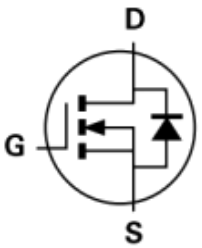
LG340N10AL

N-Channel SGT Power MOSFET

MAIN CHARACTERISTICS

I_D	340A
V_{DSS}	100V
R_{DSON}-typ （@VGS=10V Tc=25°C）	1.2mΩ



TOLL

FEATURES

- Fast switching
- 100% avalanche tested
- Low losses

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
LG340N10AL	TOLL	LG340N10AL	Tape

LG340N10AL

N-Channel SGT Power MOSFET

Maximum Ratings at Tc=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	340	A
Pulsed Drain Current (Note1)	I_{DM}	1360	A
Power Dissipation	P_D	298	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	1050	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.42	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	43	°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}	100	-	-	V
Drain-Source Leakage Current	V_{DS} = 100 V, 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	-	4	V
Drain-Source On-State Resistance	VGS=10V, ID=20A	RDS(on)	-	1.2	1.5	mΩ
Input Capacitance	VDS=25V , VGS=0V , f=200KHz	C_{iss}	-	10012	-	pF
Output Capacitance		C_{oss}	-	5602	-	pF
Reverse Transfer Capacitance		C_{rss}	-	146	-	pF
Turn-on Delay Time(Note2)	VDD=80V , VGS=10V , RG=5Ω , ID=40A	$t_{d(ON)}$	-	43	-	ns
Rise Time(Note2)		t_r	-	70	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	96	-	ns
Fall Time(Note2)		t_f	-	58	-	ns
Total Gate Charge(Note2)	VDS=80V , VGS=10V , ID=40A	Q_G	-	130	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	43	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	22	-	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	-	-	340	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	1360	A
Drain-Source Diode Forward Voltage	VGS=0V , IS=20A , TJ=25℃	V_{SD}	-	-	1.2	V
Reverse Recovery Time	I_S = I_F, ISD=40A,V_{GS} = 0 V, dI / dt = 100 A/μs (Note3)	trr	-	104	-	ns
Reverse Recovery Charge		Qrr	-	0.25	-	μC

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

RATINGS AND CHARACTERISTIC CURVES

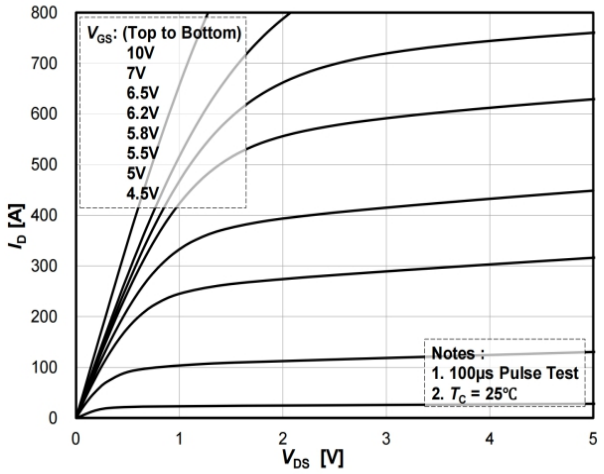


Figure 1. **On-Region Characteristics**

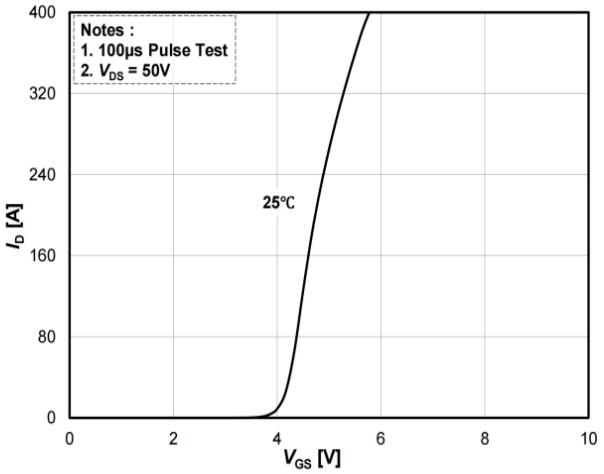


Figure 2. **Transfer Characteristics**

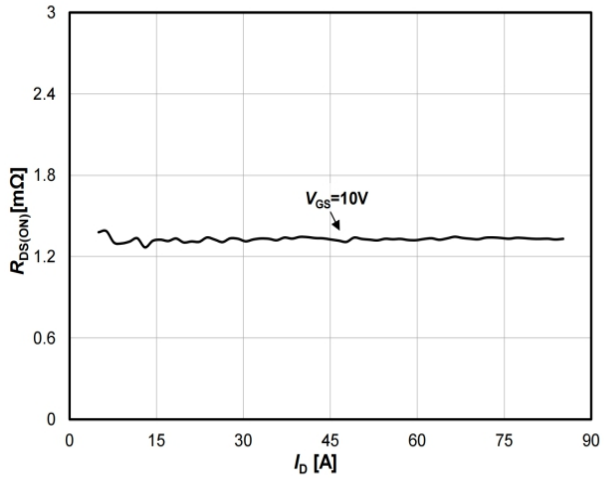


Figure 3. **On Resistance vs. Drain Current**

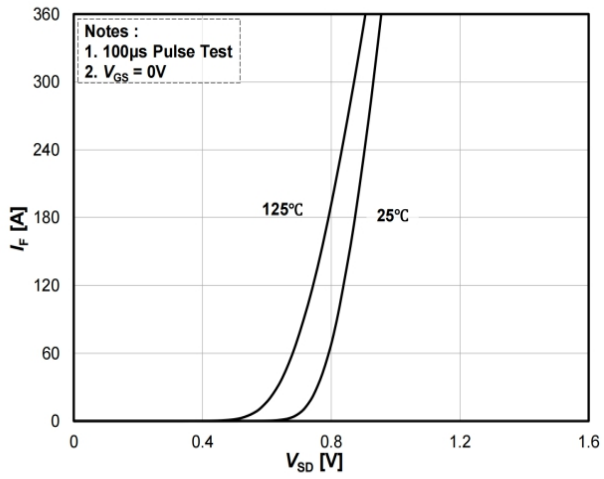


Figure 4. **Diode Forward Voltage vs. Current**

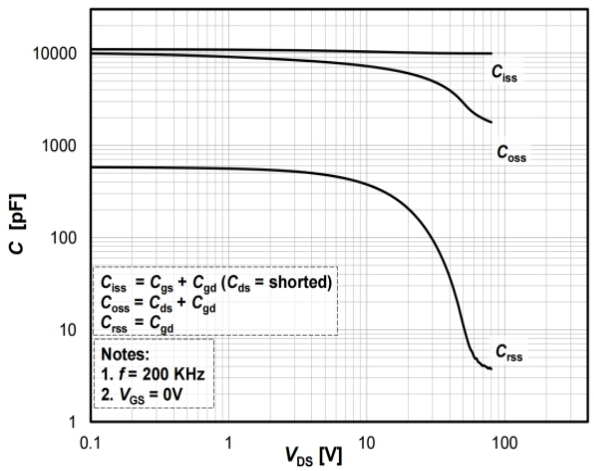


Figure 5. **Capacitance Characteristics**

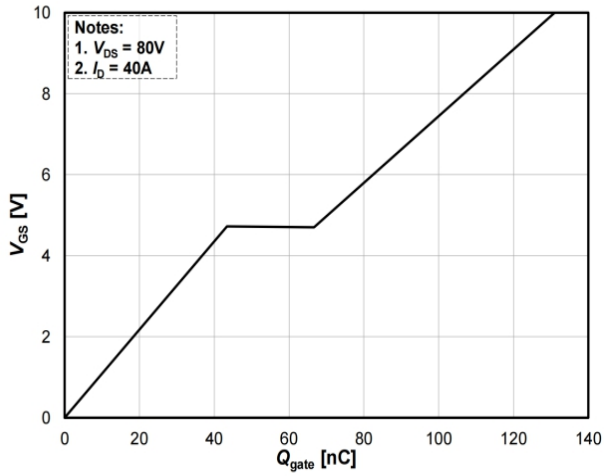


Figure 6. **Gate Charge Characteristics**

RATINGS AND CHARACTERISTIC CURVES

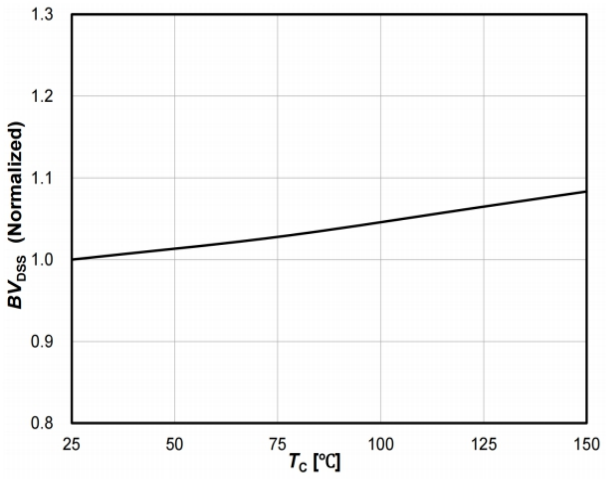


Figure 7. **Normalized BV_{DSS} vs. Temperature**

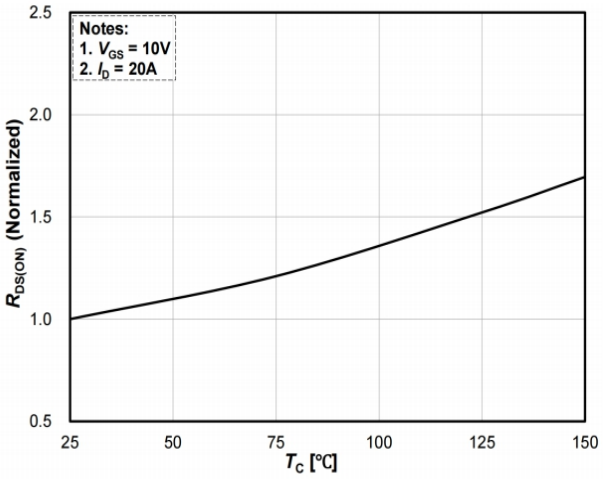


Figure 8. **Normalized On-Resistance Variation vs. Temperature**

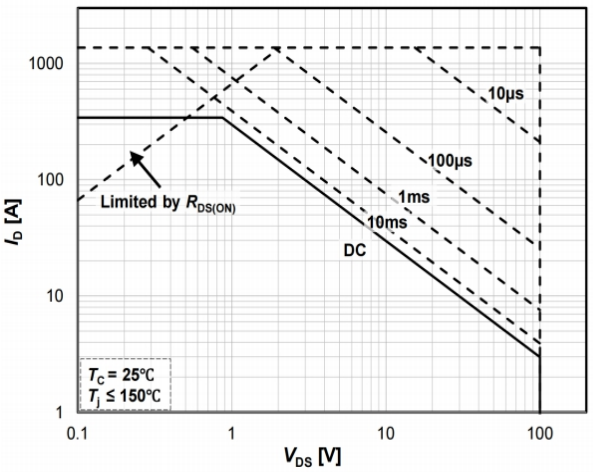


Figure 9. **Safe Operating Area** [3)]

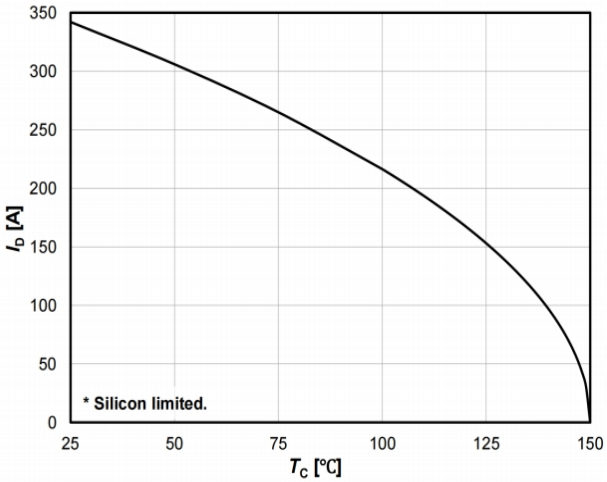


Figure 10. **Drain Current vs. Temperature**

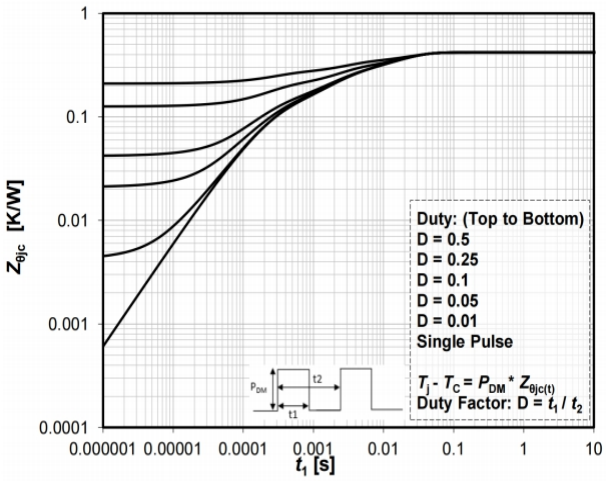
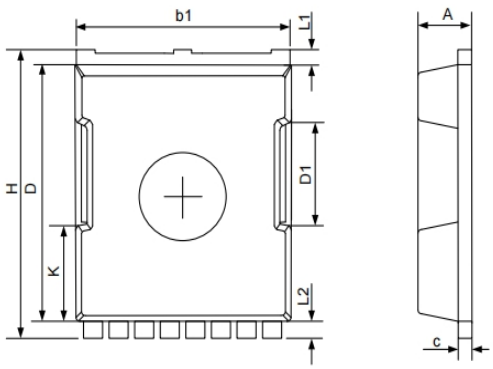


Figure 11. **Transient Thermal Impedance**

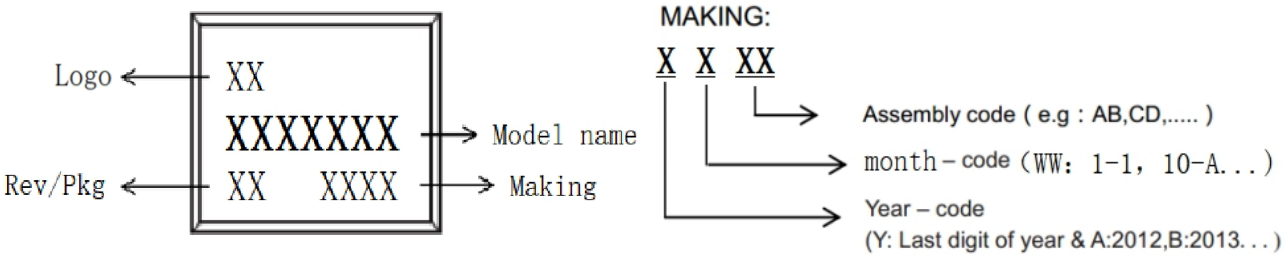
Package Outline Dimensions millimeters

TOLL-8L 单位：毫米



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	2.20	2.30	2.40
b	0.70	0.80	0.90
b1	9.70	9.80	9.90
c	0.40	0.50	0.60
D	10.28	10.38	10.48
D1	3.15	3.30	3.45
E	9.70	9.90	10.10
E1	9.30	9.50	9.70
E2	8.35	8.50	8.65
e	1.20 BSC		
H	11.48	11.73	11.88
H1	3.16	3.26	3.36
H2	7.20	7.35	7.50
K	4.03	4.18	4.33
L	1.60	1.85	2.10
L1	0.55	0.70	0.85
L2	0.45	0.60	0.75
L3	1.05	1.20	1.30

Marking on the body



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	2025/6/16