

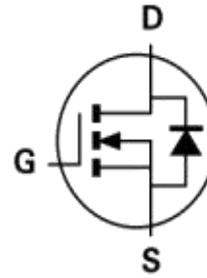


LC60R600D

N-channel Super Junction MOSFET

MAIN CHARACTERISTICS

| | |
|-------------------|---------------|
| I_D | 7A |
| V_{DSS} | 600V |
| RDSON-typ VGS=10V | 510m Ω |

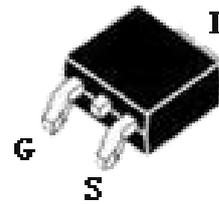


FEATURES

- Adopt advanced trench technology to provide excellent Rds(on), low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

APPLICATIONS

- Solar inverters
- LCD/LED/PDP TV
- Telecom/Server Power supplies
- AC-DC Power Supply



TO-252

MECHANICAL DATA

- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275°C maximum, 10s per JESD 22-B106

Product specification classification

| Part Number | Package | Mode Name | Pack |
|-------------|---------|-----------|------|
| LC60R600D | TO-252 | LC60R600D | Tape |



LC60R600D

N-channel Super Junction MOSFET

Maximum Ratings at Tc=25°C unless otherwise specified

| Characteristics | Symbol | Value | Unit |
|---|-----------------|-------------|------|
| Drain-Source Voltage | V_{DS} | 600 | V |
| Gate-Source Voltage | V_{GS} | ±30 | V |
| Continue Drain Current | I_D | 7 | A |
| Pulsed Drain Current (Note1) | I_{DM} | 24 | A |
| Power Dissipation | P_D | 64 | W |
| Single Pulse Avalanche Energy (Note1) | E_{AS} | 130 | mJ |
| Operating Temperature Range | T_J | -50 to +150 | °C |
| Storage Temperature Range | T_{STG} | -50 to +150 | °C |
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 1.97 | °C/W |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 62 | °C/W |

Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

Electrical Characteristics at Tc=25°C unless otherwise specified

| Characteristics | Test Condition | Symbol | Min | Typ | Max | Unit |
|----------------------------------|---|--------------|-----|-----|------|------|
| Drain-Source Breakdown Voltage | $V_{GS} = 0 V, I_D = 250 \mu A$ | BV_{DSS} | 600 | - | - | V |
| Drain-Source Leakage Current | $V_{DS} = 600 V, V_{GS} = 0 V$ | I_{DSS} | - | - | 1 | μA |
| Gate Leakage Current | $V_{GS} = \pm 30 V, V_{DS} = 0 V$ | I_{GSS} | - | - | ±100 | nA |
| Gate-Source Threshold Voltage | $V_{DS} = V_{GS}, I_D = 250 \mu A$ | $V_{GS(th)}$ | 2 | - | 4 | V |
| Drain-Source On-State Resistance | $V_{GS}=10V, I_D=3.5A$ | $R_{DS(on)}$ | - | 510 | 600 | mΩ |
| Forward Transconductance | $V_{DS} = 5 V, I_D = 2 A$ | g_{fs} | - | - | 8 | S |
| Input Capacitance | $V_{DS}=50V, V_{GS}=0V, f=1MHz$ | C_{iss} | - | 471 | - | pF |
| Output Capacitance | | C_{oss} | - | 35 | - | pF |
| Reverse Transfer Capacitance | | C_{rss} | - | 1.7 | - | pF |
| Turn-on Delay Time(Note2) | $V_{DD} = 325V, I_D = 7A, V_{GS} = 10V, R_G = 25\Omega$ | $t_{d(ON)}$ | - | 17 | - | ns |
| Rise Time(Note2) | | t_r | - | 26 | - | ns |
| Turn-Off Delay Time(Note2) | | $t_{d(OFF)}$ | - | 53 | - | ns |
| Fall Time(Note2) | | t_f | - | 38 | - | ns |
| Total Gate Charge(Note2) | $V_{DS} = 520V, V_{GS} = 10V, I_D = 7A$ | Q_G | - | 13 | - | nC |
| Gate to Source Charge(Note2) | | Q_{GS} | - | 2.1 | - | nC |
| Gate to Drain Charge(Note2) | | Q_{GD} | - | 6.9 | - | nC |

Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

| Characteristics | Test Condition | Symbol | Min. | Typ. | Max. | Unit |
|--|-------------------------------|----------|------|------|------|------|
| Maximun Body-Diode Continuous Current | | I_S | - | - | 7 | A |
| Maximun Body-Diode Pulsed Current(Note2) | | I_{SM} | - | - | 24 | A |
| Drain-Source Diode Forward Voltage | $V_{GS}=0V, I_S=3.5A, T_J=25$ | V_{SD} | - | - | 1.4 | V |

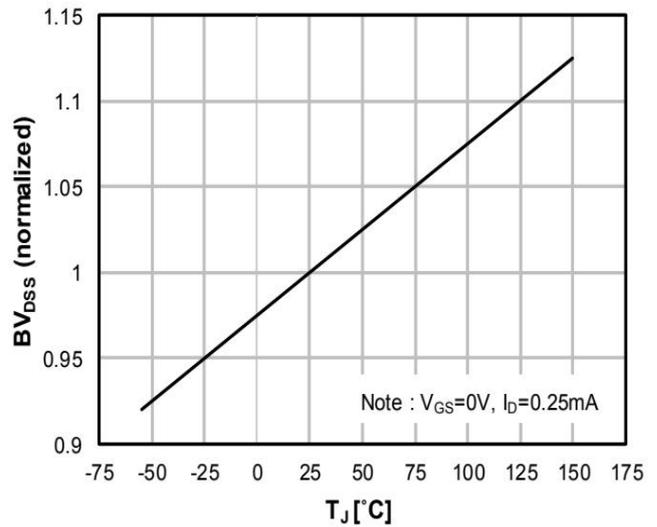
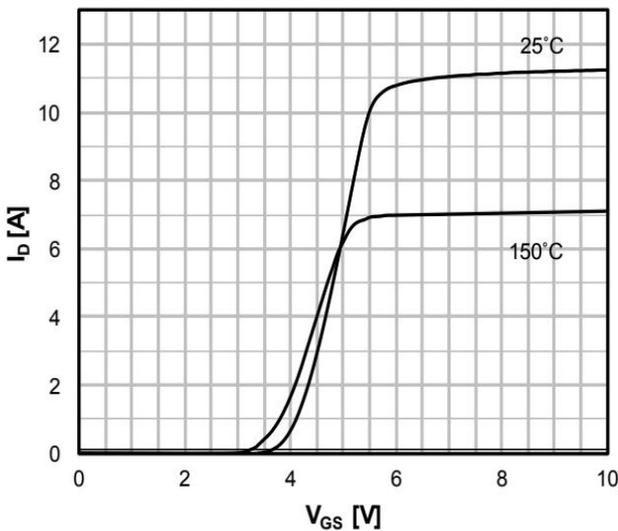
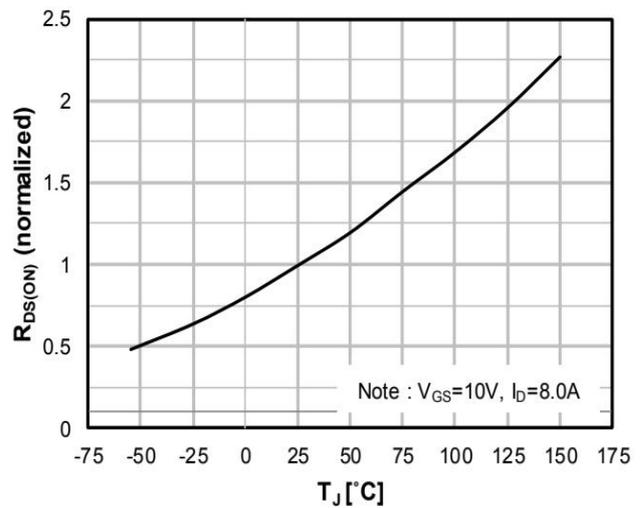
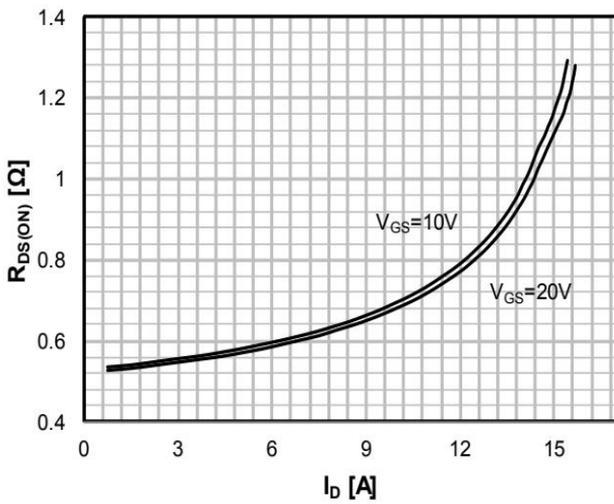
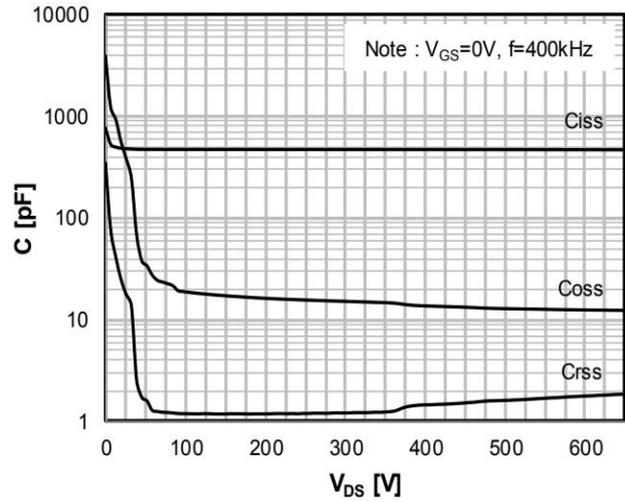
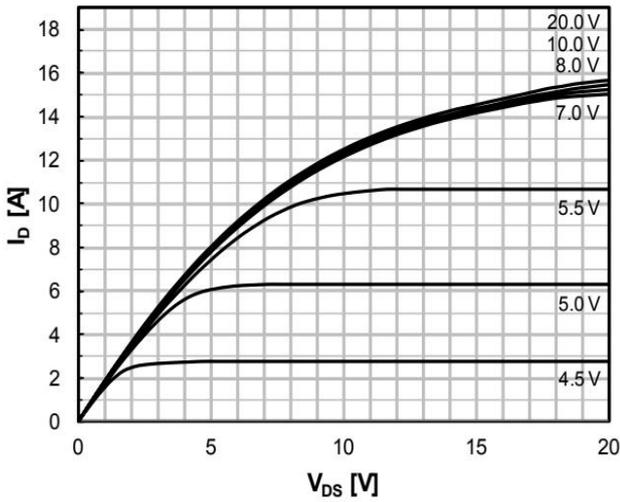
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle



LC60R600D

N-channel Super Junction MOSFET

RATINGS AND CHARACTERISTIC CURVES

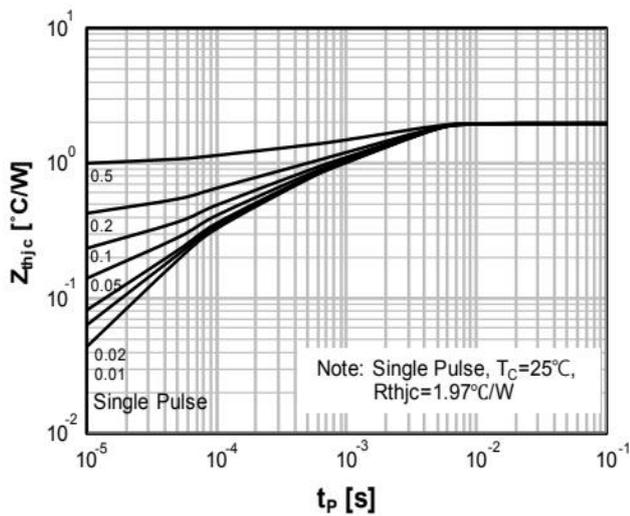
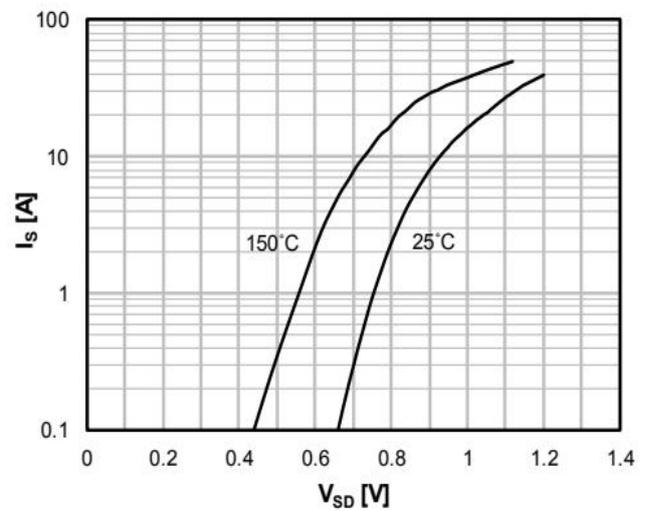
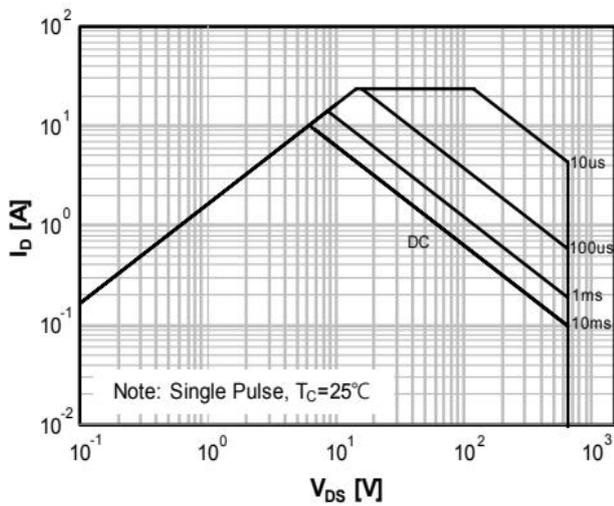
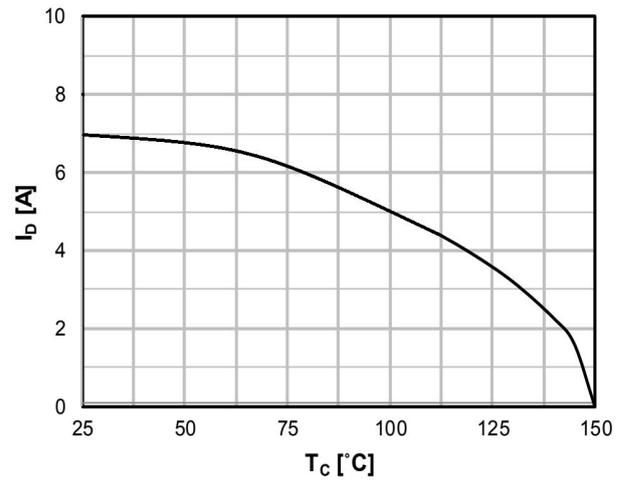
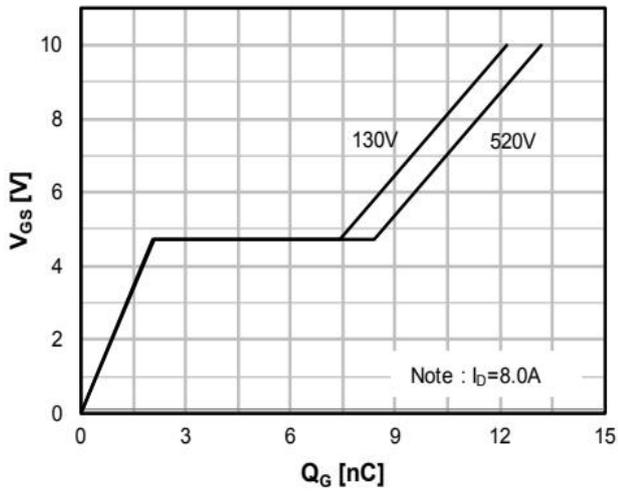




LC60R600D

N-channel Super Junction MOSFET

RATINGS AND CHARACTERISTIC CURVES



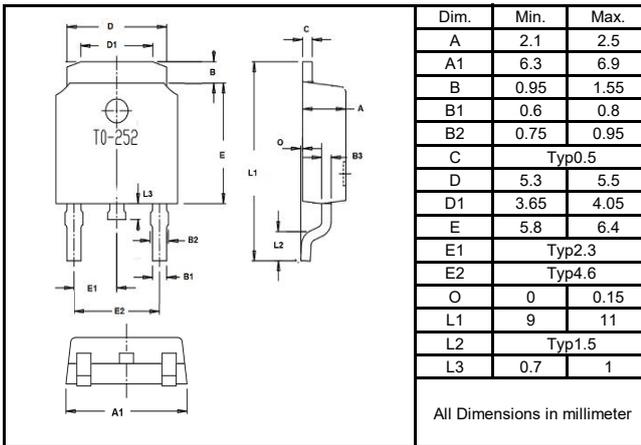


LC60R600D

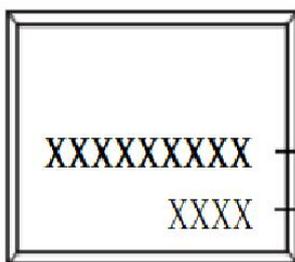
N-channel Super Junction MOSFET

Package Outline Dimensions millimeters

T0-252



Marking on the body



MAKING:

X X XX

- Assembly code (e.g : AB,CD,.....)
- month - code (WW: 1-1, 10-A...)
- Year - code (Y: Last digit of year & A:2012,B:2013. . .)

packing instruction

| PKG | 最小包装 | 内盒 | 外箱 |
|--------|-----------|-----------|------------|
| TO-252 | | | |
| | 2500pcs/盘 | 5000pcs/盒 | 25000pcs/箱 |

Notice

All product,product specifications and data are subject to change without notice to improve.The right to explain is owned by LINGXUN electronics

company.

Confirm that operation temperature is within the specified range described in the product specification. Avoid applying poer exceeding normal rated

poer; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.

LINGXUN electronics shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.