



SSC8530GN4

Dual N-Channel Enhancement MOSFET

➤ Features

| VDS | VGS | RDSON Typ. | ID |
|-----|------|------------|-----|
| 30V | ±20V | 10mR@10V | 18A |
| | | 12.5mR@4V5 | |

➤ Description

SSC8530GN4 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.

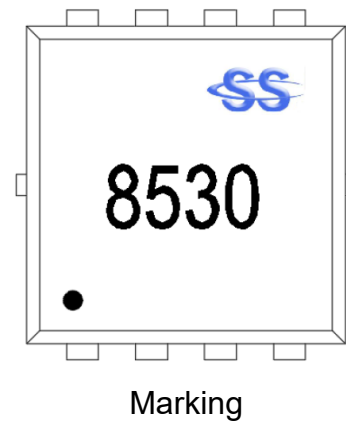
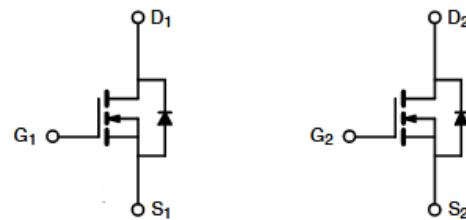
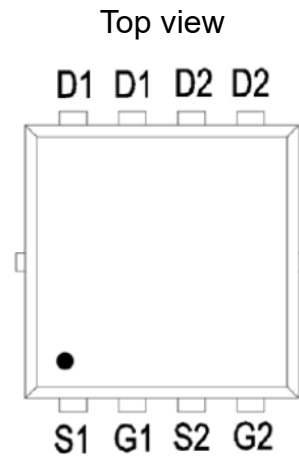
➤ Applications

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

➤ Ordering Information

| Device | Package | Shipping |
|------------|-------------|-----------|
| SSC8530GN4 | PDFN3.3X3.3 | 5000/Reel |

➤ Pin configuration



**➤ Absolute Maximum Ratings**($T_A=25^{\circ}\text{C}$ 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 ^d | TC=25°C | 18 | A |
| | | TC=100°C | 13 | A |
| I_{DM} | Pulsed Drain Current ^b | | 55 | A |
| I_{AS} | Avalanche Current ^b L=0.5mH | | 14 | A |
| E_{AS} | Avalanche Energy ^b L=0.5mH | | 49 | mJ |
| I_D | Continuous Drain Current ^a | TA=25°C | 12 | A |
| | | TA=70°C | 9 | A |
| P_D | Power Dissipation ^c | TC=25°C | 20 | W |
| | | TC=100°C | 8 | W |
| P_{DSM} | Power Dissipation ^a | TA=25°C | 2.7 | W |
| | | TA=70°C | 1.7 | W |
| T_J | Operation junction temperature | | -55 to 150 | °C |
| T_{STG} | Storage temperature range | | -55 to 150 | °C |

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

| Symbol | Parameter | Ratings | Unit |
|-----------------|---|---------|------|
| $R_{\theta JA}$ | Junction-to-Ambient Thermal Resistance ^a | 45 | °C/W |
| $R_{\theta JC}$ | Junction-to-Case Thermal Resistance | 6 | |

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's specific board design. The current rating 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.

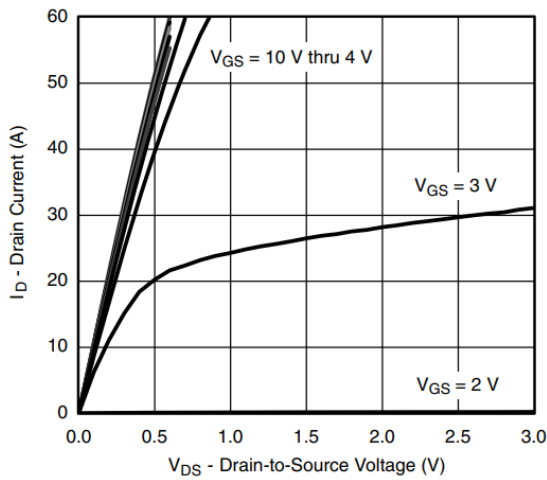


➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

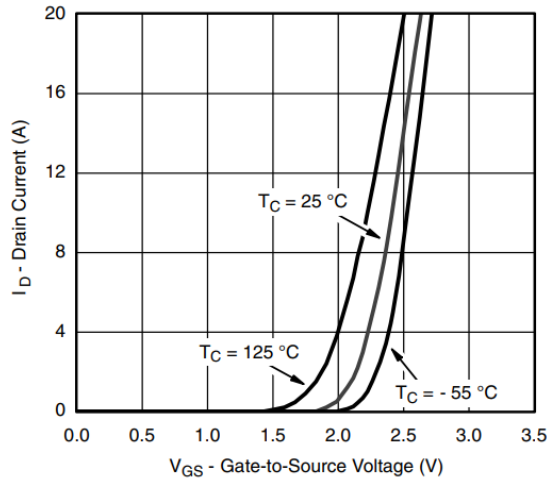
| Symbol | Parameter | Test Conditions | Min | Typ. | Max | Unit |
|---------------|------------------------------------|---|-----|------|-----------|---------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}=0V, I_D=250\mu A$ | 30 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=V_{GS}, I_D=250\mu A$ | 1 | 1.5 | 2 | V |
| $R_{DS(on)}$ | Drain-Source On- Resistance | $V_{GS}=10V, I_D=20A$ | | 10 | 12 | mR |
| | | $V_{GS}=4.5V, I_D=10A$ | | 12.5 | 15 | |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{DS}=24V, V_{GS}=0V$ | | | 1 | μA |
| I_{GSS} | Gate-Source leak current | $V_{GS}=\pm 20V, V_{DS}=0V$ | | | ± 100 | nA |
| G_{FS} | Transconductance | $V_{DS}=5V, I_D=10A$ | | 10 | | S |
| V_{SD} | Forward Voltage | $V_{GS}=0V, I_S=5A$ | | 0.8 | 1.3 | V |
| R_g | Gate Resistance | $V_{GS}=0V, f=1\text{MHz}$ | | 2.5 | | R |
| C_{iss} | Input Capacitance | $V_{DS}=15V, V_{GS}=0V,$ $f=1\text{MHz}$ | | 770 | | pF |
| C_{oss} | Output Capacitance | | | 190 | | |
| C_{rss} | Reverse Transfer Capacitance | | | 20 | | |
| Q_g | Total Gate Charge | $V_{DS}=15V, V_{GS}=10V,$ $I_D=10A$ | | 16 | | nC |
| Q_{gs} | Gate Source Charge | | | 5 | | |
| Q_{gd} | Gate Drain Charge | | | 5.5 | | |
| $T_{D(ON)}$ | Turn-on delay time | $V_{DS}=15V, V_{GS}=10V,$ $R_L=2R, R_{GEN}=3R$ | | 10 | | ns |
| T_r | Rise time | | | 12 | | |
| $T_{D(OFF)}$ | Turn-off delay time | | | 18 | | |
| T_f | Fall time | | | 7 | | |



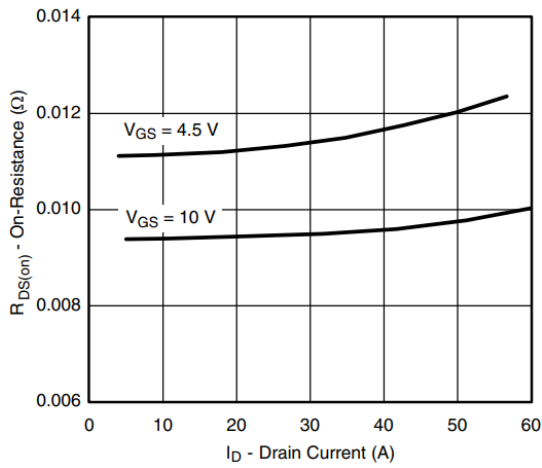
➤ **N-Channel Typical Characteristics**($T_A=25^\circ\text{C}$ unless otherwise noted)



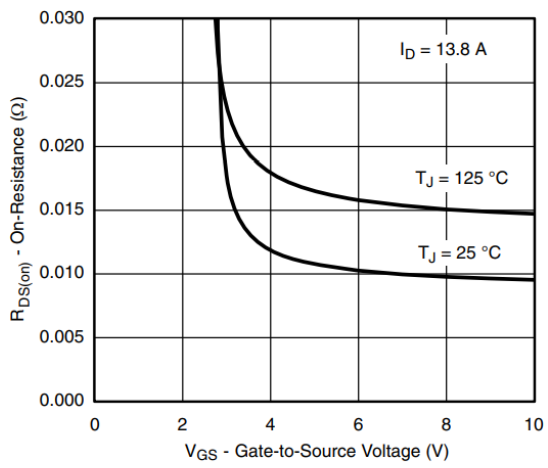
Output Characteristics



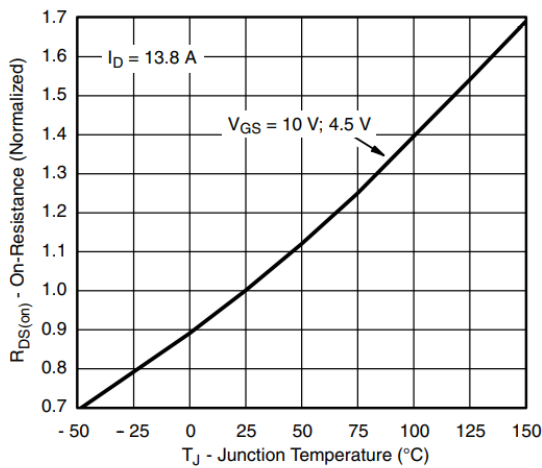
Transfer Characteristics



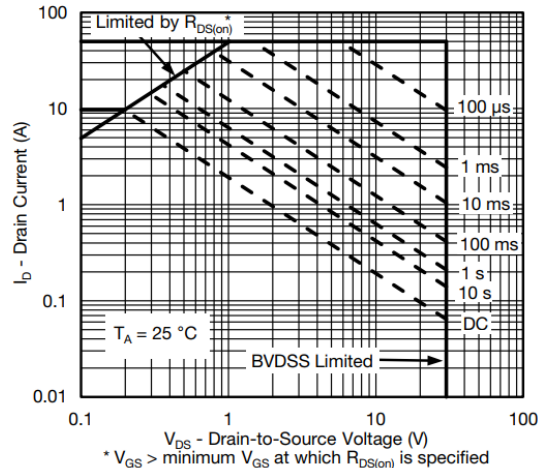
On-Resistance vs. Drain Current



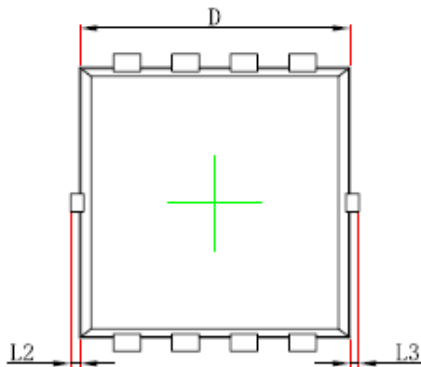
On-Resistance vs. Gate-to-Source Voltage



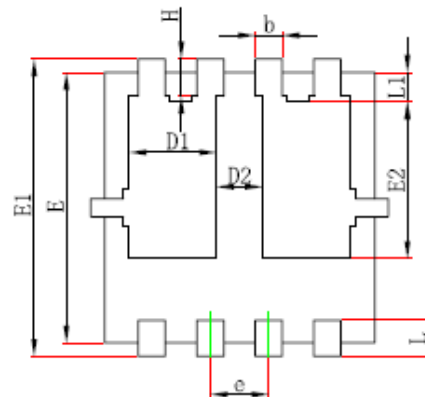
On-Resistance vs. Junction Temperature



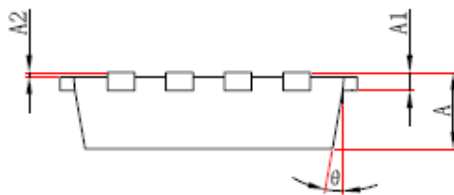
Safe Operating Area, Junction-to-Ambient

➤ Package Information


Top View
[顶视图]



Bottom View
[背视图]

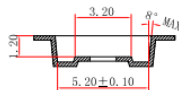
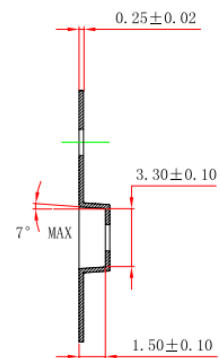
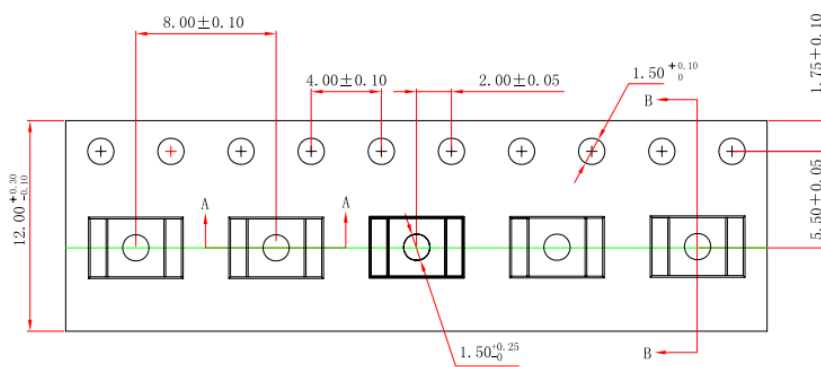
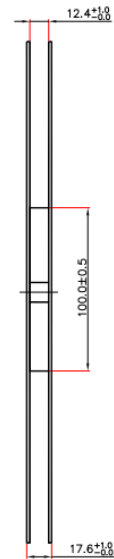
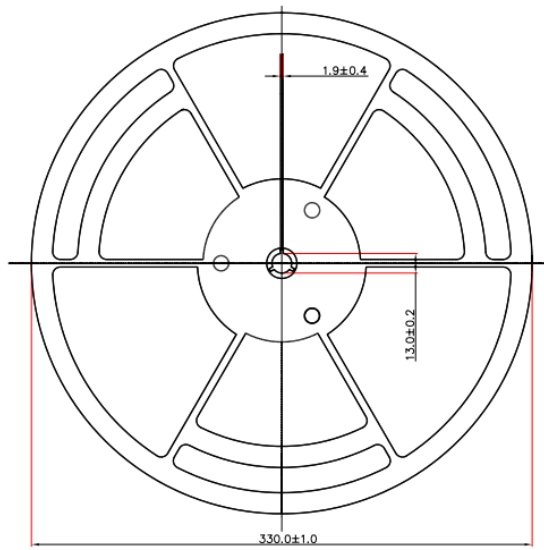


Side View
[侧视图]

| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.650 | 0.850 | 0.026 | 0.033 |
| A1 | 0.152 REF. | | 0.006 REF. | |
| A2 | 0~0.05 | | 0~0.002 | |
| D | 2.900 | 3.100 | 0.114 | 0.122 |
| D1 | 0.935 | 1.135 | 0.037 | 0.045 |
| D2 | 0.280 | 0.480 | 0.011 | 0.019 |
| E | 2.900 | 3.100 | 0.114 | 0.122 |
| E1 | 3.150 | 3.450 | 0.124 | 0.136 |
| E2 | 1.535 | 1.935 | 0.060 | 0.076 |
| b | 0.200 | 0.400 | 0.008 | 0.016 |
| e | 0.550 | 0.750 | 0.022 | 0.030 |
| L | 0.300 | 0.500 | 0.012 | 0.020 |
| L1 | 0.180 | 0.480 | 0.007 | 0.019 |
| L2 | 0~0.100 | | 0~0.004 | |
| L3 | 0~0.100 | | 0~0.004 | |
| H | 0.315 | 0.515 | 0.012 | 0.020 |
| θ | 9° | 13° | 9° | 13° |

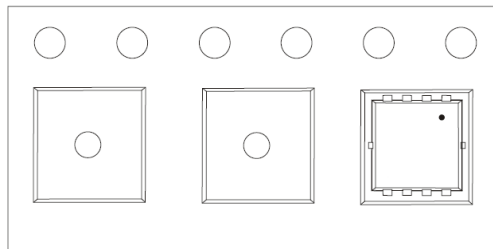


Tape and Reel Data



A-A

B-B





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