



# SSC8136GT4

## N-Channel Enhancement Mode MOSFET

- **Features**

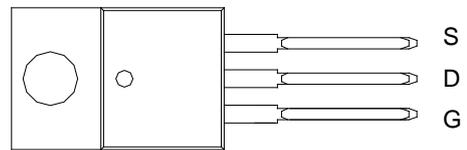
| VDS | VGS  | RDSon TYP | ID   |
|-----|------|-----------|------|
| 30V | ±20V | 3.5mR@10V | 106A |
|     |      | 4.8mR@4V5 |      |

- **Applications**

- Desktop Computer
- Notebook
- DC-DC converter

- **Pin configuration**

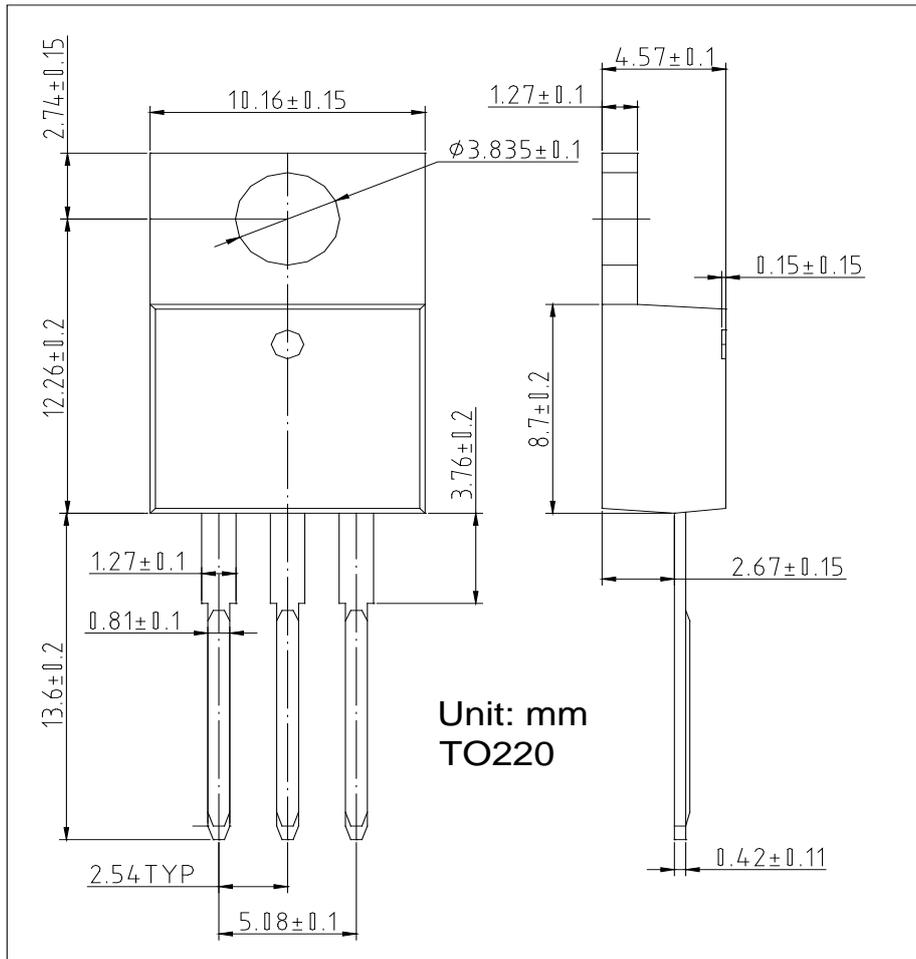
Top View



- **General Description**

This device uses advanced trench technology to provide excellent RDS(ON) and low gate charge. This device is suitable for use as a load switch or in PWM applications.

- **Package Information**





# SSC8136GT4

● **Absolute Maximum Ratings @  $T_A = 25^\circ\text{C}$  unless otherwise noted**

| Parameter  |                                   | Symbol                 | Limit      | Unit             |
|--|-----------------------------------|------------------------|------------|------------------|
| Drain-Source Voltage                             |                                   | $V_{DSS}$              | 30         | V                |
| Gate-Source Voltage                              |                                   | $V_{GSS}$              | $\pm 20$   | V                |
| Drain Current (Note 1)                           | Continuous $T_A=25^\circ\text{C}$ | $I_D$                  | 106        | A                |
|  | Pulsed (Note 2)                   | $I_{DM}$               | 500        | A                |
| Total Power Dissipation (Note 1)                 |                                   | $T_C=25^\circ\text{C}$ | 300        | W                |
|  |                                   | $T_C=25^\circ\text{C}$ | 150        | W                |
| Operating and Storage Junction Temperature Range |                                   | $T_J, T_{STG}$         | -55 to 150 | $^\circ\text{C}$ |

● **Electrical Characteristics @  $T_A = 25^\circ\text{C}$  unless otherwise noted**

| Parameter                        | Symbol        | Test Conditions  | Min | Typ  | Max       | Unit          |
|----------------------------------|---------------|--|-----|------|-----------|---------------|
| Drain-Source Breakdown Voltage   | $V_{(BR)DSS}$ | $V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$  | 30  | --   | --        | V             |
| Gate Threshold Voltage           | $V_{GS(TH)}$  | $V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$  | 1.3 | 1.5  | 3.0       | V             |
| Gate-Body Leakage Current        | $I_{GSS}$     | $V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$  | --  | --   | $\pm 100$ | nA            |
| Zero Gate Voltage Drain Current  | $I_{DSS}$     | $V_{DS} = 24\text{ V}, V_{GS} = 0\text{ V}$  | --  | --   | 1         | $\mu\text{A}$ |
| Drain-Source On-State Resistance | $R_{DS(ON)}$  | $V_{GS} = 10\text{ V}, I_D = 30\text{A}$   | --  | 3.5  | 4.5       | mR            |
|                                  |               | $V_{GS} = 4.5\text{ V}, I_D = 30\text{A}$  | --  | 4.8  | 6         |               |
| Forward Transconductance         | $G_{FS}$      | $V_{DS} = 5\text{ V}, I_D = 5\text{ A}$  | --  | 7.3  | --        | S             |
| Diode Forward Voltage            | $V_{SD}$      | $V_{GS} = 0\text{ V}, I_S = 10\text{ A}$   | --  | 0.86 | 1.3       | V             |
| Input Capacitance                | $C_{ISS}$     | $V_{DS} = 15\text{ V}, V_{GS} = 0\text{ V},$<br>$f = 1.0\text{ MHz}$   | --  | 2100 | --        | pF            |
| Output Capacitance               | $C_{OSS}$     |  | --  | 1010 | --        |               |
| Reverse Transfer Capacitance     | $C_{RSS}$     |  | --  | 874  | --        |               |
| Turn-On Delay Time               | $T_{D(ON)}$   | $V_{DS} = 15\text{ V}, R_L = 15\text{R},$<br>$I_{DS} = 1\text{A},$<br>$V_{GS} = 10\text{V}, R_{GEN}=6\text{R}$ | --  | 18   | --        | nS            |
| Turn-Off Delay Tim               | $T_{D(OFF)}$  |  | --  | 61   | --        |               |

Notes:

1. DUT is mounted on a 1in<sup>2</sup> FR-4 board with 2oz. Copper in a still air environment at 25°C, the current rating is based on the DC (<10s) test conditions.
2. Repetitive rating, pulse width limited by junction temperature. 300us Pulse Drain Current Tested.
3. Current limited by bond wire.

● Typical Performance Characteristics

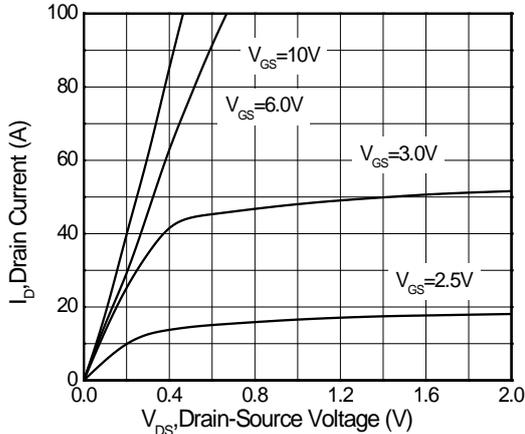


Fig1. Drain-Source Voltage vs. Drain Current

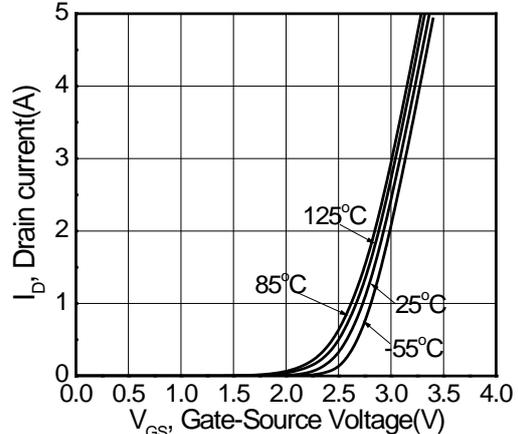


Fig2. Transfer Characteristics

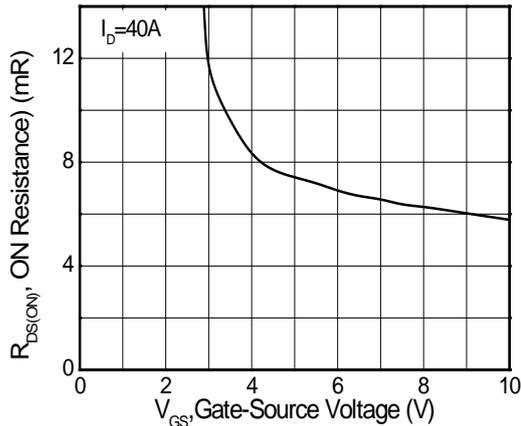


Fig3. Gate-Source Voltage vs. On-Resistance

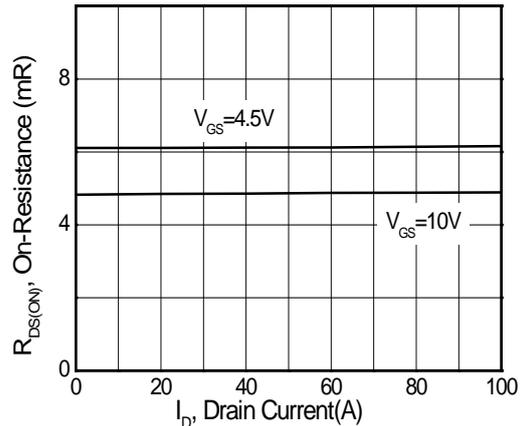


Fig4. Drain Current vs. On-Resistance

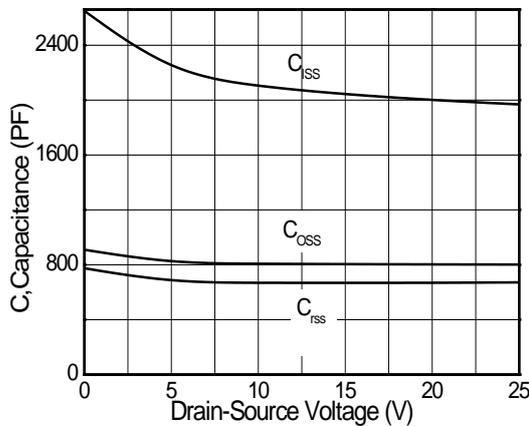


Fig5. Drain-Source Voltage vs. Capacitance

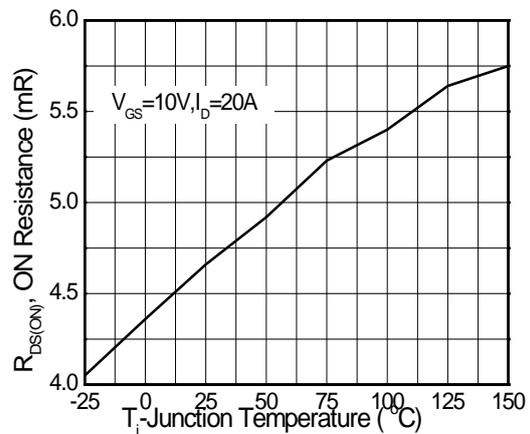
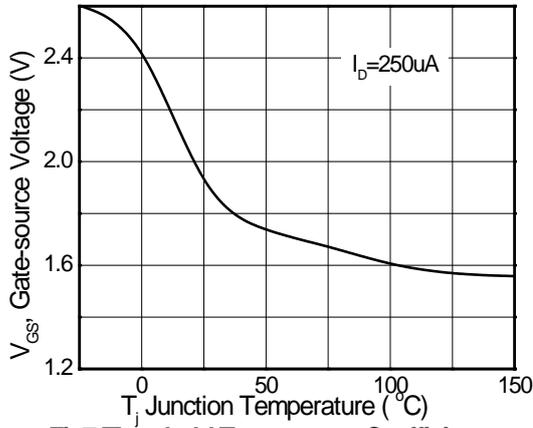
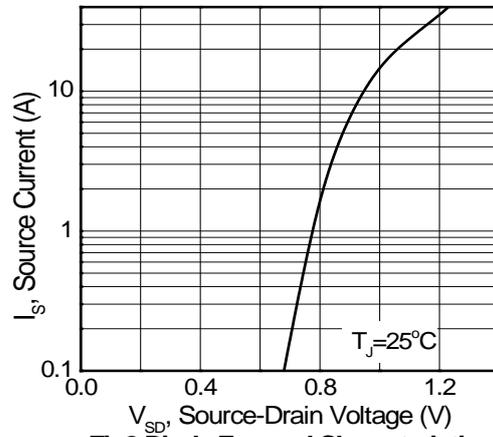


Fig6. Junction Temperature vs. On-Resistance



**Fig7.Threshold Temperature Coefficiency**



**Fig8.Diode Forward Characteristics**



# SSC8136GT4

---

## DISCLAIMER

AFSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. AFSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE graphs PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G., OUTSIDE SPECIFIED POWER SUPPLY RANGE ) AND THEREFORE OUTSIDE THE WARRANTED RANGE.