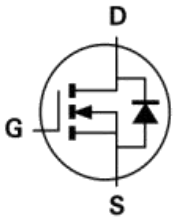
LSC090M65B

SiC N-Channel MOSFET

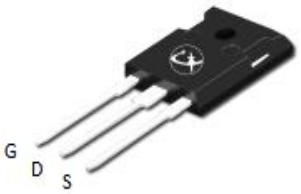
MAIN CHARACTERISTICS

I_D	36A
V_{DS}	800V
Ros(on)-Typ@ Vgs=15V	90mΩ



FEATURES

- Wide Bandgap SiC MOSFET Technology
- Low On-Resistance with High Blocking Voltage
- Low Capacitances with High-Speed Switching
- Low Reverse Recovery (Qrr)
- Robust against Parasitic Turn on Even 0V Turn off



TO-247

Benefits

- Reduced Switching Losses
- Increased System Switching Frequency
- Increased Power Density
- Reduction of Heat Sink Requirements
- Reduced EMI

APPLICATIONS

- HIGH EFFICIENCY SWITCH
- Motor driven
- Ammeter
- UPS power

Product specification classification

Part Number	Package	Mode Name	Pack
LSC090M65B	TO-247	LSC090M65B	Tube

Maximum Ratings at Tc=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	800	V
Gate-Source Voltage	V_{GS}	-10/+22	V
Recommended Operation Value	VGSop	0~+18	V
Continue Drain Current Tc=25℃	I_D	36	A
Continue Drain Current Tc=100℃		27	
Pulsed Drain Current	I_{DM}	72	A
Power Dissipation TC=25℃	P_D	340	W
Power Dissipation TC=175℃		136	W
Operating Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.1	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	26.8	°C/W

Note1:Pulse test: 300 μs 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 V,I_D = 100μA	BV_{DSS}	800	-	-	V
Drain-Source Leakage Current	V_{DS} =800 V, V_{GS} = 0 V	I_{DSS}	-	1	10	μA
Gate Leakage Current	V_{GS} = 18 V, V_{DS} = 0 V	I_{GSS}	-	-	250	nA
Gate-Source Threshold Voltage	V_{DS} = V_{GS} , I_D = 7.5 mA	$V_{GS(th)}$	2.7	2.8	4.5	V
Drain-Source On-State Resistance	V_{GS} = 15 V, I_D = 17 A	$R_{DS(on)}$	-	98	120	mΩ
	V_{GS} = 15 V, I_D = 17 A, TJ = 175℃		-	77	-	mΩ
	VGS = 18 V, ID = 17 A			63		
	VGS = 18 V, ID = 17 A, TJ = 175℃			65		
Input Capacitance	VDS=500V,VGS=0V，f=100kHz	C_{iss}	-	1045	-	pF
Output Capacitance		C_{oss}	-	97	-	pF
Reverse Transfer Capacitance		C_{rss}	-	9	-	pF
Gate Resistance	VAC=25mV, f=100KHz		-	3	-	Ω
Total Gate Charge(Note2)	VGS=0/15V, VDS=500V, ID=17A,	Q_G	-	41	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	10	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	16	-	nC

Electrical Characteristics at Tc=25°C unless otherwise specified

Turn-on Delay Time	VGS=0/15V，VDD=500V, ID=17A, Rg=2Ω	$t_{d(ON)}$	-	19	-	ns
Rise Time(Note2)		t_r	-	115	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	31	-	ns
Fall Time(Note2)		t_f	-	34	-	ns

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

Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current	VGS = 0 V, Tc=25°C	I_S	-	36	-	A
	VGS = 0 V, Tc=100°C		-	15	-	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	72	-	A
Drain-Source Diode Forward Voltage	VGS = -4 V, ISD = 8.5A	V_{SD}	-	4	-	V
	VGS = -4 V, ISD = 8.5A Tj=175℃		-	3.2	-	V
Reverse Recovery Time(Note2)	VGS = 0V, ISD=17A, VR=500V, di/dt=550A/us, Tj=25℃	trr	-	17.8	-	ns
Reverse Recovery Charge(Note2)		Qrr	-	63	-	nC
Peak Reverse Recovery Current		Irrm	-	4.9	-	A

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

RATINGS AND CHARACTERISTIC CURVES

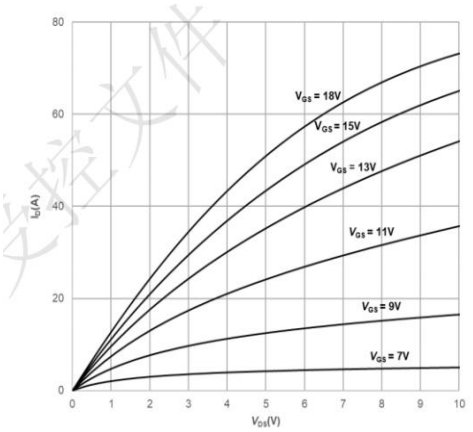


Fig2. Output Characteristics T_j=175℃

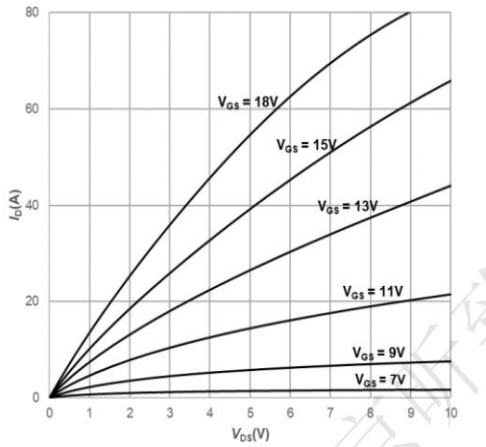


Fig1. Output Characteristics T_j=25℃

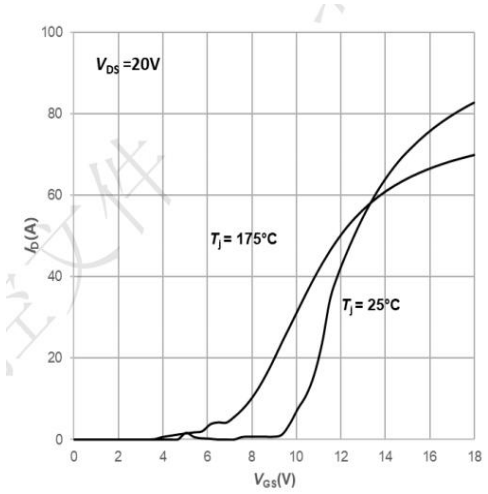


Fig3. Typical Transfer Characteristics

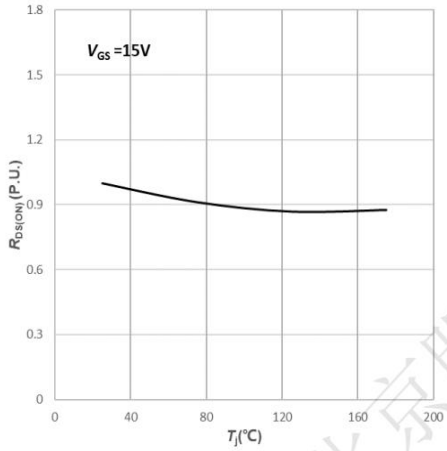


Fig4. Normalized On-Resistance vs. Temperature

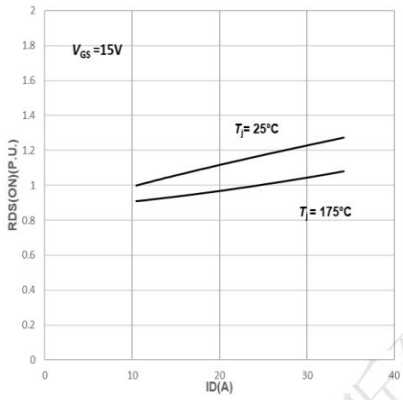


Fig5. Normalized On-Resistance vs. Drain Current For Various Temperatures

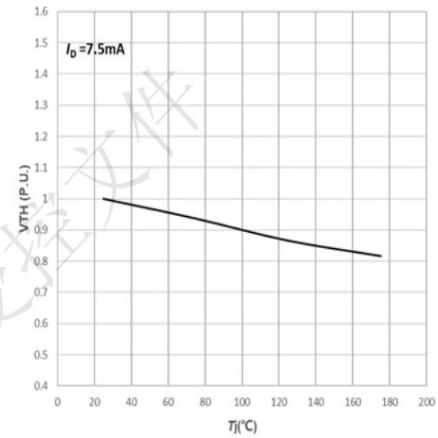


Fig6. Normalized Threshold Voltage vs. Temperature

RATINGS AND CHARACTERISTIC CURVES

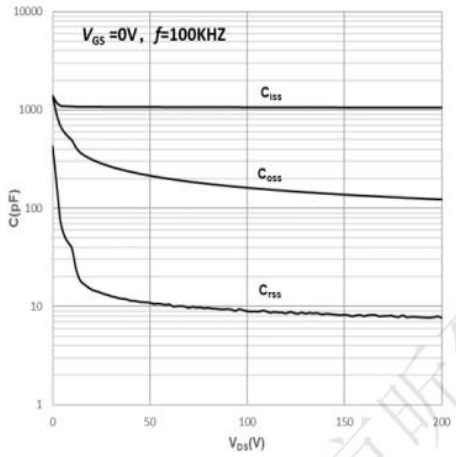


Fig7. Capacitances vs. Drain-Source Voltage (0-200V)

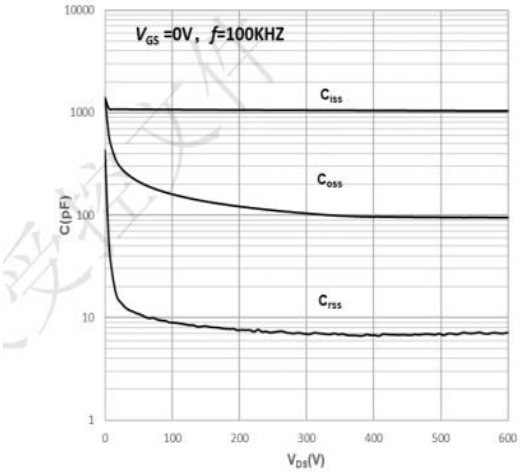


Fig8. Capacitances vs. Drain-Source Voltage (0-600V)

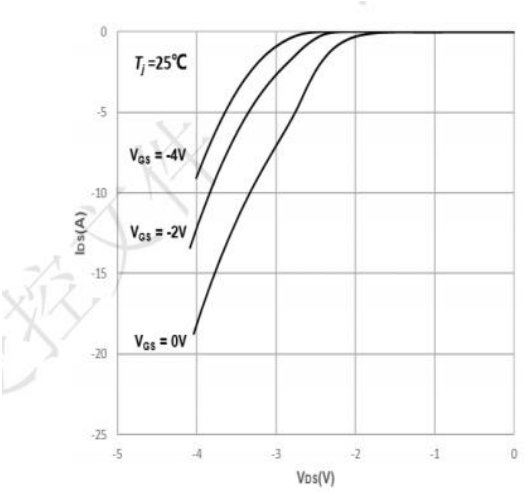
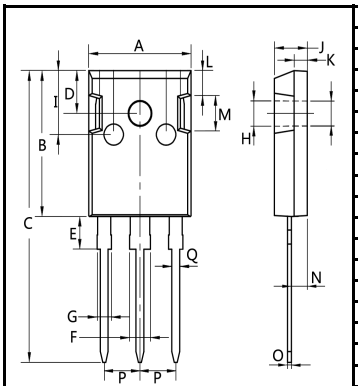


Fig9. Body Diode Characteristics

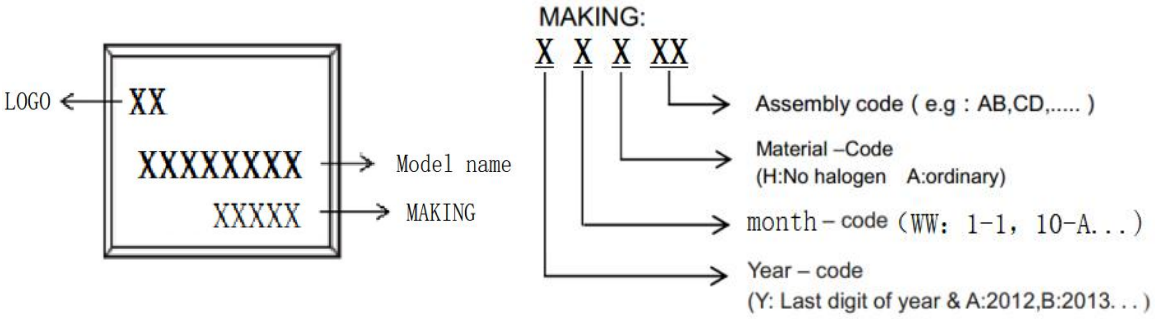
Package Outline Dimensions millimeters

TO-247

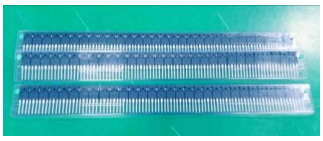


Dim.	Min.	Max.
A	15	16
B	20	21
C	40	42
D	5.5	6.5
E	4	5.5
F	2.5	3.5
G	1.75	2.5
H	3	4
I	8	10
J	4.9	5.1
K	1.9	2.1
L	3	4
M	4.75	5.25
N	2	3
O	0.55	0.65
P	Typ 5.4	
Q	1.17	1.3
All Dimensions in millimeter		
ΦP1	7.19 REF	
All Dimensions in millimeter		

Marking on the body



Packing instruction

PKG	Minimal Package	Box	Carton
TO-247			
	30pcs/pdpe	600pcs/box	3000pcs/Carton

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.

http://www.lxmicro.com

Revision History

Rev	Changes	Date
1.0	First version	2026-1-13