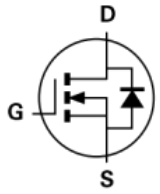
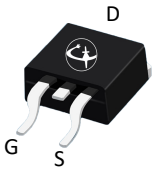
LG230N15AT

N- Channel SGT Power MOSFET

MAIN CHARACTERISTICS

I_D	230A
V_{DSS}	150V
R_{DSON}-typ （@VGS=10V Tc=25°C）	3.7mΩ





TO-263C

FEATURES

- Excellent RDS(ON) and Low Gate Charge
- 100% UIS Tested
- 100% ΔVds Tested

APPLICATIONS

- Load Switch
- PWM Application
- Power Management

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℃ maximum,10s per JESD 22-B106

Product specification classification

Part Number	Package	Mode Name	Pack
LG230N15AT	TO-263C	LG230N15AT	Tape

LG230N15AT

N- Channel SGT Power MOSFET

Maximum Ratings at Tc=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	230	A
Pulsed Drain Current (Note1)	I_{DM}	920	A
Power Dissipation	P_D	230	W
Single Pulse Avalanche Energy (Note5)	E_{AS}	1305	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case(Note 2)	$R_{\theta JC}$	0.5	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	28	°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 = 250 μA	BV_{DSS}	150	-	-	V
Drain-Source Leakage Current	V_{DS} = 150V, V_{GS} = 0 V	I_{DSS}	-	-	1	μA
Gate Leakage Current	V_{GS} = ± 20 V, V_{DS} = 0 V	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	V_{DS} = V_{GS} , I_D = 250 μA	$V_{GS(th)}$	2.2	-	4.2	V
Drain-Source On-State Resistance	V_{GS} = 10 V, I_D = 20 A	$R_{DS(on)}$	-	3.7	4.6	mΩ
Input Capacitance	V_{GS} = 0 V, V_{DS} = 75 V, f = 1 MHz	C_{iss}	-	8615	-	pF
Output Capacitance		C_{oss}	-	770	-	pF
Reverse Transfer Capacitance		C_{rss}	-	26	-	pF
Turn-on Delay Time	VDS=75V , VGS=10V , ID=20A , RGEN=3Ω	$t_{d(ON)}$	-	32	-	ns
Rise Time		t_r	-	59.7	-	ns
Turn-Off Delay Time		$t_{d(OFF)}$	-	87	-	ns
Fall Time		t_f	-	47.6	-	ns
Total Gate Charge	VDS=75V , VGS=10V , ID=20A	Q_G	-	125	-	nC
Gate to Source Charge		Q_{GS}	-	46.2	-	nC
Gate to Drain Charge		Q_{GD}	-	31.5	-	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 (Note 2)		I_S	-	-	230	A
Maximun Body-Diode Pulsed Current		I_{SM}	-	-	920	A
Drain-Source Diode Forward Voltage (Note 3)	I_{SD} = 20A	V_{SD}	-	-	1.2	V
Reverse Recovery Time	I_S = I_F, ISD=20A,V_{GS} = 0 V, dI / dt = 100 A/μs (Note3)	trr	-	110	-	ns
Reverse Recovery Charge		Qrr	-	426	-	nC

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

RATINGS AND CHARACTERISTIC CURVES

Figure 1: Power De-rating

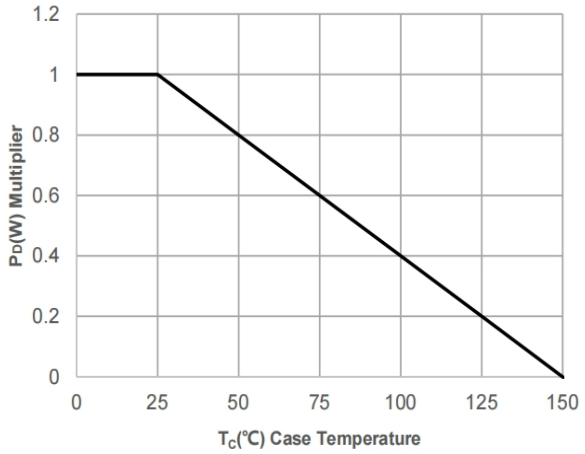


Figure 2: Current De-rating

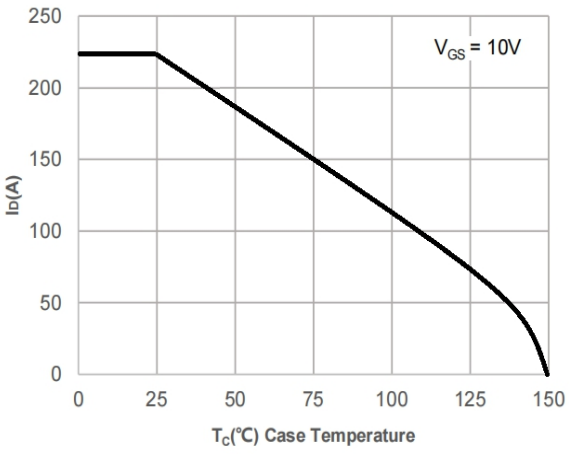


Figure 3: Normalized Maximum Transient Thermal Impedance

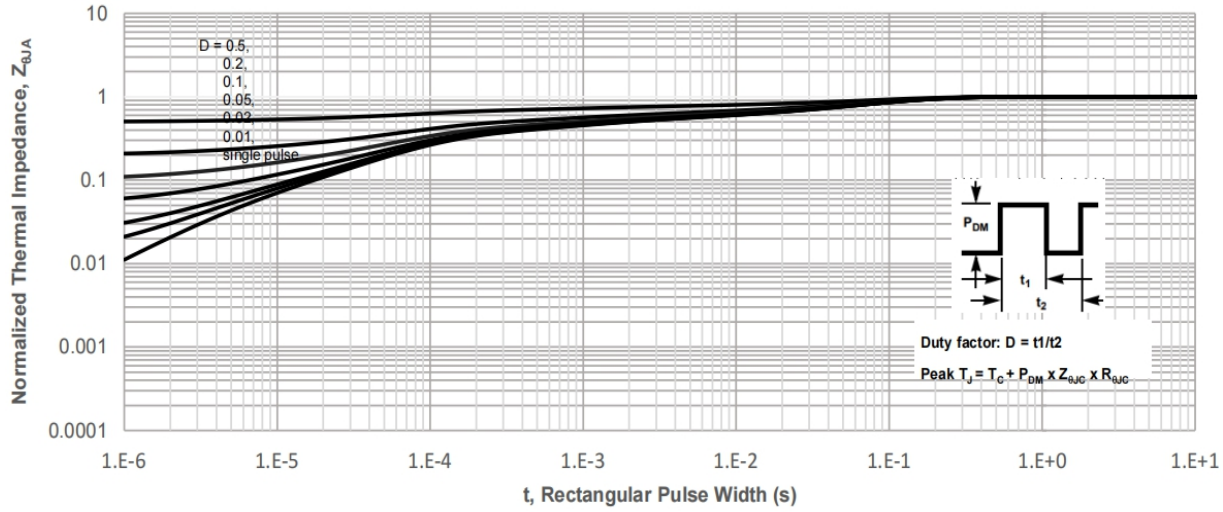
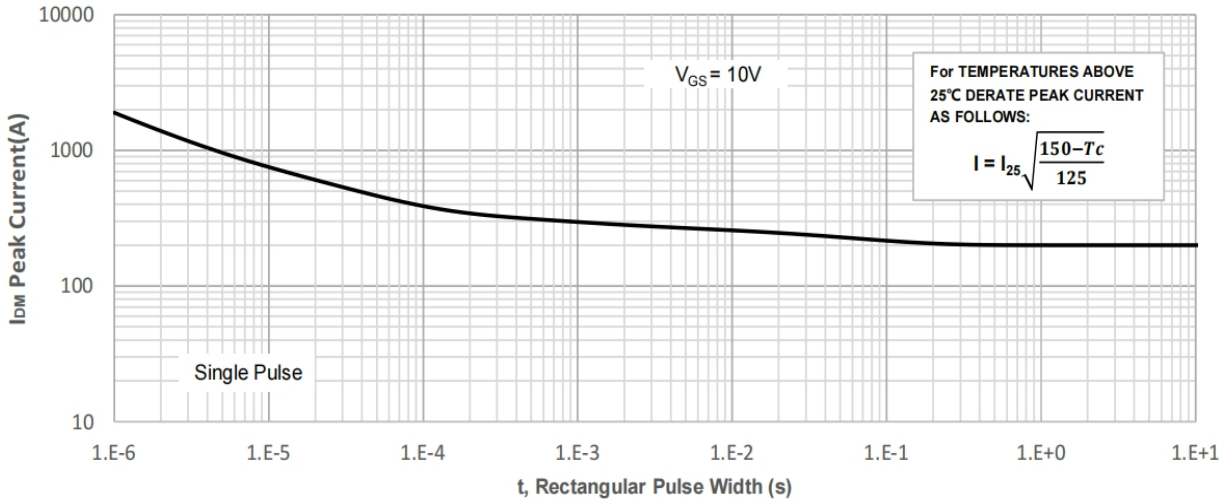


Figure 4: Peak Current Capacity



RATINGS AND CHARACTERISTIC CURVES

Figure 5: Output Characteristics

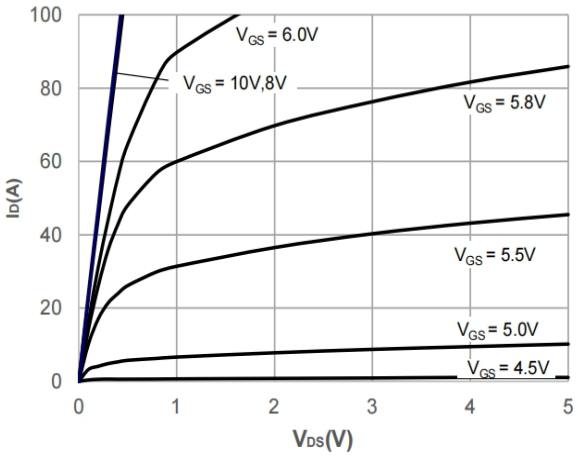


Figure 6: Typical Transfer Characteristics

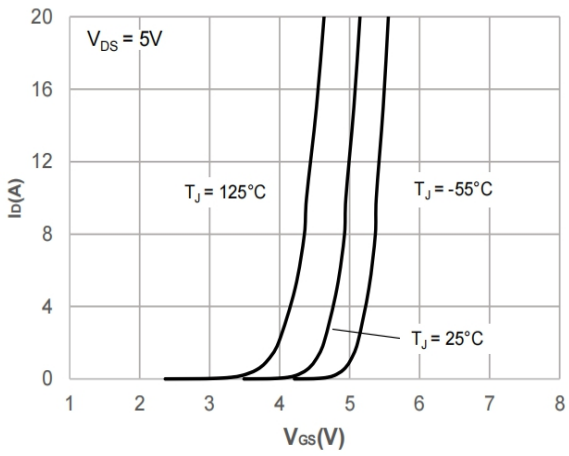


Figure 7: On-resistance vs. Drain Current

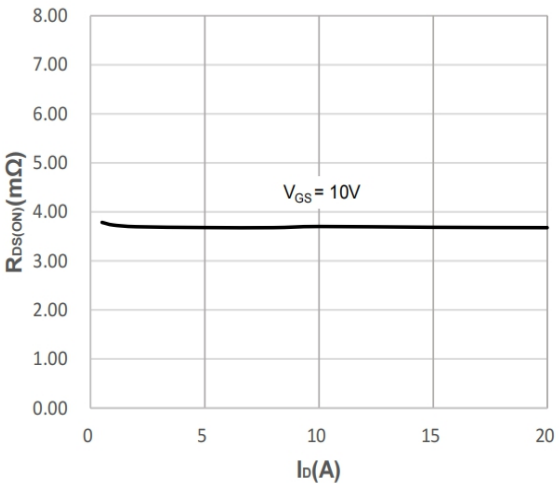


Figure 8: Body Diode Characteristics

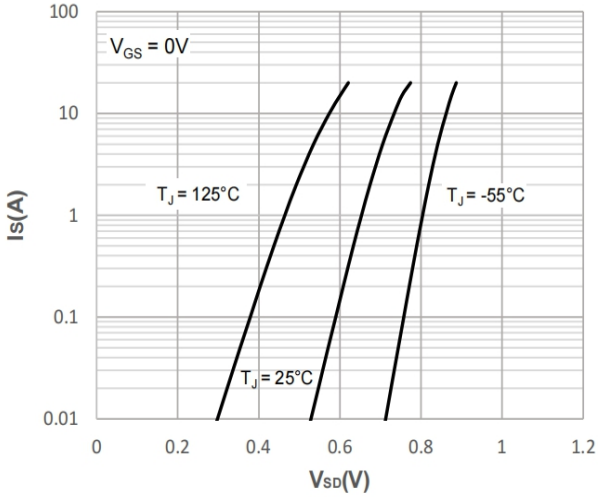


Figure 9: Gate Charge Characteristics

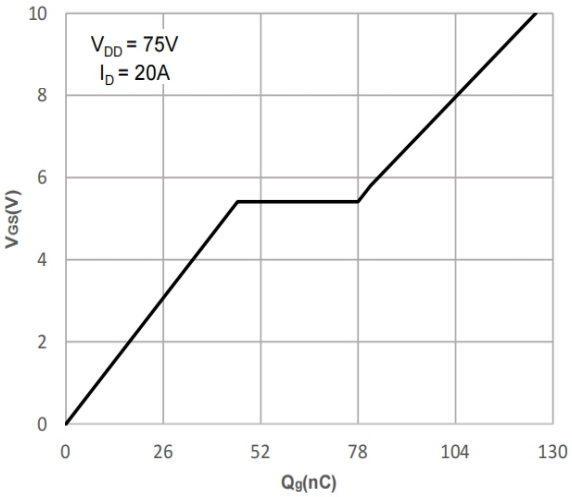
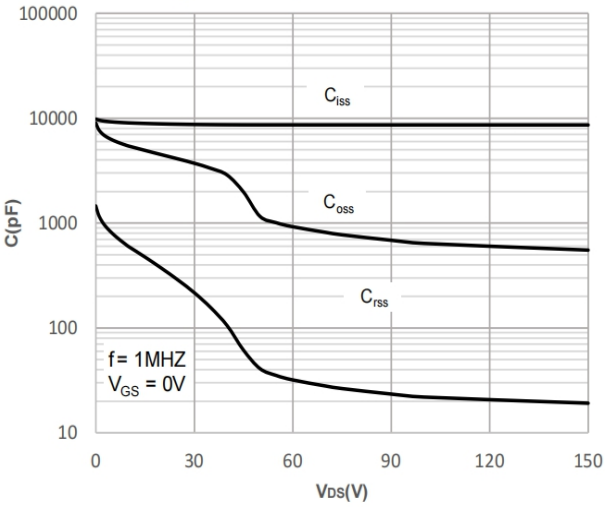


Figure 10: Capacitance Characteristics



RATINGS AND CHARACTERISTIC CURVES

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

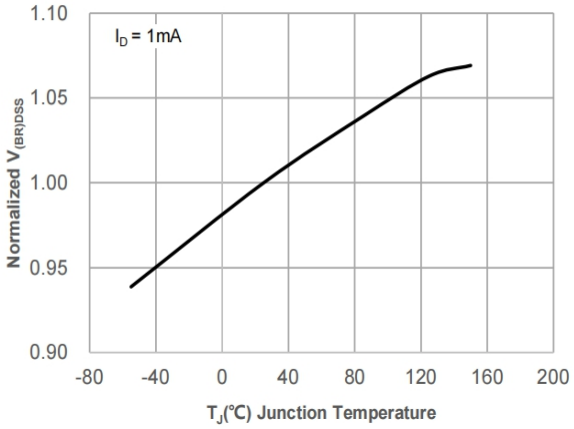


Figure 12: Normalized on Resistance vs. Junction Temperature

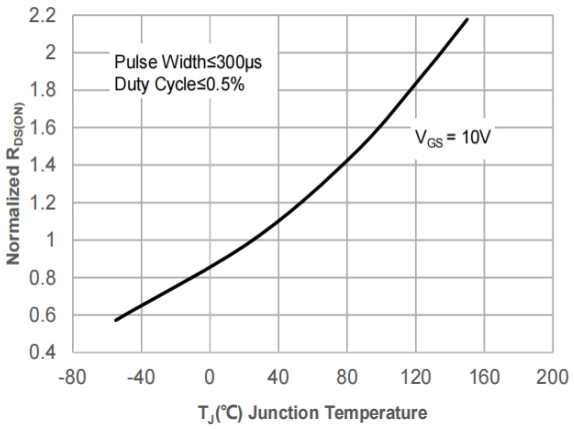


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

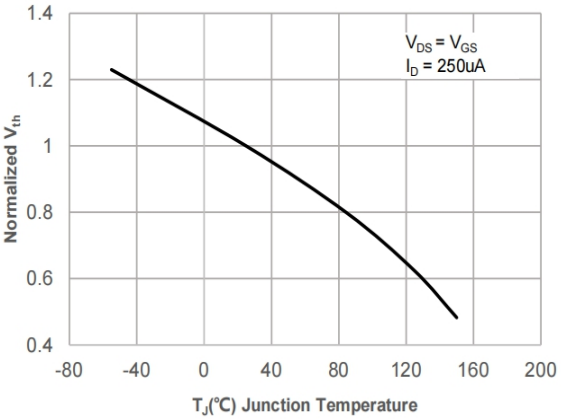


Figure 14: $R_{DS(ON)}$ vs. V_{GS}

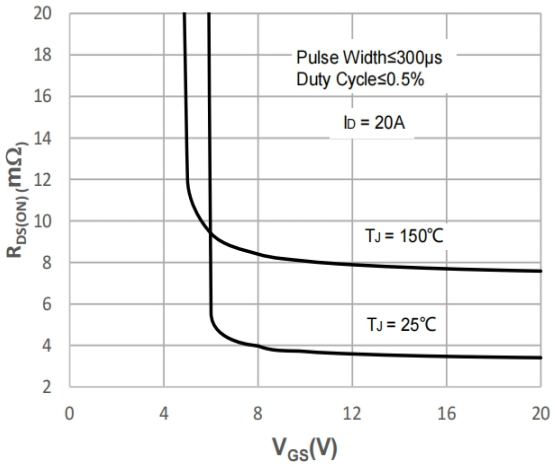
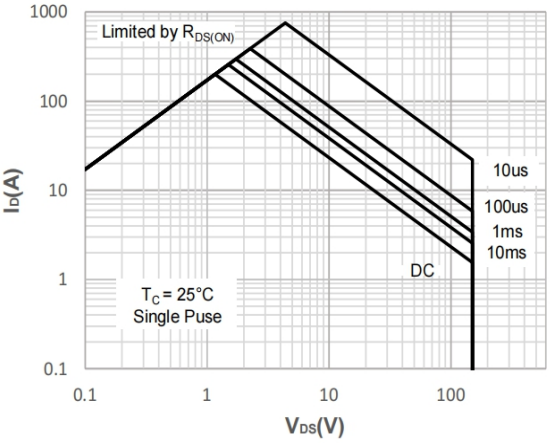
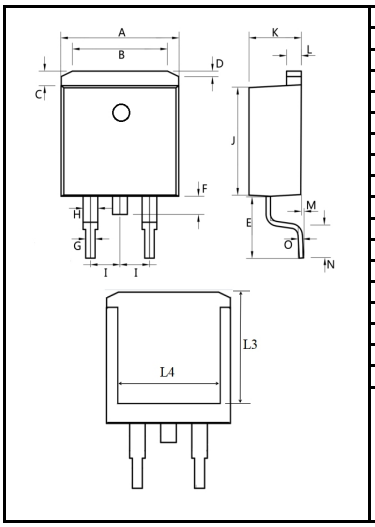


Figure 15: Maximum Safe Operating Area



Package Outline Dimensions millimeters

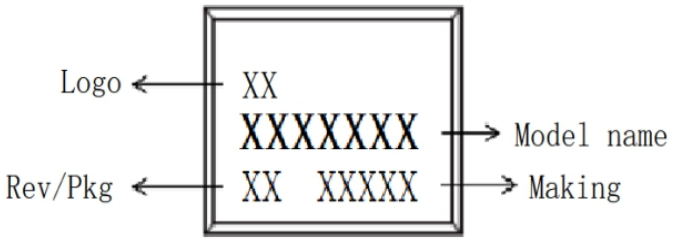
TO-263C

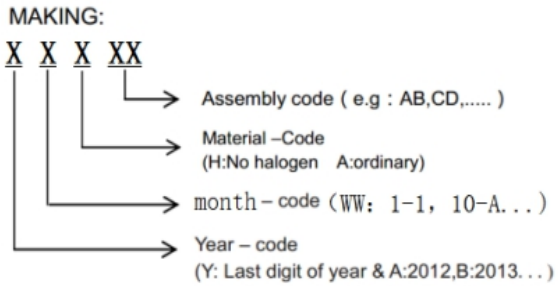


Dim.	Min.	Max.
A	9.8	10.2
B	6.1	6.7
C	1.1	1.4
D	0.5	1
E	4.6	5
F	1.4	1.6
G	0.7	0.9
H	1.17	1.37
I	Typ2.54	
J	9	9.2
K	4.3	4.7
L	1.25	1.35
L3	7.9	8.1
L4	7.5	7.7
M	0.02	0.23
N	2.2	2.8
O	0.45	0.55

All Dimensions in millimeter

Marking on the body





packing instruction

PKG	Minimal Package	Mini Box	Box
TO-263C			
	800pcs/disk	1600pcs/disk	8000pcs/box

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.

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Revision History

Rev	Changes	Date
1.0	First version	2025/5/27