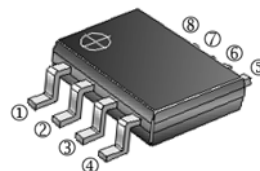


RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSG4435B-C uses advanced trench technology to provide excellent $R_{DS(ON)}$, shoot-through immunity body diode characteristics and ultra-low gate resistance. This device is ideally suited for use as a low side switch in Notebook CPU core power conversion.

SOP-8



APPLICATIONS

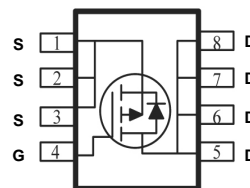
- Battery Switch
- Load Switch

MARKING



PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---------|-----|-------------|
| SOP-8 | 4K | 13 inch |



ORDER INFORMATION

| Part Number | Type |
|-------------|---------------------------------|
| SSG4435B-C | Lead (Pb)-free and Halogen-free |

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter | Symbol | Ratings | Unit |
|--|-----------------|----------|-----------------------------|
| Drain-Source Voltage | V_{DS} | -30 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | V |
| Continuous Drain Current ¹ | I_D | -9.1 | A |
| Pulsed Drain Current ² | I_{DM} | -36 | A |
| Power Dissipation ⁵ | P_D | 2 | W |
| Thermal Resistance Junction-Ambient ⁵ | $R_{\theta JA}$ | 62.5 | $^{\circ}\text{C}/\text{W}$ |
| Operating Junction & Storage Temperature Range | T_J, T_{STG} | -55~150 | $^{\circ}\text{C}$ |

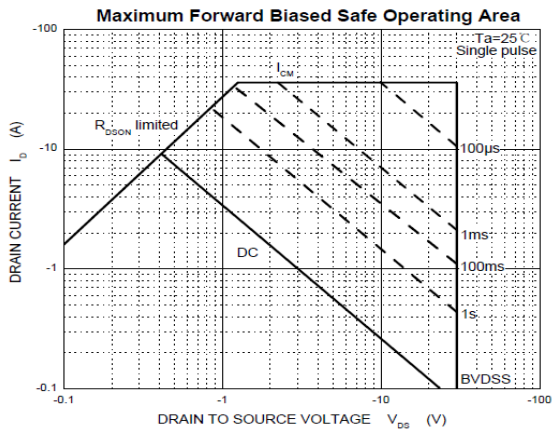
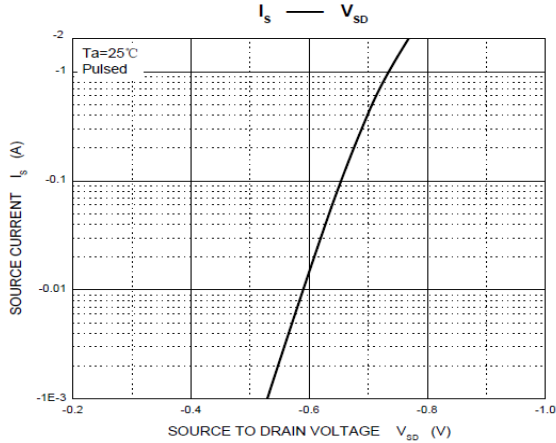
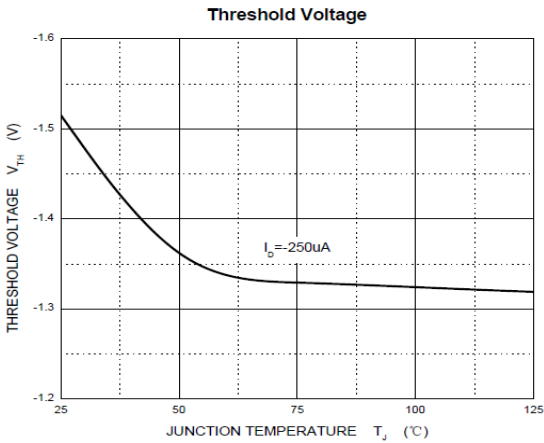
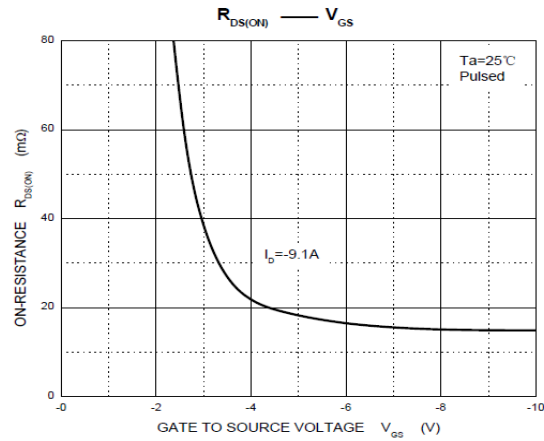
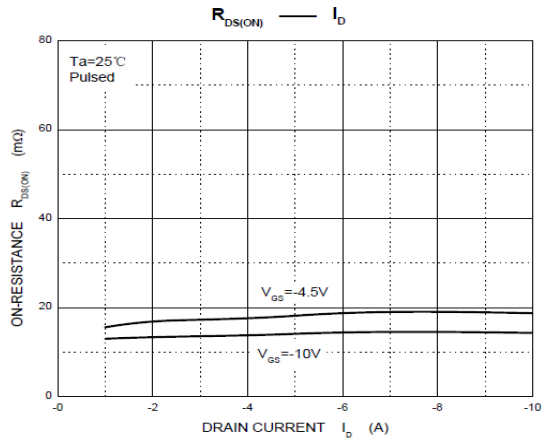
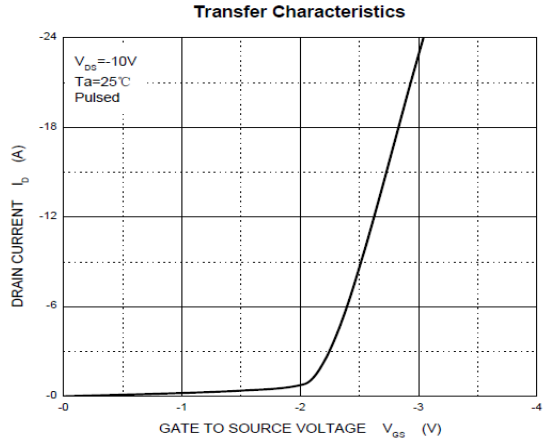
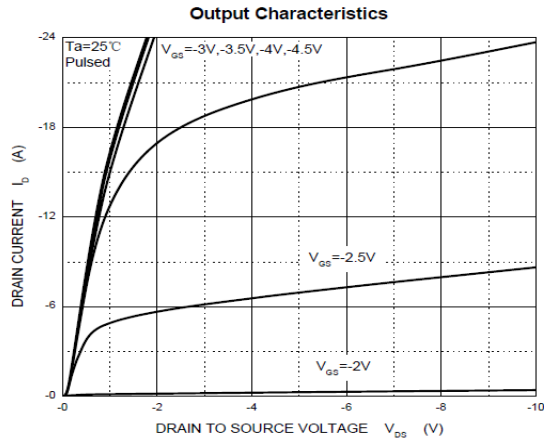
ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|--|--------------|------|------|-----------|---------------|---|
| Drain-Source Breakdown Voltage | BV_{DSS} | -30 | - | - | V | $V_{GS}=0, I_D = -250\mu\text{A}$ |
| Gate Threshold Voltage | $V_{GS(th)}$ | -1 | -1.4 | -3 | V | $V_{DS}=V_{GS}, I_D = -250\mu\text{A}$ |
| Gate-Body Leakage | I_{GSS} | - | - | ± 100 | nA | $V_{DS}=0\text{V}, V_{GS} = \pm 20\text{V}$ |
| Zero Gate Voltage Drain Current | I_{DSS} | - | - | -1 | μA | $V_{DS} = -30\text{V}, V_{GS}=0\text{V}$ |
| Drain-Source On-Resistance ² | $R_{DS(ON)}$ | - | 14 | 24 | m Ω | $V_{GS} = -10\text{V}, I_D = -9.1\text{A}$ |
| | | - | 18 | 35 | | $V_{GS} = -4.5\text{V}, I_D = -6.9\text{A}$ |
| Gate Resistance | R_G | - | 5.8 | - | Ω | $V_{DS}=V_{GS}=0, f=1\text{MHz}$ |
| Forward Transconductance | g_{fs} | - | 14 | - | S | $V_{DS} = -10\text{V}, I_D = -9.1\text{A}$ |
| Total Gate Charge | Q_g | - | 50 | - | nC | $I_D = -9.1\text{A}$ $V_{DS} = -15\text{V}, V_{GS} = -10\text{V}$ |
| | | - | 25 | - | | $I_D = -9.1\text{A}$ $V_{DS} = -15\text{V}$ $V_{GS} = -4.5\text{V}$ |
| Gate-Source Charge | Q_{gs} | - | 4 | - | | |
| Gate-Drain Charge | Q_{gd} | - | 7.5 | - | | |
| Turn-On Delay Time | $T_{d(on)}$ | - | 15 | - | nS | $I_D = -1\text{A}$ $V_{DD} = -15\text{V}$ $V_{GS} = -10\text{V}$ $R_G=1\Omega$ $R_L=15\Omega$ |
| Rise Time | T_r | - | 15 | - | | |
| Turn-Off Delay Time | $T_{d(off)}$ | - | 70 | - | | |
| Fall Time | T_f | - | 25 | - | | |
| Input Capacitance | C_{iss} | - | 1655 | - | pF | $V_{DS} = -15\text{V}$ $V_{GS}=0$ $f=1\text{MHz}$ |
| Output Capacitance | C_{oss} | - | 240 | - | | |
| Reverse Transfer Capacitance | C_{rss} | - | 227 | - | | |
| Source-Drain Diode | | | | | | |
| Diode Forward Voltage ⁴ | V_{SD} | - | - | -1.2 | V | $V_{GS}=0\text{V}, I_S = -2\text{A}$ |
| Continuous Drain-Source Diode Forward Current ¹ | I_S | - | - | -9.1 | A | |
| Pulsed Drain-Source Diode Forward Current ² | I_{SM} | - | - | -36 | | |

Notes:

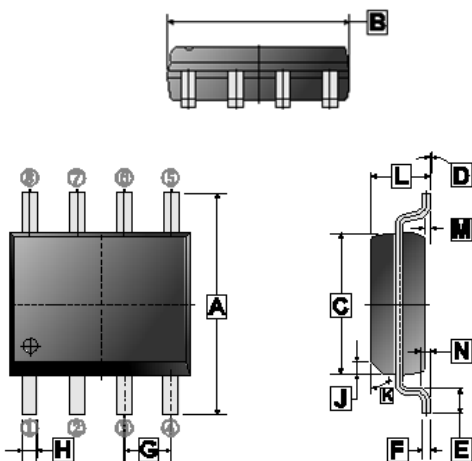
- $T_C=25^\circ\text{C}$ Limited only by maximum temperature allowed.
- $P_W \leq 10\mu\text{s}$, Duty cycle $\leq 1\%$.
- Pulse Test : Pulse Width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production.
- The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ\text{C}$, $t \leq 10\text{sec}$.

CHARACTERISTIC CURVES



PACKAGE OUTLINE DIMENSIONS

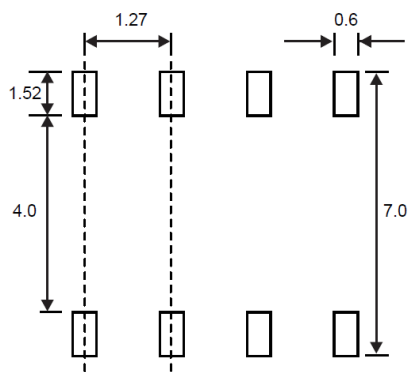
SOP-8



| REF. | Millimeter | |
|------|------------|-------|
| | Min. | Max. |
| A | 5.79 | 6.20 |
| B | 4.70 | 5.11 |
| C | 3.80 | 4.00 |
| D | 0° | 8° |
| E | 0.40 | 1.27 |
| F | 0.10 | 0.25 |
| G | 1.27 TYP. | |
| H | 0.33 | 0.51 |
| J | 0.375 REF. | |
| K | 45° REF. | |
| L | 1.30 | 1.752 |
| M | 0 | 0.25 |
| N | 0.25 REF. | |

MOUNTING PAD LAYOUT

SOP-8



*Dimensions in millimeters