

MAIN CHARACTERISTICS

I_D	7A
V_{DSS}	650V
RDSON-typ VGS=10V	520mΩ

FEATURES

- Low gate charge
- Very low switching and conduction loss
- Extremely high commutation ruggedness

APPLICATIONS

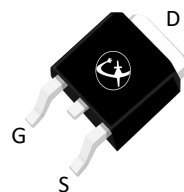
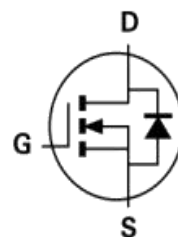
- Switch Mode Power Supply(SMPS)
- Uninterruptible Power Supply(UPS)
- Power Factor Correction(PFC)

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
LC65R600D	T0-252	LC65R600D	Tape



TO-252

Maximum Ratings at Tc=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	650	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}	129	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 μ s pulse width, 2 % duty cycle

Electrical Characteristics at Tc=25°C unless otherwise specified

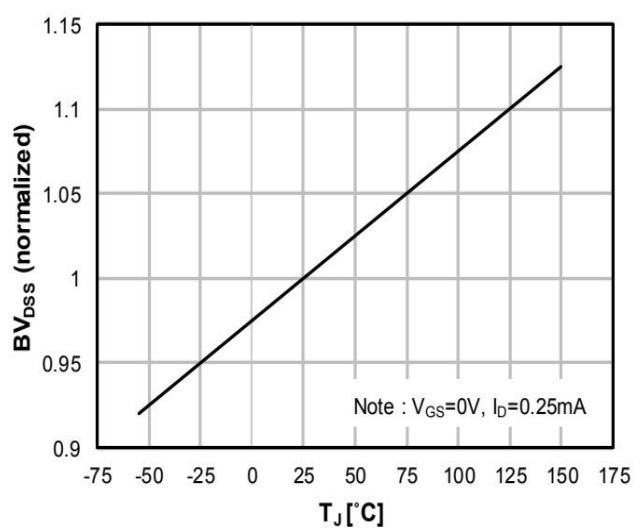
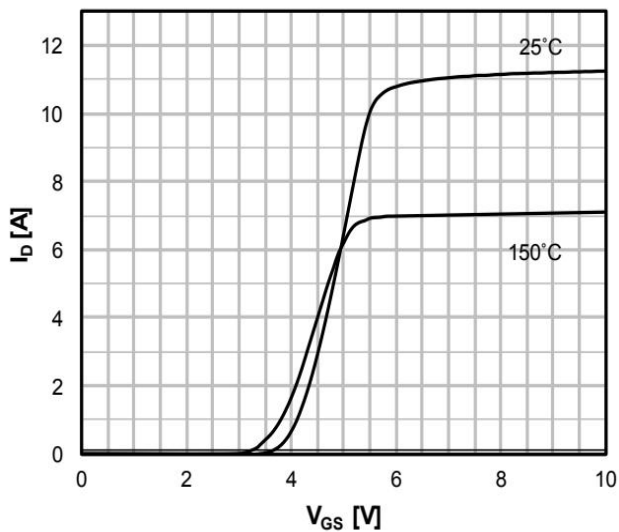
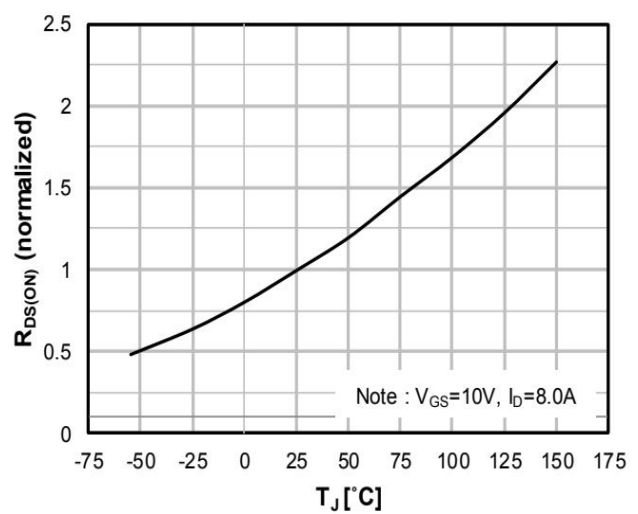
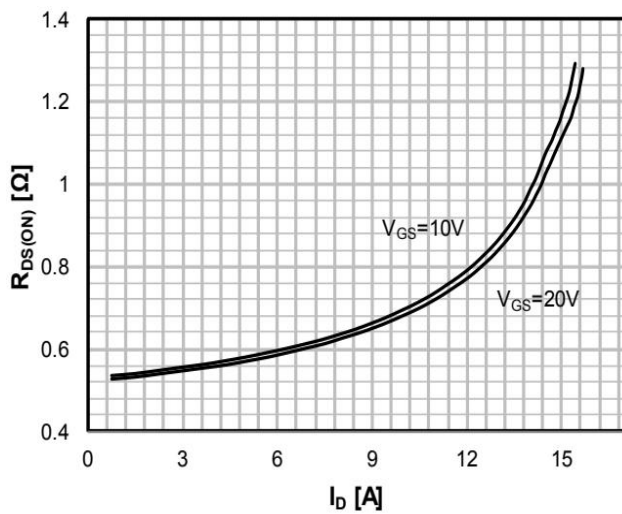
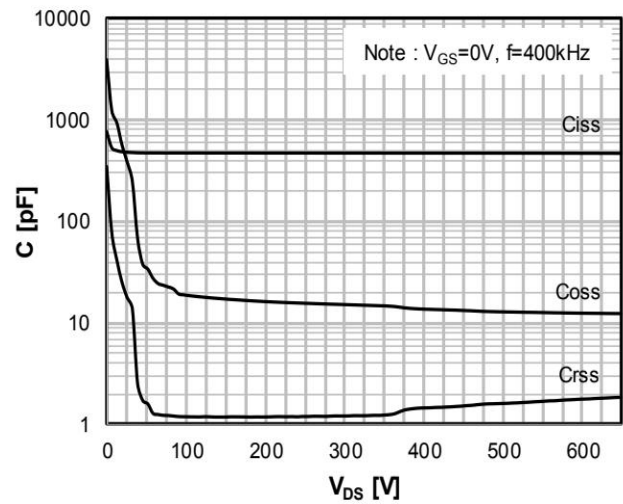
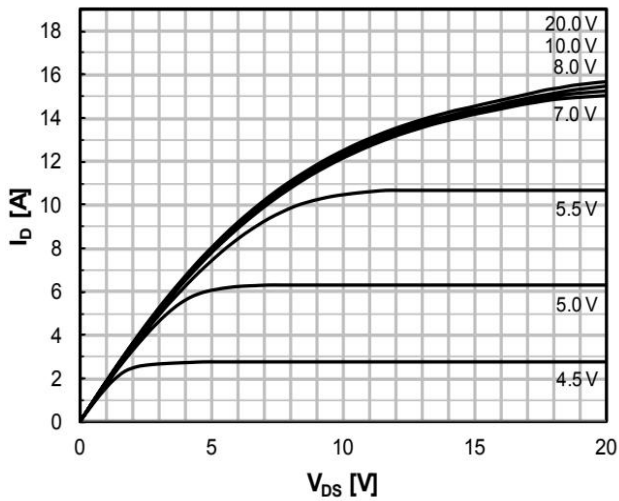
Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0 \text{ V}, I_D = 250 \mu\text{A}$	BV_{DSS}	650	-	-	V
Drain-Source Leakage Current	$V_{DS} = 650 \text{ V}, V_{GS} = 0 \text{ V}$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0 \text{ V}$	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance	$V_{GS} = 10 \text{ V}, I_D = 3.5 \text{ A}$	$R_{DS(on)}$	-	520	600	m Ω
Forward Transconductance	$V_{DS} = 5 \text{ V}, I_D = 2 \text{ A}$	g_{fs}	-	-	8	S
Input Capacitance	$V_{DS} = 50 \text{ V}, V_{GS} = 0 \text{ V}, f = 1 \text{ MHz}$	C_{iss}	-	715	-	pF
Output Capacitance		C_{oss}	-	35	-	pF
Reverse Transfer Capacitance		C_{rss}	-	1.7	-	pF
Turn-on Delay Time(Note2)	$V_{DD} = 325 \text{ V}, I_D = 7 \text{ A}, V_{GS} = 10 \text{ V}, R_G = 25 \Omega$	$t_{d(ON)}$	-	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)	$V_{DS} = 520 \text{ V}, V_{GS} = 10 \text{ V}, I_D = 7 \text{ A}$	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

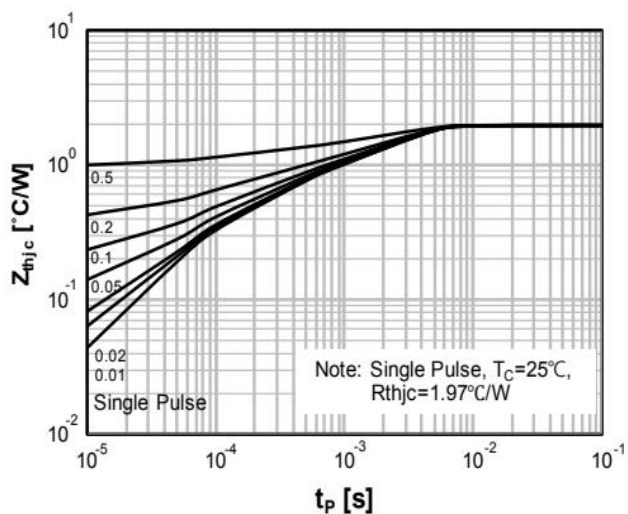
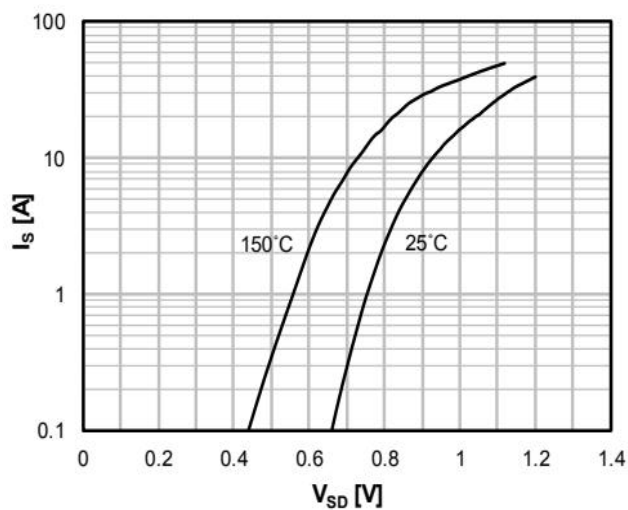
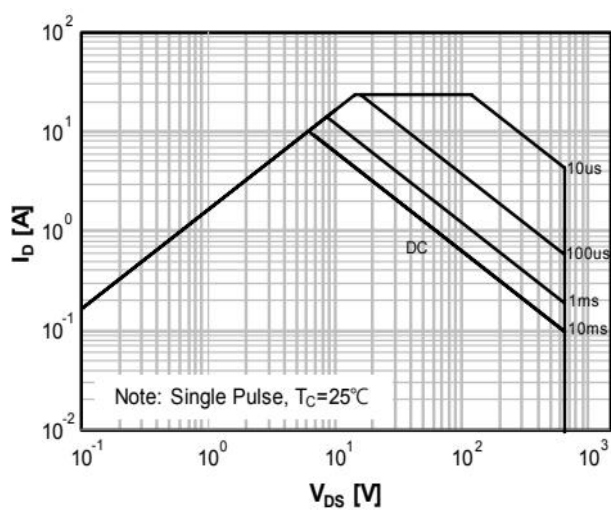
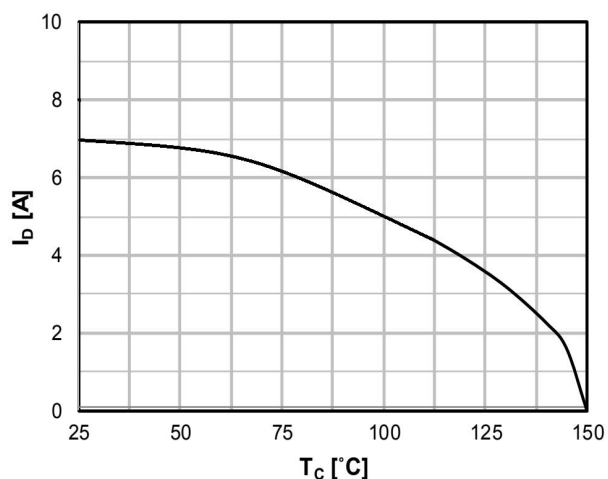
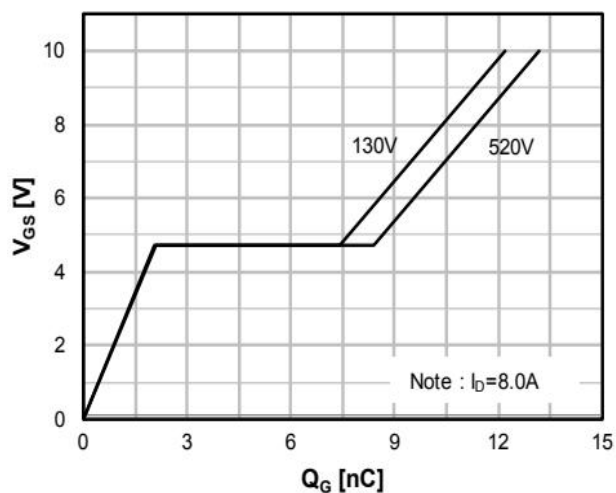
Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	7	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	24	A
Drain-Source Diode Forward Voltage	$V_{GS} = 0 \text{ V}, I_S = 3.5 \text{ A}, T_J = 25^\circ\text{C}$	V_{SD}	-	-	1.4	V
Body Diode Reverse Recovery Time	$V_R = 30 \text{ V}, I_F = 1 \text{ A}, dI/dt = 100 \text{ A}/\mu\text{s}$	T_{rr}	-	151	-	ns
Body Diode Reverse Recovery Charge		Q_{rr}	-	565	-	nC

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

RATINGS AND CHARACTERISTIC CURVES

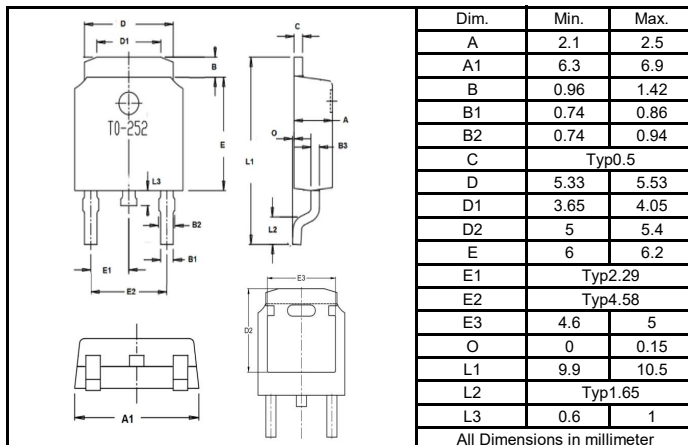


RATINGS AND CHARACTERISTIC CURVES

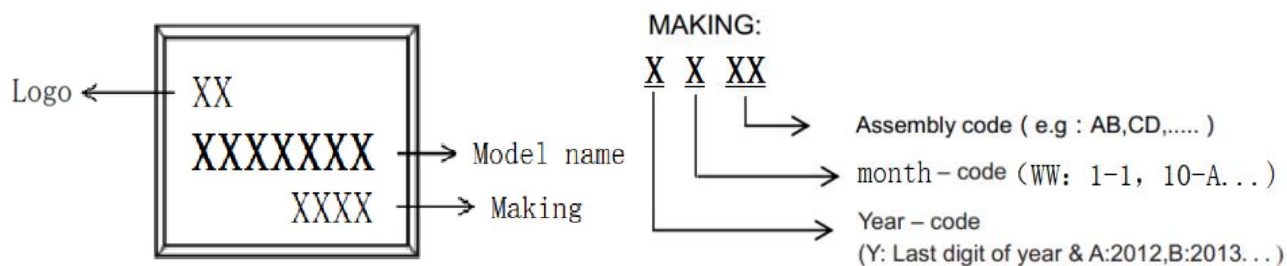


Package Outline Dimensions millimeters

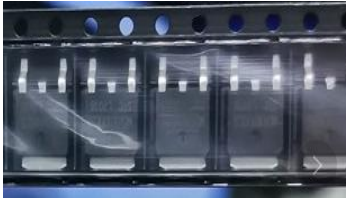
T0-252



Marking on the body



packing instruction

PKG	Minimal Package	Mini Box	Box
TO-252			
	2500pcs/disk	5000pcs/disk	25000pcs/box



LC65R600D

N-channel Super Junction MOSFET

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 power exceeding normal rated

power; 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.

<http://www.lxmicro.com>

Revision History

Rev	Changes	Date
1.0	First version	2025-5-27