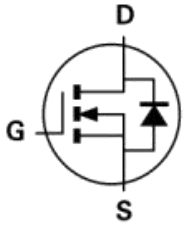
LG100N10AD

N-Channel Enhancement Mode MOSFET

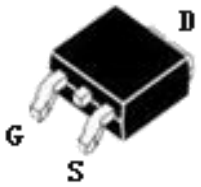
MAIN CHARACTERISTICS

I_D	100A
V_{DSS}	100V
R_{DSON}-typ （@V_{GS}=10V）	5.3mΩ



FEATURES

- Best-in-Class FOM
- Low Gate Charge
- High Current Capability



TO-252

APPLICATIONS

- Power Management in Telecom.,Industrial Automatio
- Motor Driving in Power Tool,E-vehicle,Robotics
- Current Switching in DC/DC&AC/DC(SR) Sub-system

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
LG100N10AD	TO-252	LG100N10AD	Tape

LG100N10AD

N-Channel Enhancement Mode MOSFET

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	100	A
Pulsed Drain Current (Note1)	I_{DM}	360	A
Power Dissipation	P_D	96	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	216	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.7	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	50	°C/W

Note1:Pulse test: 300 μs 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 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	$V_{GS(th)}$	1.2	-	2.5	V
Drain-Source On-State Resistance	V_{GS} = 10 V, I_D = 20A	$R_{DS(on)}$	-	5.3	6.4	mΩ
	V_{GS} = 4.5 V, I_D = 15A	$R_{DS(on)}$	-	7.5	9.4	mΩ
Input Capacitance	VDS=50V , VGS=0V , f=1MHz	C_{iss}	-	2420	-	pF
Output Capacitance		C_{oss}	-	900	-	pF
Reverse Transfer Capacitance		C_{rss}	-	35	-	pF
Turn-on Delay Time(Note2)	VDD=50V , VGS=10V , RG=3Ω , ID=20 A	$t_{d(ON)}$	-	11.2	-	ns
Rise Time(Note2)		t_r	-	23	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	38	-	ns
Fall Time(Note2)		t_f	-	15.3	-	ns
Total Gate Charge(Note2)	VDS=50V , VGS=10V , ID=20A	Q_G	-	43	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	9.4	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	10.3	-	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	-	-	100	A
Drain-Source Diode Forward Voltage	VGS=0V , IS=20A , TJ=25℃	V_{SD}	-	-	1.2	V
Reverse Recovery Time(Note2)	T_J = 25℃, I_F= 20A di / dt = 100 A/μs	trr	-	42	-	ns
Reverse Recovery Charge(Note2)		Qrr	-	46	-	nC

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

RATINGS AND CHARACTERISTIC CURVES

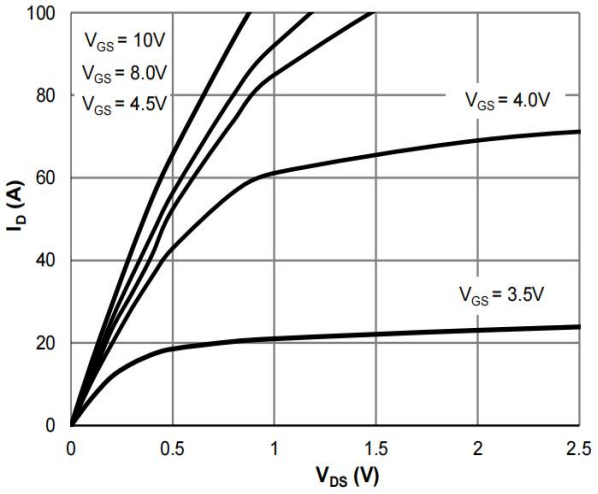


Figure 1: Saturation Characteristics

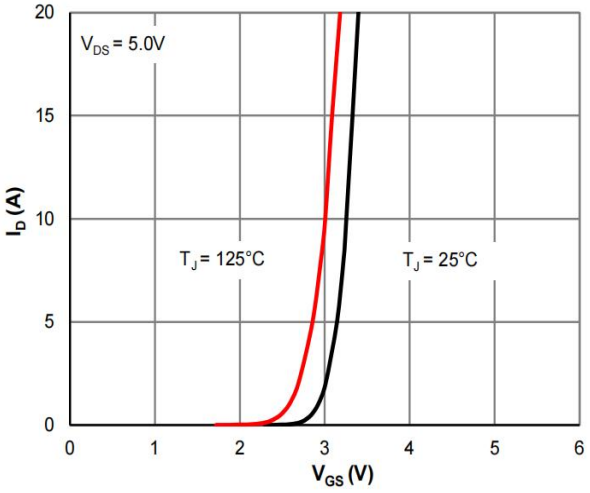


Figure 2: Transfer Characteristics

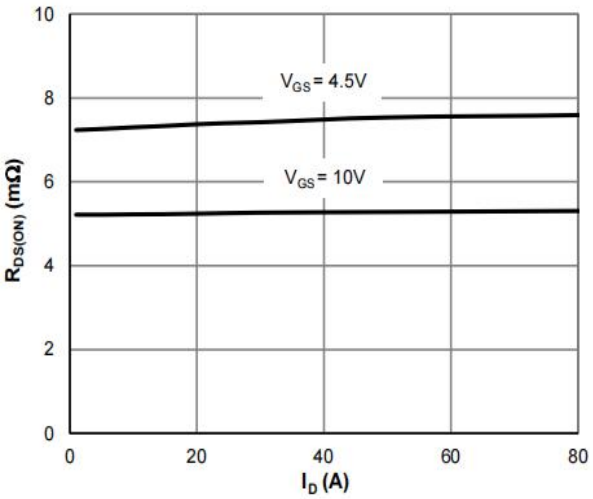


Figure 3: $R_{DS(ON)}$ vs. Drain Current

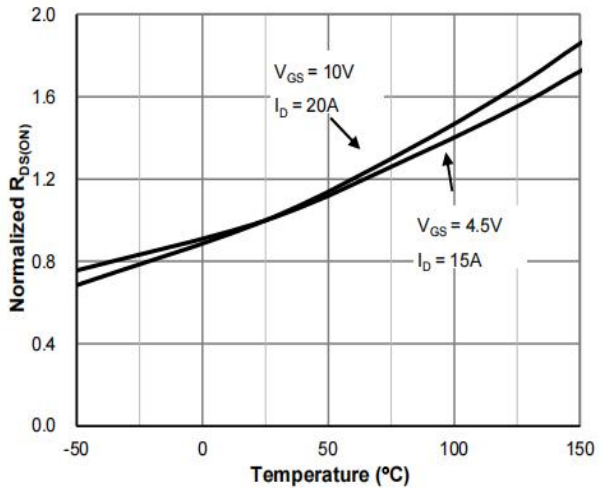


Figure 4: $R_{DS(ON)}$ vs. Junction Temperature

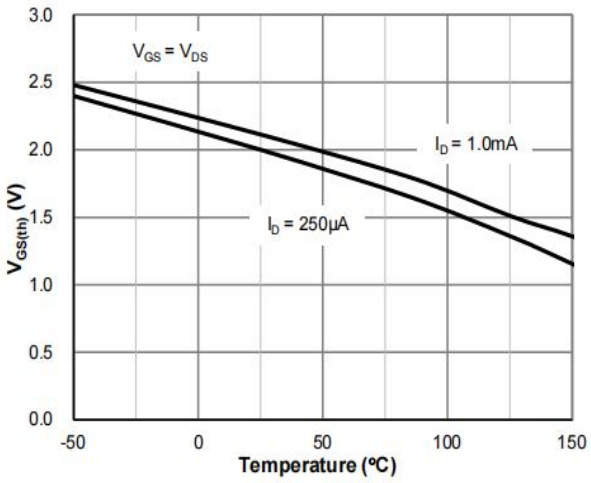


Figure 5: $V_{GS(th)}$ vs. Junction Temperature

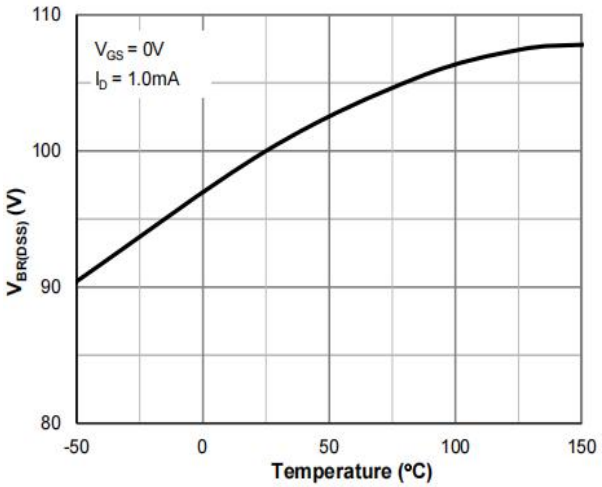


Figure 6: $V_{BR(DSS)}$ vs. Junction Temperature

RATINGS AND CHARACTERISTIC CURVES

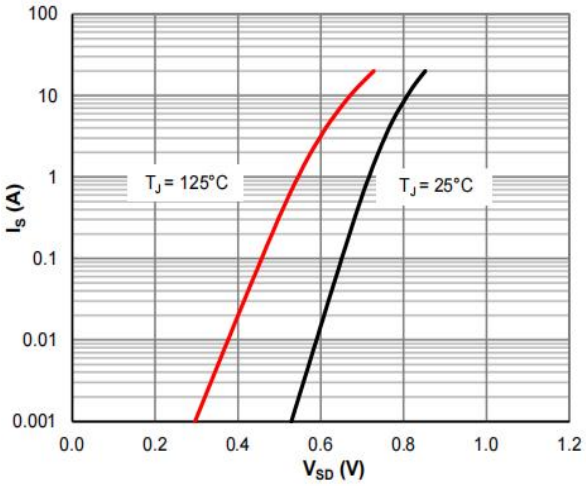


Figure 7: Body-Diode Characteristics

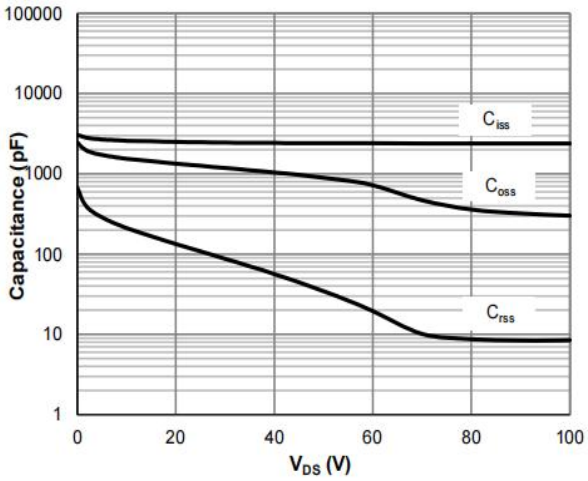


Figure 8: Capacitance Characteristics

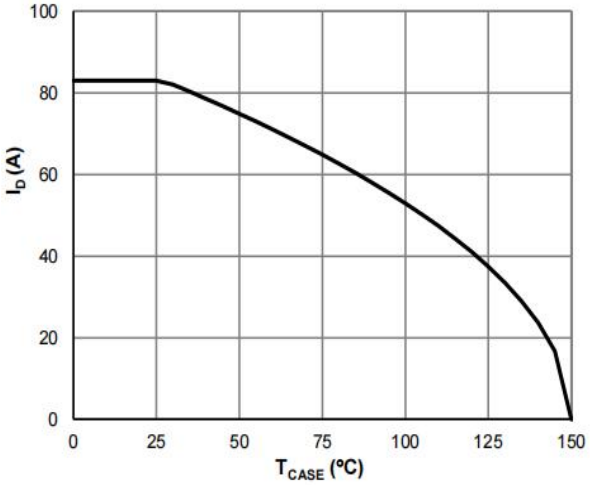


Figure 9: Current De-rating

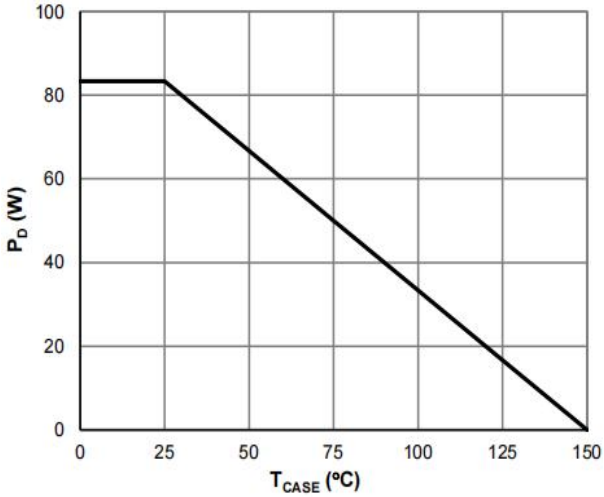


Figure 10: Power De-rating

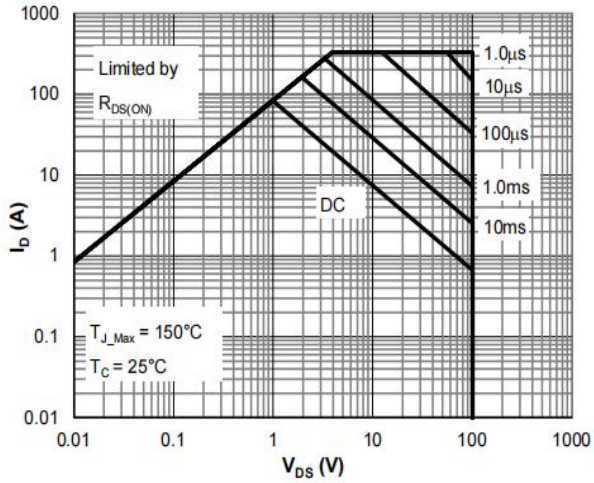


Figure 11: Maximum Safe Operating Area

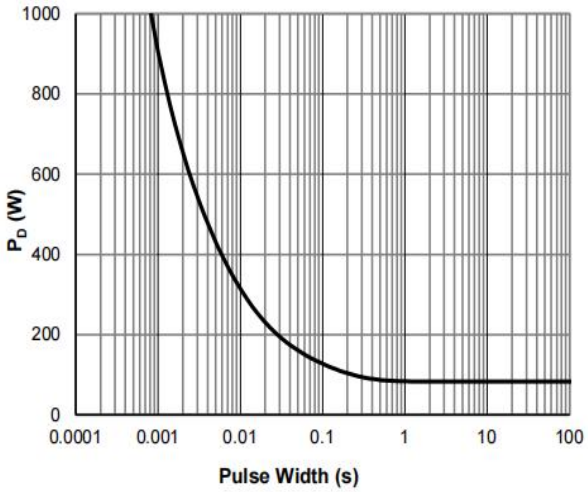


Figure 12: Single Pulse Power Rating, Junction-to-Case

Package Outline Dimensions millimeters

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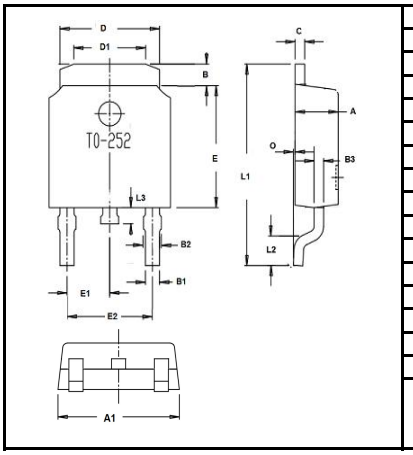
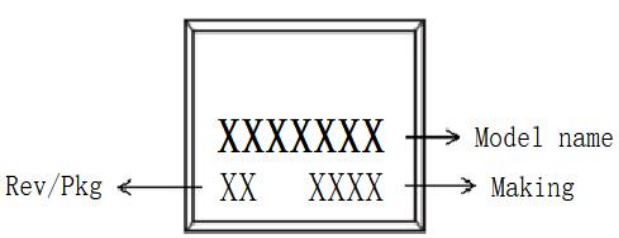
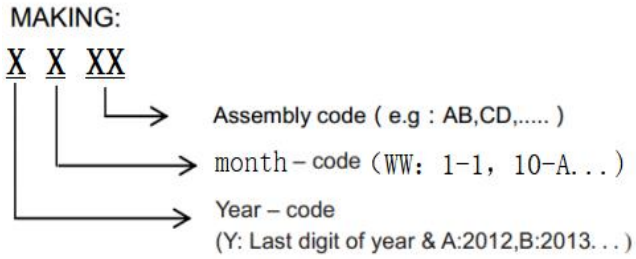


Dim.	Min.	Max.
A	2.1	2.5
A1	6.3	6.9
B	0.95	1.55
B1	0.6	0.8
B2	0.75	0.95
C	Typ0.5	
D	5.3	5.5
D1	3.65	4.05
E	5.8	6.4
E1	Typ2.3	
E2	Typ4.6	
O	0	0.15
L1	9	11
L2	Typ1.5	
L3	0.7	1
All Dimensions in millimeter		

Marking on the body





packing instruction

PKG	最小包装	内盒	外箱
TO-252			
	2500pcs/盘	5000pcs/盒	25000pcs/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.