



SSC8036GN2

N-Channel Enhancement Mode MOSFET

➤ Features

| V_{DS} | V_{GS} | $R_{DS(ON)}$ Typ. | I_D |
|----------|-----------|-------------------|-------|
| 30V | $\pm 20V$ | 14m Ω @10V | 7A |
| | | 20m Ω @4V5 | |

➤ Description

This device is produced with high cell density trench technology, uses advanced trench technology to provide excellent RDSON and low gate charge. This device is suitable for use as a load switch or in PWM applications.

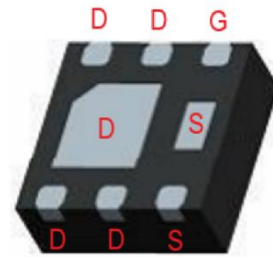
➤ Applications

- Load Switch
- Portable Devices
- DCDC Conversion

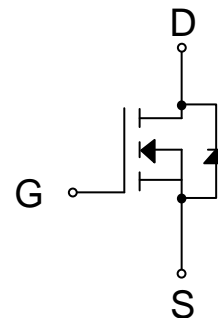
➤ Ordering Information

| Device | Package | Shipping |
|------------|------------|-----------|
| SSC8036GN2 | DFN2020-6L | 3000/Reel |

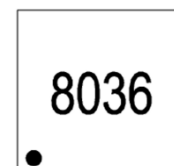
➤ Pin Configuration



DFN2020-6L (Bottom View)



Pin Configuration



Marking



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

| Parameter | | Symbol | Ratings | Unit |
|---------------------------------------|--------------------------|-----------|----------|--------------------|
| Drain-to-Source Voltage | | V_{DS} | 30 | V |
| Gate-to-Source Voltage | | V_{GS} | ± 20 | V |
| Continuous Drain Current ^d | $T_C=25^{\circ}\text{C}$ | I_D | 7 | A |
| Pulsed Drain Current ^b | | I_{DM} | 27 | A |
| Power Dissipation ^c | $T_C=25^{\circ}\text{C}$ | P_D | 4.4 | W |
| Power Dissipation | | P_{DSM} | 1.7 | W |
| Operation junction temperature | | T_J | -55~150 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{STG} | -55~150 | |

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

| Parameter | Symbol | Maximum | Unit |
|---|-----------------|---------|----------------------|
| Junction-to-Ambient Thermal Resistance ^a | $R_{\theta JA}$ | 80 | $^{\circ}\text{C/W}$ |
| Junction-to-Case Thermal Resistance | $R_{\theta JC}$ | 35 | $^{\circ}\text{C/W}$ |

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 power dissipation is based on the $t \leq 10\text{s}$ thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation P_D is based on $T_{J(MAX)}=150^{\circ}\text{C}$, 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.

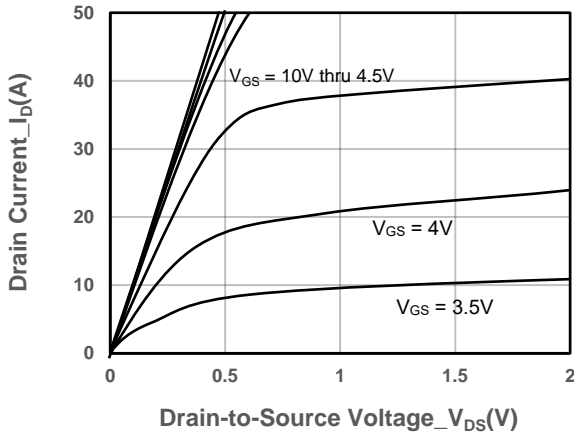


➤ **Electrical Characteristics (T_A=25°C unless otherwise noted)**

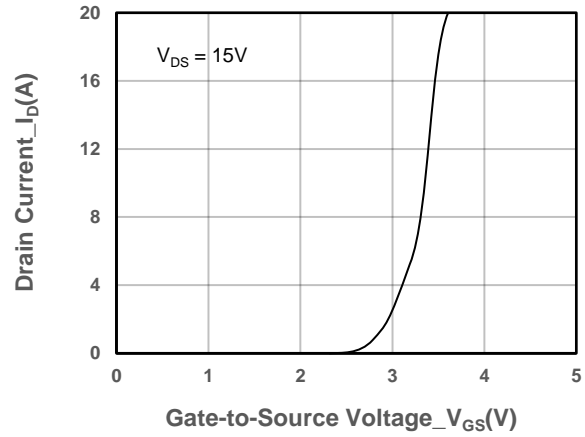
| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------------|----------------------|--|------|------|------|------|
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} = 0V, I _D = 250uA | 30 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = 250uA | 1 | 1.65 | 2 | V |
| Drain-Source On-Resistance | R _{DS(on)} | V _{GS} = 10V, I _D = 5.8A | | 14 | 19 | mΩ |
| | | V _{GS} = 4.5V, I _D = 5A | | 20 | 27 | |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = 24V, V _{GS} = 0V | | | 1 | uA |
| Gate-Source Leak Current | I _{GSS} | V _{GS} = ±20V, V _{DS} = 0V | | | ±100 | nA |
| Transconductance | G _{FS} | V _{DS} = 5V, I _D = 5A | | 15 | | S |
| Forward Voltage | V _{SD} | V _{GS} = 0V, I _S = 1A | | 0.7 | 1 | V |
| Input Capacitance | C _{ISS} | V _{DS} = 15V, V _{GS} = 0V, f = 1MHz | | 402 | | pF |
| Output Capacitance | C _{OSS} | | | 90 | | |
| Reverse Transfer Capacitance | C _{RSS} | | | 63 | | |
| Total Gate Charge | Q _G | V _{GS} = 10V, V _{DS} = 10V, I _D = 4A | | 10.6 | | nC |
| Gate to Source Charge | Q _{GS} | | | 1.9 | | |
| Gate to Drain Charge | Q _{GD} | | | 2.1 | | |
| Turn-on Delay Time | T _{D(ON)} | V _{GS} = 10V, V _{DS} = 15V, R _L = 2.3Ω, R _G = 3Ω, | | 17 | | ns |
| Rise Time | T _r | | | 33 | | |
| Turn-off Delay Time | T _{D(OFF)} | | | 15 | | |
| Fall Time | T _f | | | 32 | | |



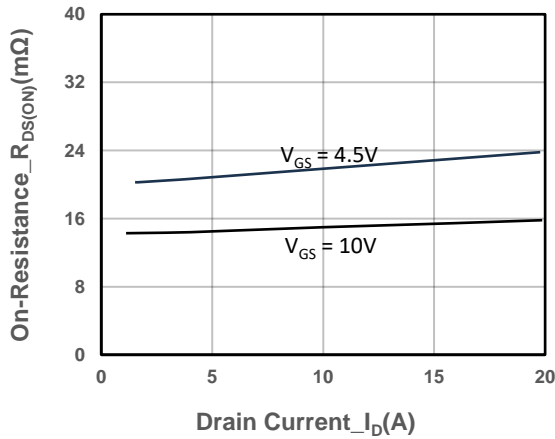
➤ Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



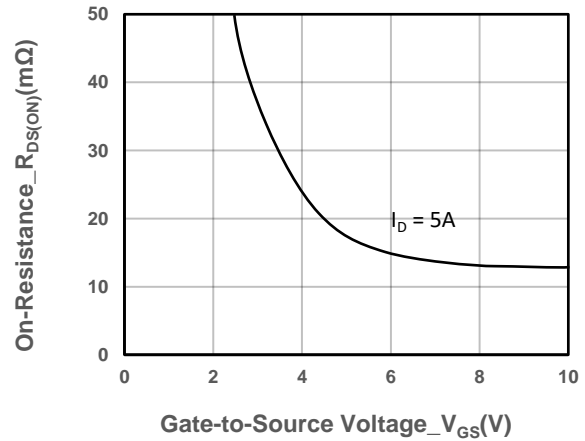
Output Characteristics



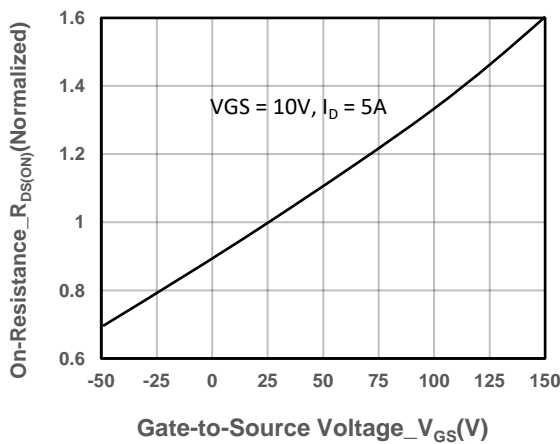
Transfer Characteristics



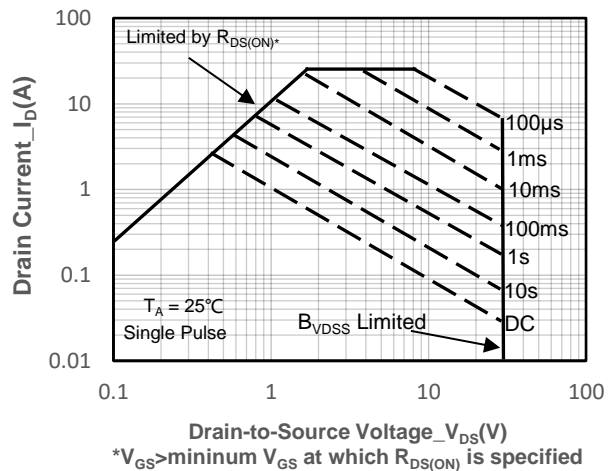
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

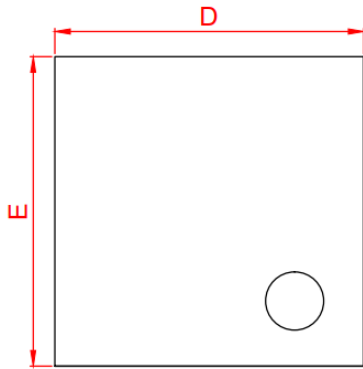


On-Resistance vs. Junction Temperature

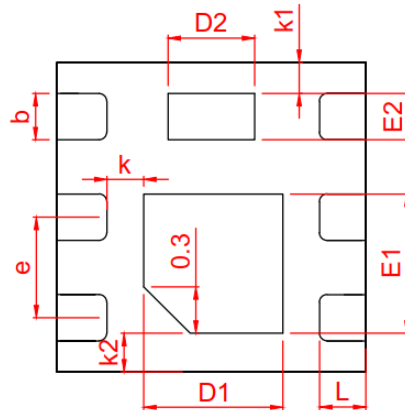


Safe Operating Area vs. Junction-to-Ambient

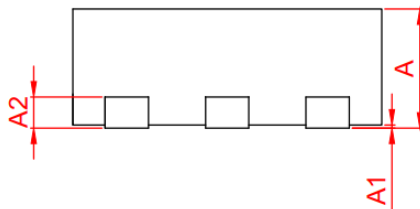
➤ Package Information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

| SYMBOL | MILLIMETER | | |
|--------|------------|------|------|
| | MIN | NOM | MAX |
| A | 0.50 | 0.55 | 0.60 |
| * A1 | 0.00 | 0.02 | 0.05 |
| * b | 0.25 | 0.30 | 0.35 |
| * A2 | 0.152 BSC | | |
| * D | 1.95 | 2.00 | 2.05 |
| * E | 1.95 | 2.00 | 2.05 |
| * E1 | 0.80 | 0.90 | 1.00 |
| * E2 | 0.25 | 0.30 | 0.35 |
| * D1 | 0.80 | 0.90 | 1.00 |
| * D2 | 0.46 | 0.56 | 0.66 |
| * e | 0.65 REF | | |
| * L | 0.25 | 0.30 | 0.35 |
| * K | 0.20 | 0.25 | 0.30 |
| * K1 | 0.15 | 0.20 | 0.25 |
| * K2 | 0.20 | 0.25 | 0.30 |

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