



LC65R040B

Si Super junction MOSFET with Fast Recovery Diode

MAIN CHARACTERISTICS

I_D	70A
V_{DSS}	650V
RDSON-typ VGS=10V	38m Ω

FEATURES

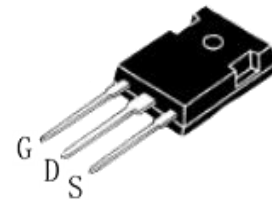
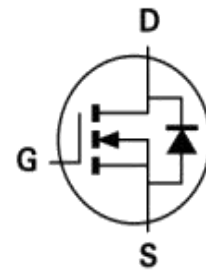
- Adopt advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

APPLICATIONS

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

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



TO-247

Product specification classification

Part Number	Package	Mode Name	Pack
LC65R040B	TO-247	LC65R040B	Tube



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Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
		247	
Drain-Source Voltage	V_{DS}	650	V
Gate-Source Voltage	V_{GS}	± 30	V
Continue Drain Current	I_D	70	A
Pulsed Drain Current (Note1)	I_{DM}	230	A
Power Dissipation	P_D	500	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	4000	mJ
Operating Temperature Range	T_J	-50 to +150	°C
Storage Temperature Range	T_{STG}	-50 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.42	°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

Characteristics	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	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	$V_{GS(th)}$	4	-	5	V
Drain-Source On-State Resistance	$V_{GS}=10\text{V}, I_D=30\text{A}$	$R_{DS(on)}$	-	38	41	m Ω
Forward Transconductance	$V_{DS} = 5 \text{ V}, I_D = 10 \text{ A}$	g_{fs}	-	5.5	-	S
Input Capacitance	$V_{DS}=100\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$	C_{iss}	-	7500	-	pF
Output Capacitance		C_{oss}	-	220	-	pF
Reverse Transfer Capacitance		C_{rss}	-	30	-	pF
Turn-on Delay Time(Note2)	$V_{DD} = 380 \text{ V}, I_D = 38\text{A}, V_{GS} = 10 \text{ V}, R_G = 4.7\Omega$	$t_{d(ON)}$	-	55	-	ns
Rise Time(Note2)		t_r	-	65	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	175	-	ns
Fall Time(Note2)		t_f	-	48	-	ns
Total Gate Charge(Note2)	$V_{DS} = 380\text{V}, I_D = 38\text{A}$	Q_G	-	180	-	nC
Gate to Source Charge(Note2)	$V_{GS(on)} = 10\text{V}, V_{GS(off)} = 0\text{V}$	Q_{GS}	-	40	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	80	-	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	-	-	70	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	230	A
Drain-Source Diode Forward Voltage	$V_{GS}=0\text{V}, I_S=50\text{A}, T_J=25^\circ\text{C}$	V_{SD}	-	-	1.08	V

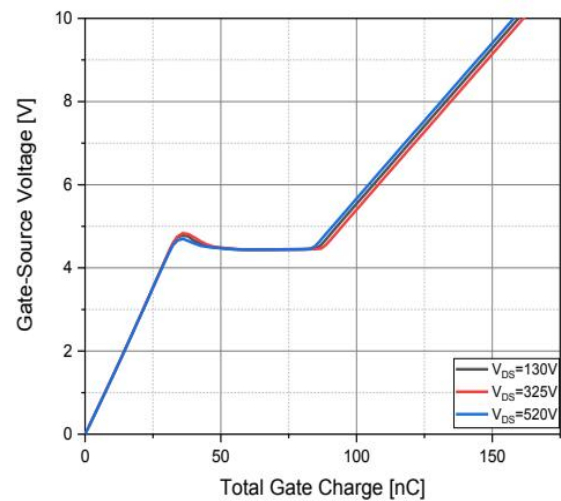
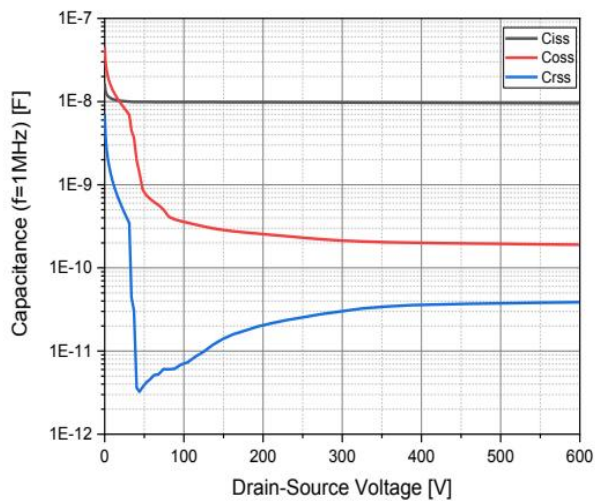
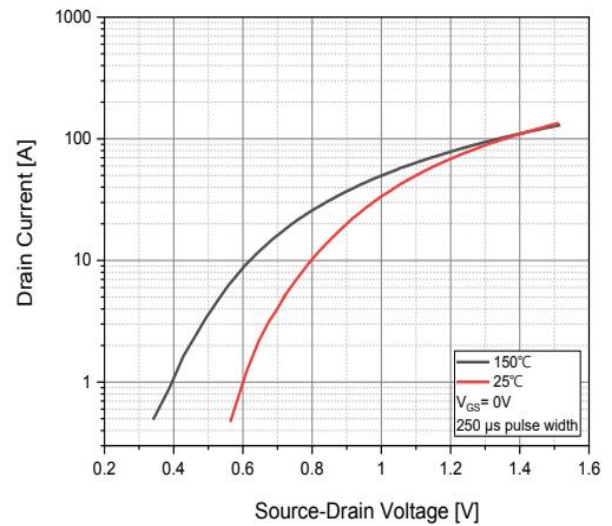
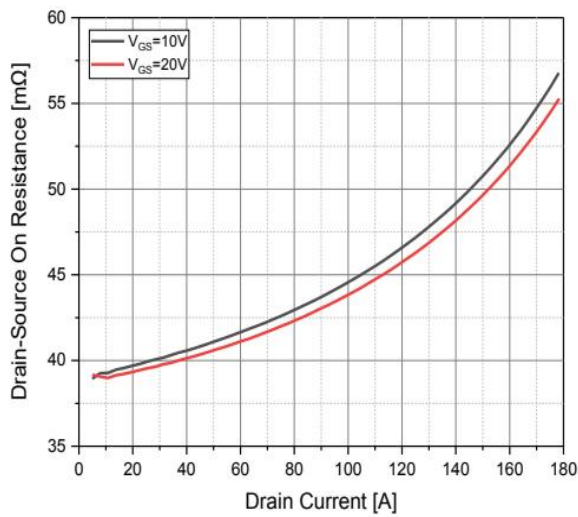
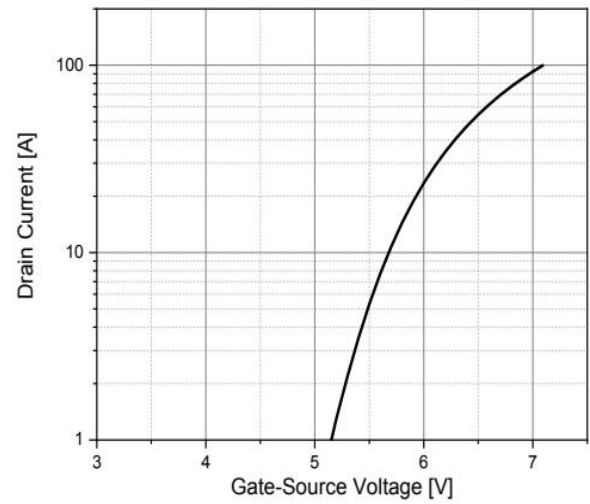
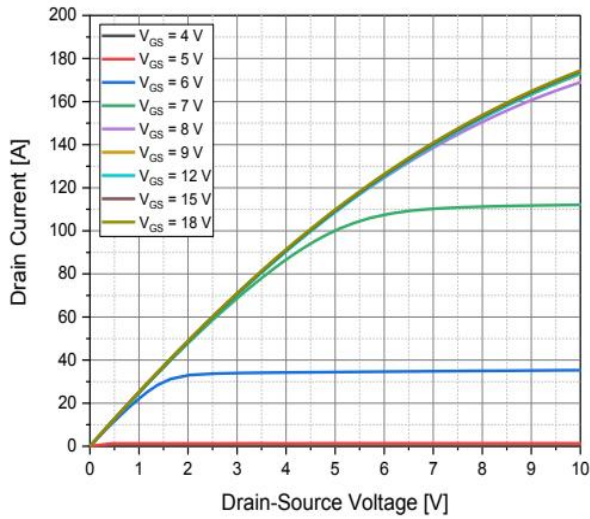
Note2:Pulse test: 300 μ s pulse width, 2 % duty cycle



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RATINGS AND CHARACTERISTIC CURVES

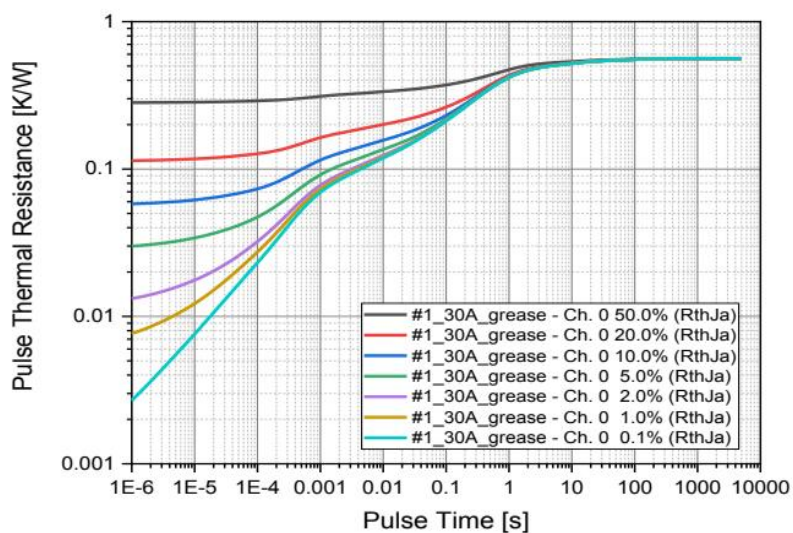
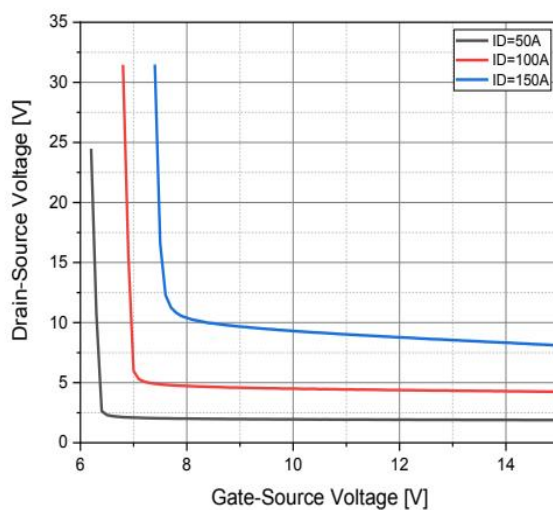
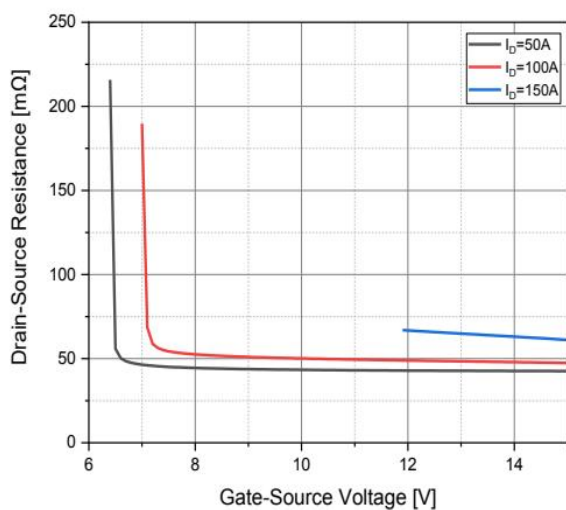




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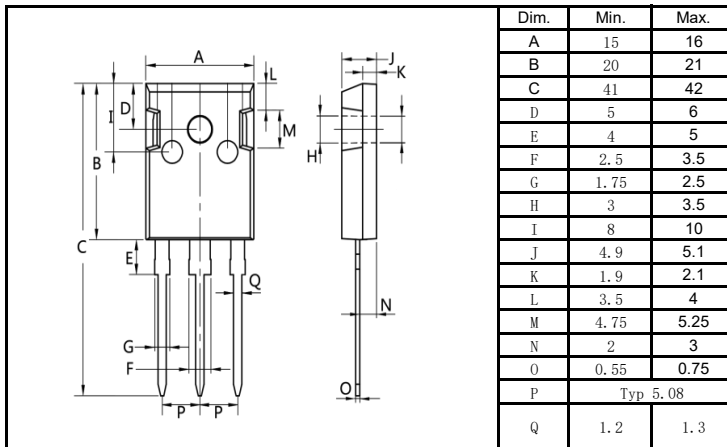


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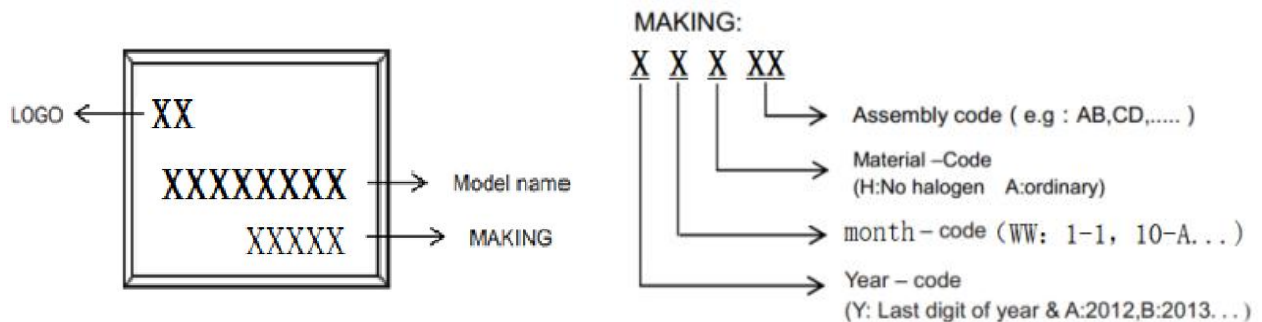
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Package Outline Dimensions millimeters

TO-247



Marking on the body



packing instruction

PKG	最小包装	内盒	外箱
TO-247			
	30PCS/管	600pcs/盒	3000pcs/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.