



SSC8137GS6A

P-Channel Enhancement Mode MOSFET

➤ Features

| VDS | VGS | RDSON Typ. | ID |
|------|------|------------|-----|
| -30V | ±20V | 23mR@-10V | -7A |
| | | 31mR@-4V5 | |

➤ Description

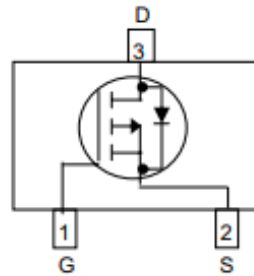
This P-Channel enhancement mode power FETs are produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits and low in-line power loss are needed in a very small outline surface mount package.

➤ Applications

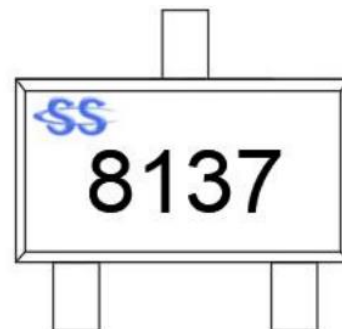
- TFT panel power switch
- High side DC/DC Converter
- High side driver for brushless DC motor
- Portable DVD, DPF

➤ Pin configuration

Top view



SOT23-3L



Marking

➤ Ordering Information

| Device | Package | Shipping |
|-------------|---------|-----------|
| SSC8137GS6A | SOT23-3 | 3000/Reel |



➤ **Absolute Maximum Ratings**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol | Parameter | Ratings | Unit |
|-----------|---------------------------------------|------------|--------------------|
| V_{DSS} | Drain-to-Source Voltage | -30 | V |
| V_{GSS} | Gate-to-Source Voltage | ± 20 | V |
| I_D | Continuous Drain Current ^a | -7 | A |
| I_{DM} | Pulsed Drain Current ^b | -28 | A |
| P_D | Power Dissipation ^a | 2 | W |
| T_J | Operation junction temperature | -55 to 150 | $^{\circ}\text{C}$ |
| T_{STG} | Storage temperature range | -55 to 150 | $^{\circ}\text{C}$ |

➤ **Thermal Resistance Ratings**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol | Parameter | Ratings | Unit |
|-----------------|---|---------|-----------------------------|
| $R_{\theta JA}$ | Junction-to-Ambient Thermal Resistance ^a | 64 | $^{\circ}\text{C}/\text{W}$ |

Note:

- The value of $R_{\theta JA}$ is measured with the device mounted on 1 in² FR-4 board with 2oz.copper,in a still air environment with $T_A=25^{\circ}\text{C}$.The value in any given application depends on the user is specific board design. The current rating is based on the $t \leq 10\text{s}$ thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.

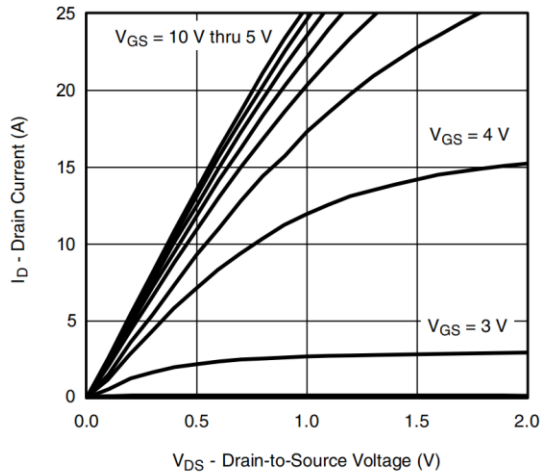


➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

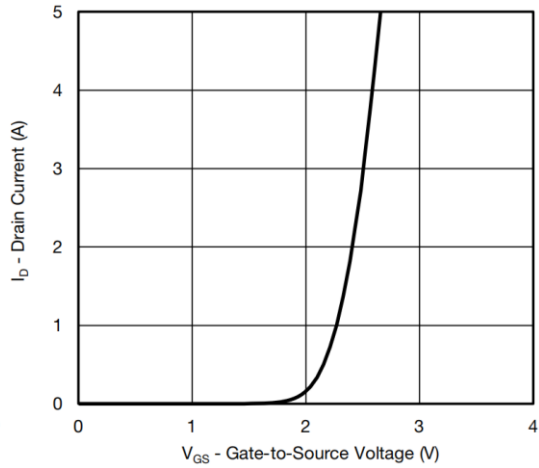
| Symbol | Parameter | Test Conditions | Min | Typ. | Max | Unit |
|---------------|---------------------------------|---|-----|------|-----------|---------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}=0V, I_D=-250\mu A$ | -30 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=V_{GS}, I_D=-250\mu A$ | -1 | -1.5 | -2 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}=-10V, I_D=-5A$ | | 23 | 30 | mR |
| | | $V_{GS}=-4.5V, I_D=-4A$ | | 31 | 45 | |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{DS}=-30V, V_{GS}=0V$ | | | -1 | μA |
| I_{GSS} | Gate-Source leak current | $V_{GS}=\pm 20V, V_{DS}=0V$ | | | ± 100 | nA |
| G_{FS} | Transconductance | $V_{DS}=-10V, I_D=-5A$ | | 15 | | S |
| V_{SD} | Forward Voltage | $V_{GS}=0V, I_S=-3A$ | | -0.8 | -1.3 | V |
| C_{iss} | Input Capacitance | $V_{DS}=-15V, V_{GS}=0V, F=1\text{MHz}$ | | 1400 | | pF |
| C_{oss} | Output Capacitance | | | 730 | | |
| C_{rss} | Reverse Transfer Capacitance | | | 590 | | |
| $T_{D(ON)}$ | Turn-on delay time | $V_{GS}=-10V, V_{DS}=-15V, R_L=2R, R_G=3R, I_D=-2A$ | | 11 | | ns |
| T_r | Rise time | | | 25 | | |
| $T_{D(OFF)}$ | Turn-off delay time | | | 70 | | |
| T_f | Fall time | | | 41 | | |
| Q_G | Total Gate Charge | $V_{GS}=-10V, V_{DS}=-15V, I_D=-2A$ | | 25 | | nC |
| Q_{GS} | Gate to Source Charge | | | 2 | | |
| Q_{GD} | Gate to Drain Charge | | | 4 | | |



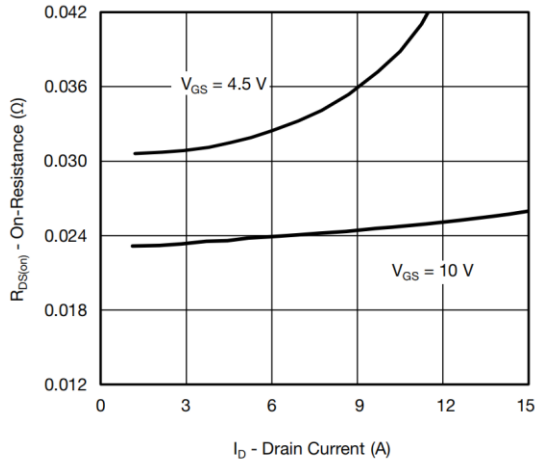
➤ **Typical Characteristics** ($T_A=25^\circ\text{C}$ unless otherwise noted)



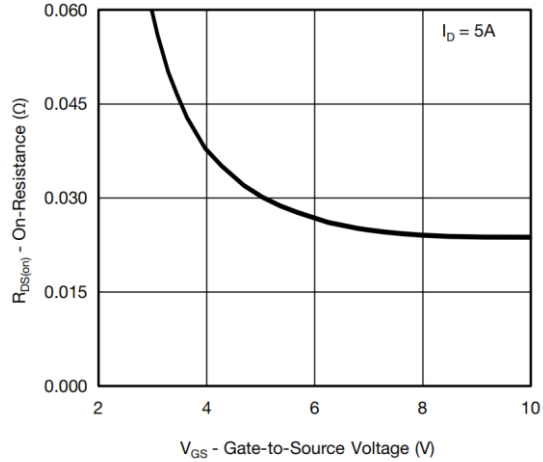
Output Characteristics



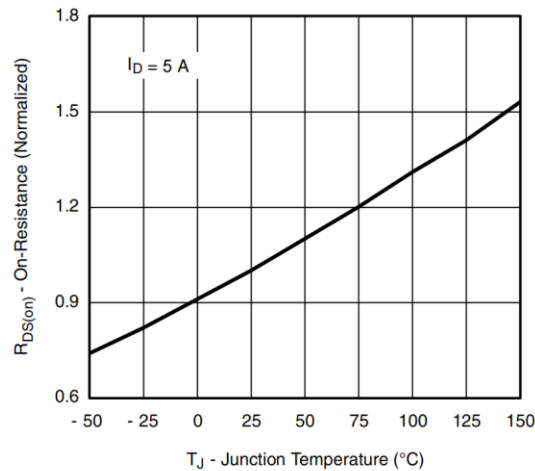
Transfer Characteristics



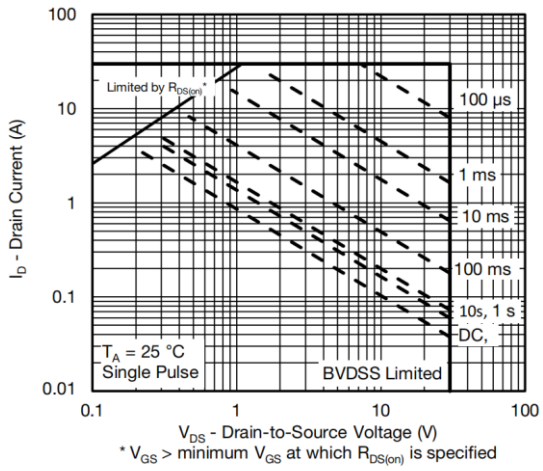
On-Resistance vs. Drain Current



On-Resistance vs. Gate-to-Source Voltage



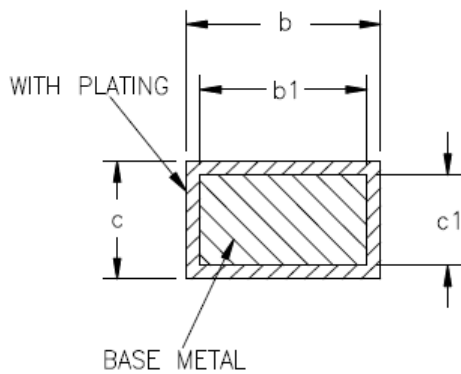
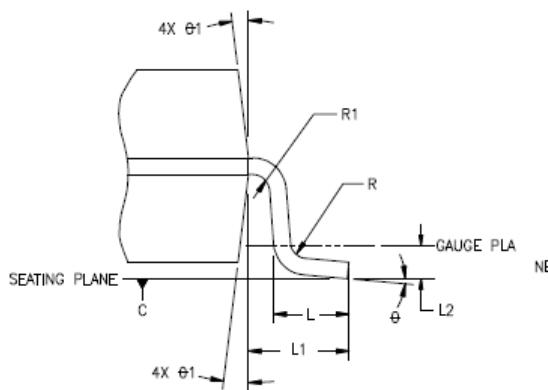
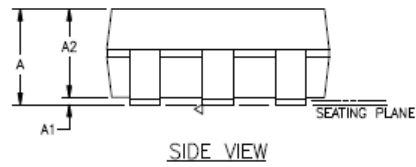
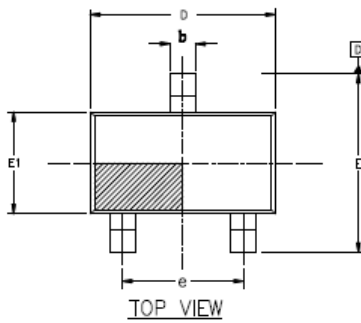
On-Resistance vs. Junction Temperature



Safe Operating Area



➤ Package Information



| SYMBOL | MIN | NOM | MAX |
|--------|---------|-------|-------|
| A | -- | -- | 1.35 |
| A1 | 0 | -- | 0.15 |
| A2 | 1.0 | 1.1 | 1.2 |
| b | 0.35 | -- | 0.45 |
| b1 | 0.32 | -- | 0.38 |
| c | 0.14 | -- | 0.20 |
| c1 | 0.14 | 0.15 | 0.16 |
| D | 2.82 | 2.92 | 3.02 |
| E | 2.60 | 2.80 | 3.00 |
| E1 | 1.526 | 1.626 | 1.726 |
| e | 1.8 | 1.9 | 2.0 |
| L | 0.35 | 0.45 | 0.6 |
| L1 | 0.6REF | | |
| L2 | 0.25REF | | |
| R | 0.1 | -- | -- |
| R1 | 0.1 | -- | -- |
| θ | 0° | 4° | 8° |
| θ1 | 5° | 10° | 15° |

NOTES:
 1. ALL DIMENSIONS REFER TO JEDEC STANDARD MO-178
 2. DIMENSION D DOES NOT INCLUDE MOLD FLASH
 3. DIMENSION E1 DOES NOT INCLUDE MOLD FLASH
 4. FLASH OR PROTRUSION SHALL NOT EXCEED 0.25mm PER SIDE.

SOT23-3L



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