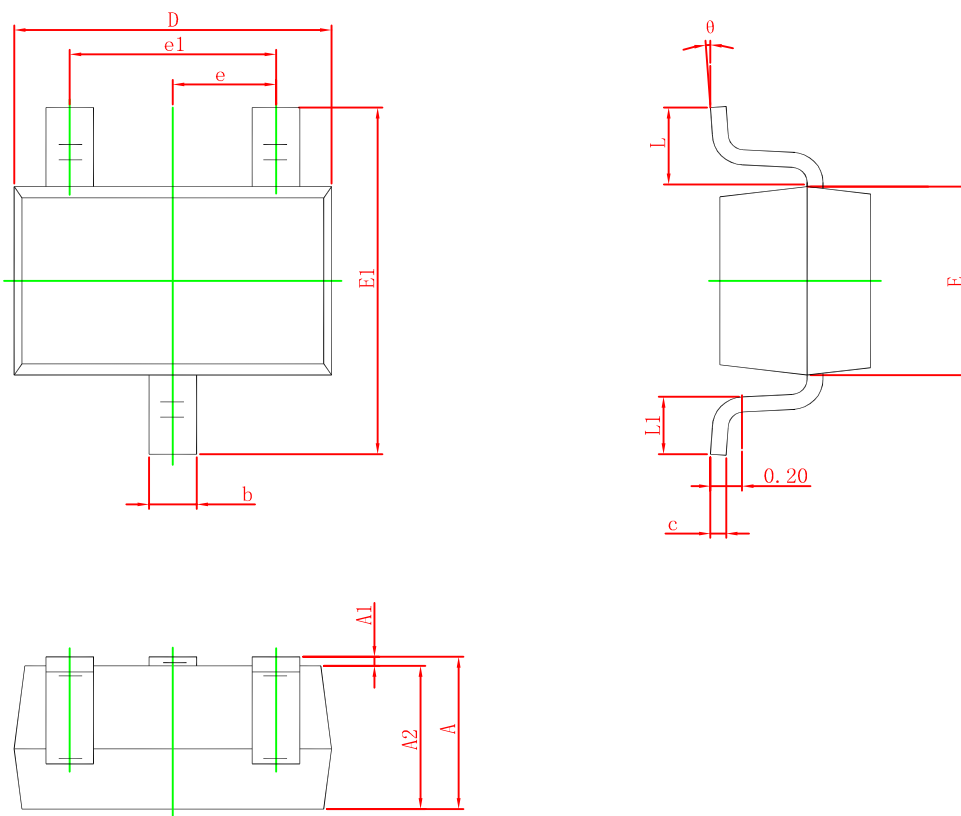


Threshold Voltage





SOT323 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.200 | 0.400 | 0.008 | 0.016 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.150 | 1.350 | 0.045 | 0.053 |
| E1 | 2.150 | 2.450 | 0.085 | 0.096 |
| e | 0.650 TYP. | | 0.026 TYP. | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525 REF. | | 0.021 REF. | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| θ | 0° | 8° | 0° | 8° |