



SSC8068GN6

N-Channel Enhancement Mode MOSFET

➤ Features

| V _{DS} | V _{GS} | R _{DS(ON)} Typ. | I _D |
|-----------------|-----------------|--------------------------|----------------|
| 60V | ±20V | 23mΩ@10V | 30A |
| | | 27mΩ@4V5 | |

➤ Description

This SSC8068GN6 uses advanced trench technology to provide excellent R_{DS(ON)} 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.

100% UIS + ΔVDS + R_g Tested!

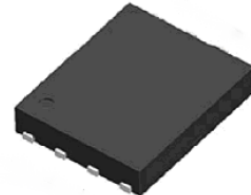
➤ Applications

- Load Switch
- PWM Application
- Power Management
- Motor Driving in Power Tool, E-vehicle, Robotics

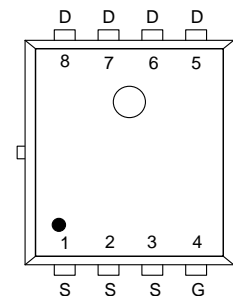
➤ Ordering Information

| Device | Package | Shipping |
|------------|------------|-----------|
| SSC8068GN6 | PDFN5X6-8L | 5000/Reel |

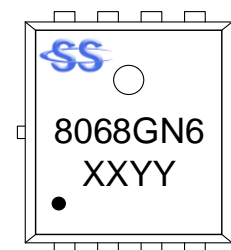
➤ Pin configuration



PDFN5X6-8L



Pin Configuration (Top View)



Marking

(XXYY: Internal Traceability Code)



➤ Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

| Symbol | Parameter | Ratings | Unit |
|------------------|---|-----------------------|------|
| V _{DSS} | Drain-to-Source Voltage | 60 | V |
| V _{GSS} | Gate-to-Source Voltage | ±20 | V |
| I _D | Continuous Drain Current ^d | T _C =25°C | 30 |
| | | T _C =100°C | 18 |
| I _{DSM} | Continuous Drain Current ^a | T _A =25°C | 10 |
| | | T _A =70°C | 8 |
| I _{DM} | Pulsed Drain Current ^b | 120 | A |
| P _D | Power Dissipation ^c | T _C =25°C | 43 |
| | | T _C =100°C | 17 |
| P _{DSM} | Power Dissipation ^a | T _A =25°C | 4.1 |
| | | T _A =70°C | 2.6 |
| I _{AS} | Avalanche Current ^b L=0.5mH Single Pulse | 10 | A |
| E _{AS} | Avalanche Energy ^b L=0.5mH Single Pulse | 25 | mJ |
| T _J | Operation junction temperature | -55~150 | °C |
| T _{STG} | Storage temperature range | -55~150 | |

➤ Thermal Resistance Ratings (T_A=25°C unless otherwise noted)

| Symbol | Parameter | Ratings | Unit |
|------------------|---|---------|------|
| R _{θJA} | Junction-to-Ambient Thermal Resistance ^a | 30 | °C/W |
| R _{θJC} | Junction-to-Case Thermal Resistance | 2.9 | |

Note:

- The value of R_{θJA} is measured with the device mounted on 1 in² FR-4 board with 2oz.copper, in a still air environment with T_A=25°C. The value in any given application depends on the user is specific board design. The power dissipation is based on the t≤10s thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- 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.
- The maximum current rating is package limited.

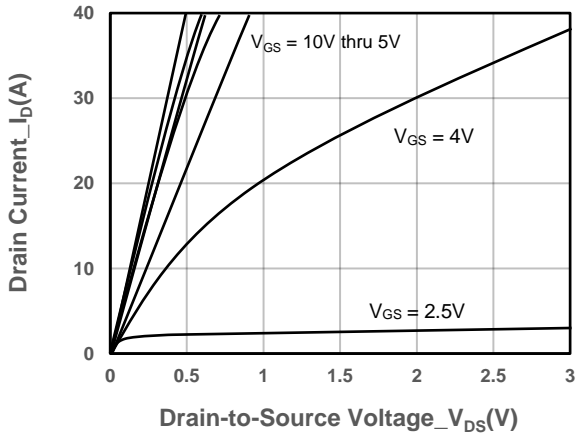


➤ **Electrical Characteristics (T_A=25°C unless otherwise noted)**

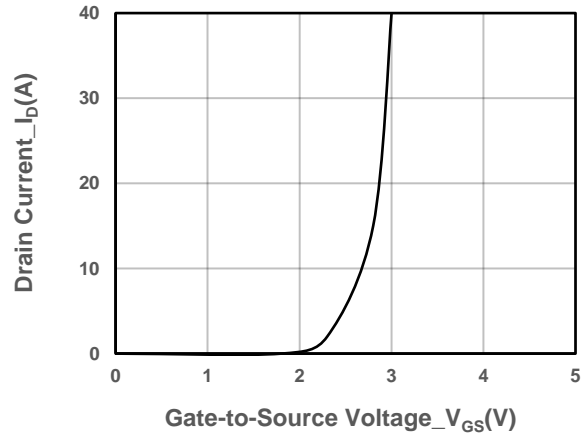
| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------------|----------------------|---|------|------|------|------|
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} = 0V, I _D = 250μA | 60 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = 250uA | 1 | 1.5 | 2.5 | V |
| Drain-Source On-Resistance | R _{DS(on)} | V _{GS} = 10V, I _D = 6A | | 23 | 30 | mΩ |
| | | V _{GS} = 4.5V, I _D = 3A | | 27 | 40 | |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = 60V, V _{GS} = 0V | | | 1 | μA |
| Gate-Source Leak Current | I _{GSS} | V _{GS} = ±20V, V _{DS} = 0V | | | ±100 | nA |
| Transconductance | G _{FS} | V _{DS} = 5V, I _D = 5A | | 10 | | s |
| Forward Voltage | V _{SD} | V _{GS} = 0V, I _S = 5A | | 0.8 | 1.3 | V |
| Gate Resistance | R _G | V _{DS} = 0V, f = 1MHz | | 1.3 | | Ω |
| Input Capacitance | C _{ISS} | V _{DS} = 50V, V _{GS} = 0V, f = 1MHz | | 1400 | | pF |
| Output Capacitance | C _{OSS} | | | 70 | | |
| Reverse Transfer Capacitance | C _{RSS} | | | 58 | | |
| Total Gate Charge | Q _G | V _{GS} = 10V, V _{DS} = 30V, I _D = 5A | | 6 | | nC |
| Gate to Source Charge | Q _{GS} | | | 1.6 | | |
| Gate to Drain Charge | Q _{GD} | | | 1.3 | | |
| Turn-on Delay Time | T _{D(ON)} | V _{GS} = 10V, V _{DS} = 10V, R _L = 6Ω, R _G = 6Ω | | 8 | | ns |
| Rise Time | T _r | | | 58 | | |
| Turn-off Delay Time | T _{D(OFF)} | | | 20 | | |
| Fall Time | T _f | | | 88 | | |
| Diode Recovery Time | T _{rr} | I _F =5A, di/dt=500A/us | | 12 | | ns |
| Diode Recovery Charge | Q _{rr} | I _F =5A, di/dt=500A/us | | 15 | | nC |



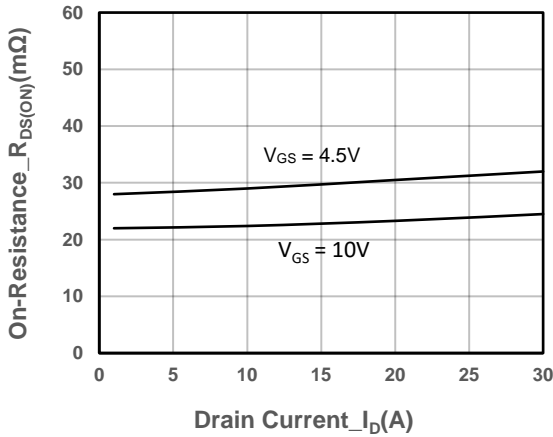
➤ Typical Performance Characteristics (T_A=25°C unless otherwise noted)



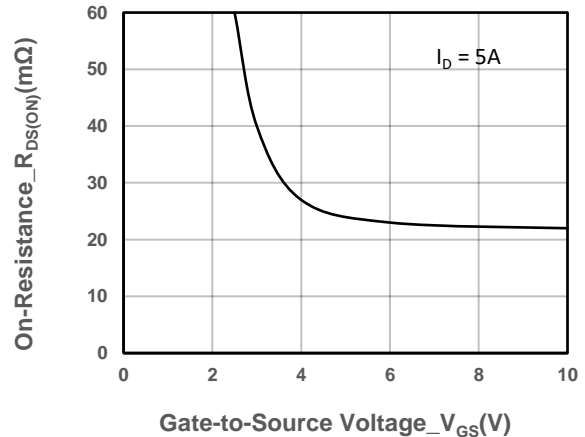
Output Characteristics



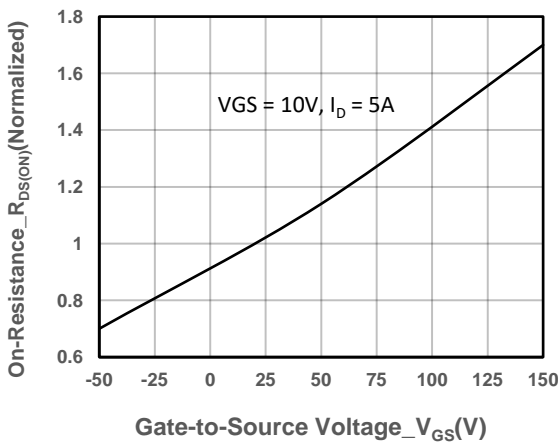
Transfer Characteristics



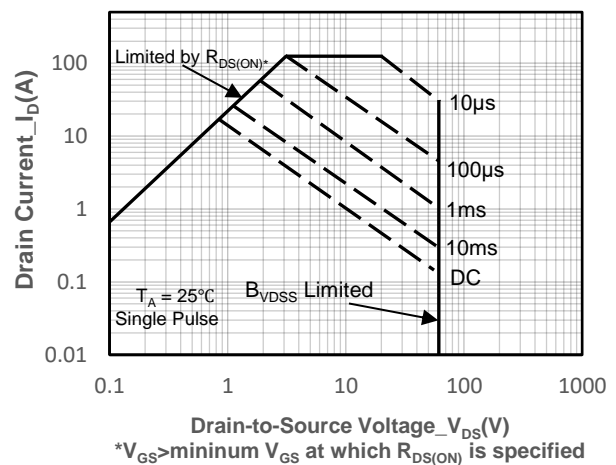
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

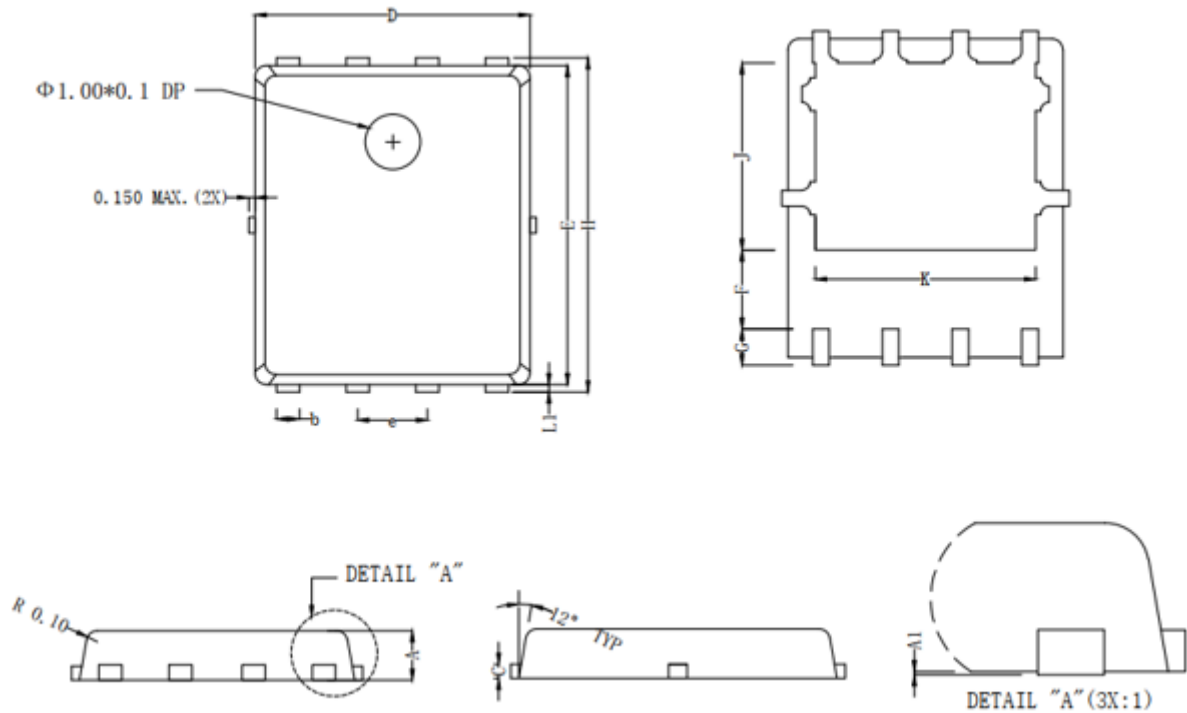


On-Resistance vs. Junction Temperature



Safe Operating Area vs. Junction-to-Ambient

➤ Package Information



| Symbol | Dimensions In Millimeters | | |
|-----------|---------------------------|------|------|
| | Min. | Nom. | Max. |
| A | 0.90 | 1.00 | 1.10 |
| A1 | 0.00 | 0.03 | 0.05 |
| b | 0.25 | 0.03 | 0.35 |
| c | 0.254 REF | | |
| D | 4.80 | 4.90 | 5.00 |
| F | 1.35 REF | | |
| E | 5.65 | 5.75 | 5.85 |
| e | 1.27 BSC | | |
| H | 5.90 | 6.00 | 6.10 |
| L1 | 0.10 | 0.13 | 0.16 |
| G | 0.55 REF | | |
| K | 4.00 REF | | |
| J | 3.45 REF | | |



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