# SSC8332GSB

## Dual N-Channel Enhancement MOSFET

### ➢ Features

| VDS | VGS | RDSON Typ. | ID |
|---|---|---|---|
| 30V | ±20V | 28mR@10V | 3.8A |
| | | 40mR@4V5 | |

### ➢ Description

SSC8332GSB uses advanced trench technology to provide excellent RDSON and low gate charge. The complementary MOSFETS may be used to form a level shifted high side switch, and for a host of other applications.

### ➢ Applications

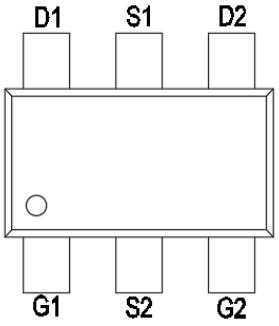
- Inverter
- DC-DC converter
- Half and Full Bridge Topology

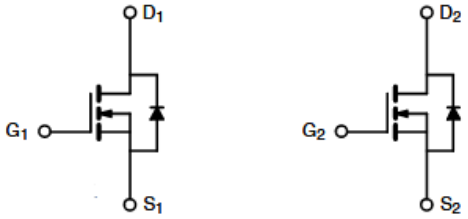
### ➢ Ordering Information

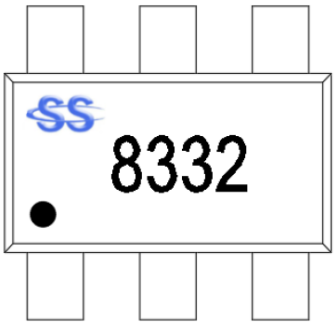
| Device | Package | Shipping |
|---|---|---|
| SSC8332GSB | SOT23-6L | 3000/Reel |

### ➢ Pin configuration

Top view




Marking

## ➢ Absolute Maximum Ratings($T_A$=25℃ 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] | TA=25℃ | 3.8 | A |
| | | TA=70℃ | 2.3 | A |
| $I_{DM}$ | Pulsed Drain Current [b] | | 16 | A |
| $P_{DSM}$ | Power Dissipation [a] | | 2.4 | W |
| $P_D$ | Power Dissipation [c] | TA=25℃ | 1.25 | W |
| | | TA=70℃ | 0.8 | W |
| $T_J$ | Operation junction temperature | | -55 to 150 | ℃ |
| $T_{STG}$ | Storage temperature range | | -55 to 150 | ℃ |

## ➢ Thermal Resistance Ratings($T_A$=25℃ unless otherwise noted)

| Symbol | Parameter | Typical | Maximum | Unit |
|---|---|---|---|---|
| $R_{\theta JA}$ | Junction-to-Ambient Thermal Resistance [a] | | 100 | ℃/W |
| $R_{\theta JC}$ | Junction-to-Case Thermal Resistance | | 52 | |

Note:

a. 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℃.The value in any given application depends on the user is specific board design. The current rating is based on the t≤ 10s thermal resistance rating.

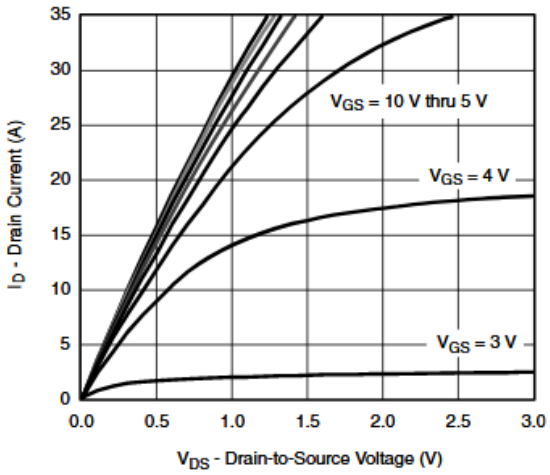
b. Repetitive rating, pulse width limited by junction temperature.

c. The power dissipation $P_D$ is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

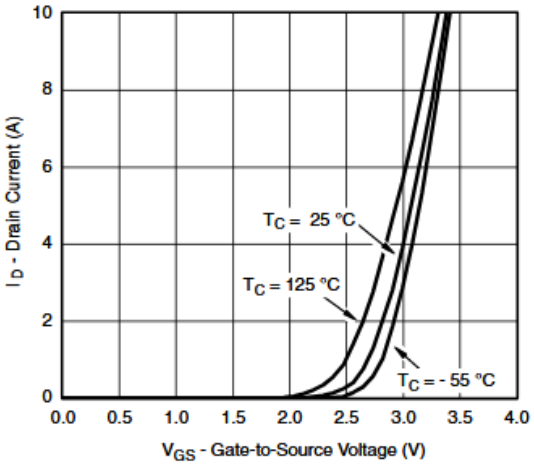
➢ **Electronics Characteristics**($T_A$=25℃ unless otherwise noted)

| Symbol | Parameter | Test Conditions | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | VGS=0V , ID=250uA | 30 | | | V |
| $V_{GS\ (th)}$ | Gate Threshold Voltage | VDS=VGS , ID=250uA | 1 | 1.5 | 2 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | VGS=10V , ID=3.8A | | 28 | 38 | mR |
| | | VGS=4.5V , ID=3A | | 40 | 55 | |
| $I_{DSS}$ | Zero Gate Voltage Drain Current | VDS=24V , VGS=0V | | | 1 | uA |
| $I_{GSS}$ | Gate-Source leak current | VGS=±20V , VDS=0V | | | ±100 | nA |
| $G_{FS}$ | Transconductance | VDS=5V , ID=3.6A | | 11 | | S |
| $V_{SD}$ | Forward Voltage | VGS=0V , IS=1.1A | | 0.78 | 1.3 | V |
| Ciss | Input Capacitance | VDS=15V , VGS=0V, f=1MHZ | | 210 | | pF |
| Coss | Output Capacitance | | | 44 | | |
| Crss | Reverse Transfer Capacitance | | | 16 | | |
| Qg | Total Gate Charge | VDS=15V , VGS=10V, ID=3.8A | | 6 | | nC |
| Qgs | Gate Source Charge | | | 1.1 | | |
| Qgd | Gate Drain Charge | | | 1.5 | | |
| $T_{D(ON)}$ | Turn-on delay time | VDS=15V, VGS=10V, RL=10R, RGEN=6R | | 11 | | ns |
| Tr | Rise time | | | 55 | | |
| $T_{D(OFF)}$ | Turn-off delay time | | | 12 | | |
| Tf | Fall time | | | 22 | | |

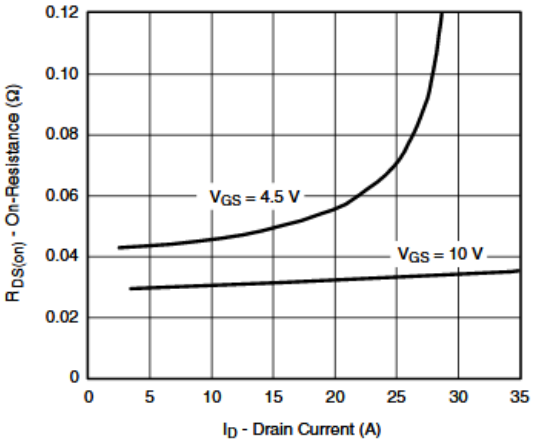
## ➢ N-Channel Typical Characteristics($T_A$=25℃ unless otherwise noted)



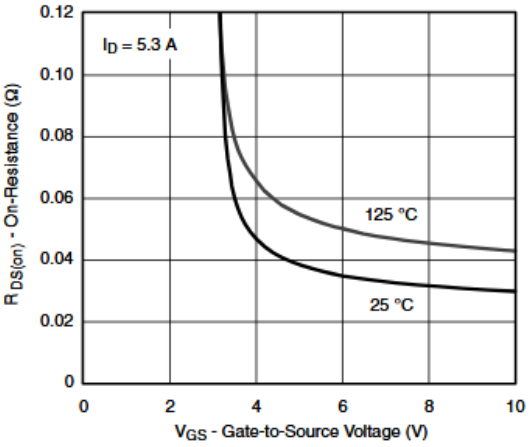

**Output Characteristics**



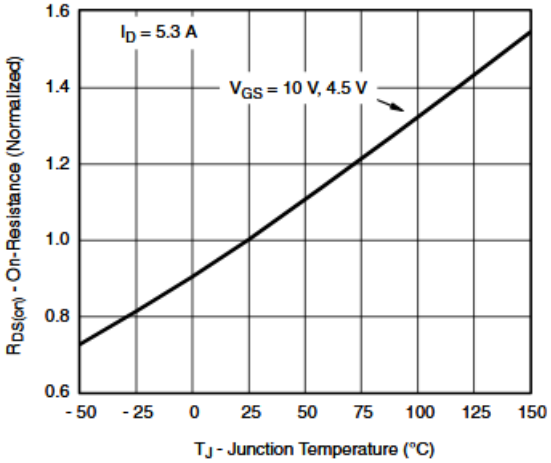

**Transfer Characteristics**



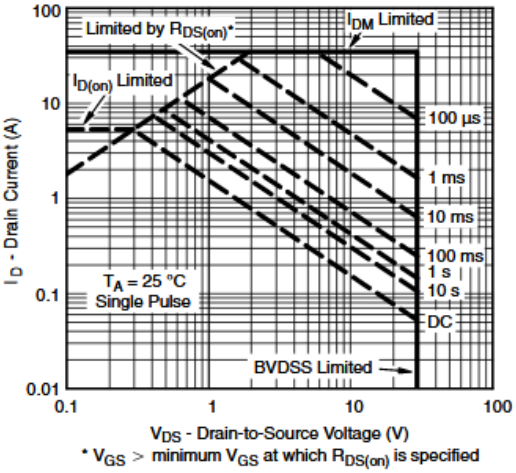

**On-Resistance vs. Drain Current and Gate Voltage**




**On-Resistance vs. Gate-to-Source Voltage**

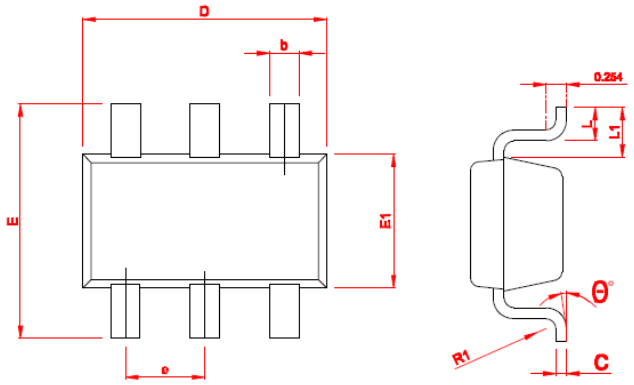


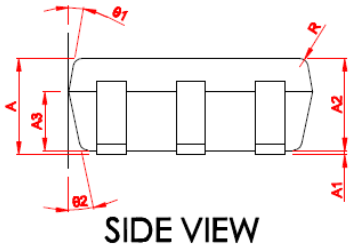

**On-Resistance vs. Junction Temperature**




**Safe Operating Area, Junction-to-Ambient**

## ➢ Package Information




| SYMBOL | MILLIMETER | | |
|---|---|---|---|
| | MIN | NOM | MAX |
| A | 1.06 | 1.15 | 1.24 |
| * A1 | 0.01 | 0.05 | 0.09 |
| * A2 | 1.05 | 1.10 | 1.15 |
| A3 | 0.65 | 0.70 | 0.75 |
| * b | 0.30 | 0.35 | 0.45 |
| * c | 0.117 | 0.127 | 0.157 |
| * D | 2.87 | 2.92 | 2.97 |
| * E | 2.72 | 2.80 | 2.88 |
| * E1 | 1.55 | 1.60 | 1.65 |
| * e | 0.90 | 0.95 | 1.00 |
| * L | 0.32 | 0.40 | 0.48 |
| * L1 | 0.55 | 0.60 | 0.65 |
| R | 0.10 REF | | |
| R1 | 0.12 REF | | |
| * θ | 0 | -- | 8° |
| θ1 | 8° | 10° | 12° |
| θ2 | 10° | 12° | 14° |