# SSC8L62GN6

## N-Channel Enhanced MOSFET

### ➢ Features

| VDS | VGS | RDSON Typ. | ID |
|---|---|---|---|
| 60V | ±20V | 8mR@10V | 60A |
| | | 12mR@4V5 | |

### ➢ Description

This device is N-Channel enhancement MOSFET. Uses SGT technology and design to provide excellent RDSON with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit.

**100% UIS Tested.**

### ➢ Applications

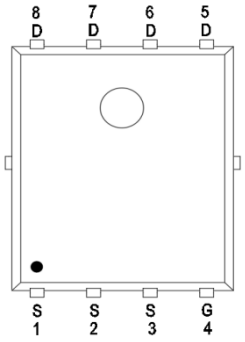
- DC/DC converters
- Power supplies
- Motor Drive Control
- Synchronous rectification

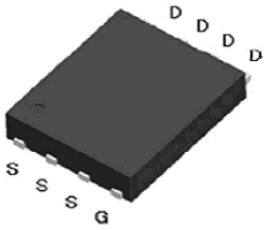
### ➢ Ordering Information

| Device | Package | Shipping |
|---|---|---|
| SSC8L62GN6 | PDFN5X6 | 5000/Reel |

### ➢ Pin configuration

Top view




PDFN5X6


Marking

(XX: product year / YY: product week)

## ➢ Absolute Maximum Ratings($T_A$=25℃ 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℃ | 60 | A |
| | | $T_C$=100℃ | 31 | |
| $I_{DSM}$ | Continuous Drain Current [a] | $T_A$=25℃ | 19 | A |
| | | $T_A$=70℃ | 14 | |
| $I_{DM}$ | Pulsed Drain Current [b] | | 240 | A |
| $P_D$ | Power Dissipation [c] | $T_C$=25℃ | 46 | W |
| | | $T_C$=100℃ | 18 | |
| $P_{DSM}$ | Power Dissipation [a] | $T_A$=25℃ | 5 | W |
| | | $T_A$=70℃ | 3.2 | |
| $I_{AS}$ | Avalanche Current [b] L=0.5mH Single Pulse | | 18 | A |
| $E_{AS}$ | Avalanche Energy [b] L=0.5mH Single Pulse | | 81 | mJ |
| $T_J$ | Operation junction temperature | | -55~150 | ℃ |
| $T_{STG}$ | Storage temperature range | | -55~150 | |

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

| Symbol | Parameter | Ratings | Unit |
|---|---|---|---|
| $R_{\theta JA}$ | Junction-to-Ambient Thermal Resistance [a] | 25 | ℃/W |
| $R_{\theta JC}$ | Junction-to-Case Thermal Resistance | 2.7 | |

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 power dissipation is based on the t ≤10s thermal resistance rating.

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

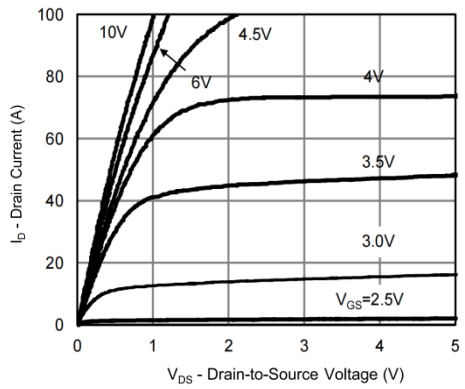
c. The power dissipation $P_D$ is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

d. The maximum current rating is package limited.

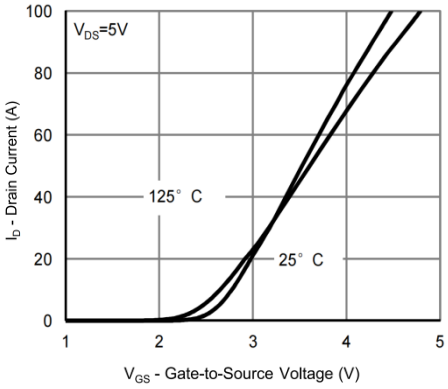
➢ **Electronics Characteristics**($T_A$=25℃ unless otherwise noted)

| Symbol | Parameter | Test Conditions | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | VGS=0V ,ID=250uA | 60 | | | V |
| $V_{GS\ (th)}$ | Gate Threshold Voltage | VDS=VGS ,ID=250uA | 1.0 | 1.8 | 2.4 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | VGS=10V , ID=30A | | 8 | 9.5 | mR |
| | | VGS=4.5V , ID=20A | | 12.5 | 15.5 | |
| $I_{DSS}$ | Zero Gate Voltage Drain Current | VDS=60V ,VGS=0V | | | 1 | uA |
| $I_{GSS}$ | Gate-Source leak current | VGS=±20V ,VDS=0V | | | ±100 | nA |
| $G_{FS}$ | Transconductance | VDS=5V ,ID=20A | | 30 | | S |
| $V_{SD}$ | Forward Voltage | VGS=0V , IS=20A | | 0.8 | 1.3 | V |
| Rg | Gate Resistance | VDS=0V, f=1MHz | | 1.4 | | R |
| Ciss | Input Capacitance | VDS=30V , VGS=0V, f=1MHz | | 960 | | pF |
| Coss | Output Capacitance | | | 380 | | |
| Crss | Reverse Transfer Capacitance | | | 22 | | |
| $T_{D(ON)}$ | Turn-on delay time | VGS=10V, RL=1.5R VDS=30V , RG=3R | | 5.4 | | ns |
| Tr | Rise time | | | 18.3 | | |
| $T_{D(OFF)}$ | Turn-off delay time | | | 17.4 | | |
| Tf | Fall time | | | 18.4 | | |
| $Q_G$ | Total Gate Charge | VGS=10V, VDS=30V ID=20A | | 16 | | nC |
| $Q_{GS}$ | Gate Source Charge | | | 4.4 | | |
| $Q_{GD}$ | Gate Drain Charge | | | 2.3 | | |
| Trr | Diode Recovery Time | IF=20A , di/dt=500A/us | | 22 | | ns |
| Qrr | Diode Recovery Charge | IF=20A , di/dt=500A/us | | 54 | | nC |

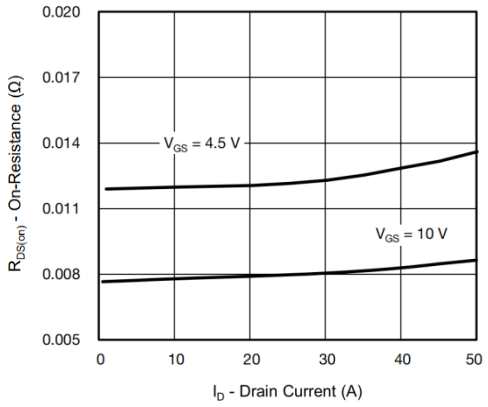
## ➢ Typical Characteristics($T_A$=25℃ unless otherwise noted)



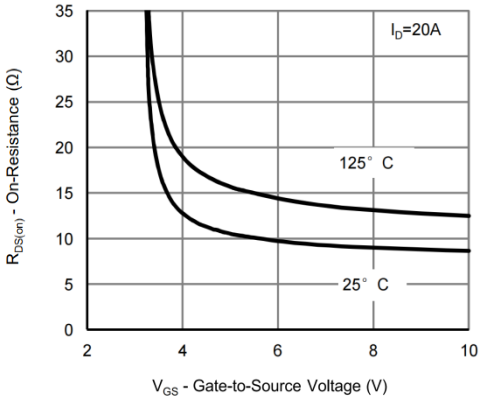

**Output Characteristics**



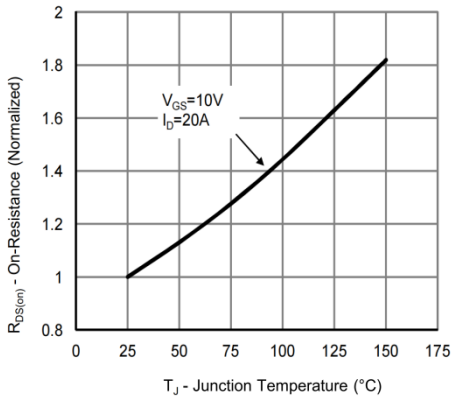

**Transfer Characteristics**



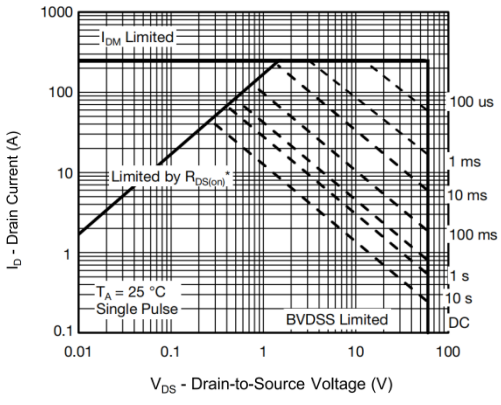

**On-Resistance vs. Drain Current and Gate Voltage**




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

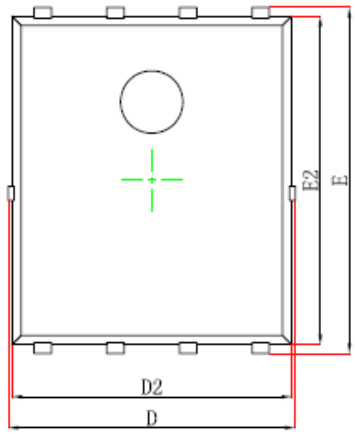



**On-Resistance vs. Junction Temperature**

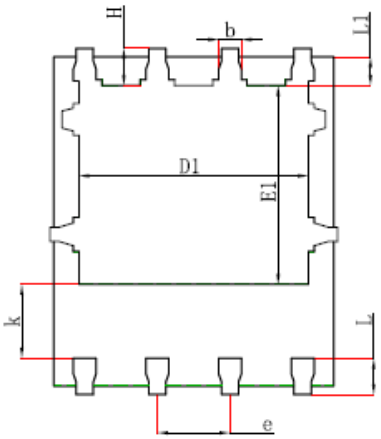



**Safe Operating Area, Junction-to-Ambient**

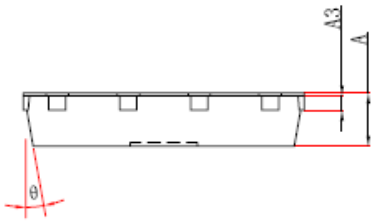
## ➢ Package Information




Top View
[顶视图]




Bottom View
[背视图]




Side View
[侧视图]

Package：PDNF5X6-8L

| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.000 | 0.035 | 0.039 |
| A3 | 0.254REF | | 0.010REF | |
| D | 4.944 | 5.096 | 0.195 | 0.201 |
| E | 5.974 | 6.126 | 0.235 | 0.241 |
| D1 | 3.910 | 4.110 | 0.154 | 0.162 |
| E1 | 3.375 | 3.575 | 0.133 | 0.141 |
| D2 | 4.824 | 4.976 | 0.190 | 0.196 |
| E2 | 5.674 | 5.826 | 0.223 | 0.229 |
| k | 1.190 | 1.390 | 0.047 | 0.055 |
| b | 0.350 | 0.450 | 0.014 | 0.018 |
| e | 1.270TYP | | 0.050TYP | |
| L | 0.559 | 0.711 | 0.022 | 0.028 |
| L1 | 0.424 | 0.576 | 0.017 | 0.023 |
| H | 0.574 | 0.726 | 0.023 | 0.029 |
| θ | 10° | 12° | 10° | 12° |

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