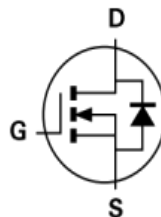


MAIN CHARACTERISTICS

I_D	30A
V_{DSS}	60V
$R_{DS(on)-typ}$ (@ $V_{GS}=10V$)	23m Ω



FEATURES

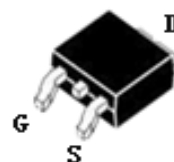
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge

APPLICATIONS

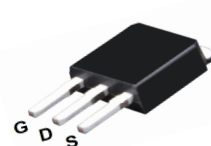
- Load Switch
- PWM Application
- Power Management

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°C maximum, 10s per JESD 22-B106



TO-252



TO-251

Product specification classification

Part Number	Package	Mode Name	Pack
LT30N06AD	TO-252	LT30N06AD	Tape
LT30N06AU	TO-251	LT30N06AU	Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
		252	
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continue Drain Current	I_D	30	A
Pulsed Drain Current (Note1)	I_{DM}	74	A
Power Dissipation	P_D	50	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	144	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	100	°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}	60	-	-	V
Drain-Source Leakage Current	$V_{DS} = 60 \text{ V}, V_{GS} = 0 \text{ V}$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 20 \text{ V}, V_{DS} = 0 \text{ V}$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	$V_{GS(th)}$	1	-	2.5	V
Drain-Source On-State Resistance	$V_{GS} = 10 \text{ V}, I_D = 15 \text{ A}$	$R_{DS(on)}$	-	23	29	m Ω
	$V_{GS} = 4.5 \text{ V}, I_D = 10 \text{ A}$		-	28	40	m Ω
Forward Transconductance	$V_{DS} = 5 \text{ V}, I_D = 20 \text{ A}$	g_{fs}	30	-	-	S
Input Capacitance	$V_{GS} = 0 \text{ V}, V_{DS} = 30 \text{ V}, f = 1 \text{ MHz}$	C_{iss}	-	1905	-	pF
Output Capacitance		C_{oss}	-	132	-	pF
Reverse Transfer Capacitance		C_{rss}	-	94	-	pF
Turn-on Delay Time(Note2)	$V_{GS} = 10 \text{ V}, V_{DS} = 30 \text{ V}, R_G = 3 \Omega$	$t_{d(ON)}$	-	5.2	-	ns
Rise Time(Note2)		t_r	-	2.5	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	16	-	ns
Fall Time(Note2)		t_f	-	2.2	-	ns
Total Gate Charge(Note2)	$I_D = 20 \text{ A}, V_{DS} = 30 \text{ V}, V_{GS} = 10 \text{ V}$	Q_G	-	31	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	4.4	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	7.6	-	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	-	-	30	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	74	A
Drain-Source Diode Forward Voltage	$I_{SD} = 30 \text{ A}$	V_{SD}	-	-	1.2	V
Reverse Recovery Time(Note2)	$I_{SD} = 20 \text{ A}, V_{GS} = 0 \text{ V}, dI_F / dt = 100 \text{ A}/\mu\text{s}$	t_{rr}	-	35	-	ns
Reverse Recovery Charge(Note2)		Q_{rr}	-	53	-	μC

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

RATINGS AND CHARACTERISTIC CURVES

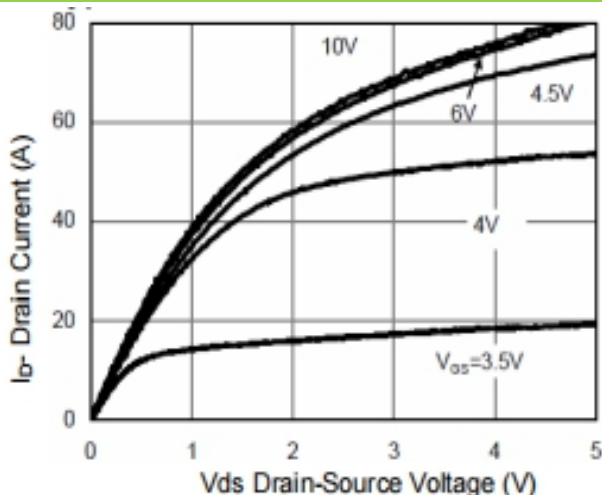


Figure 1 Output Characteristics

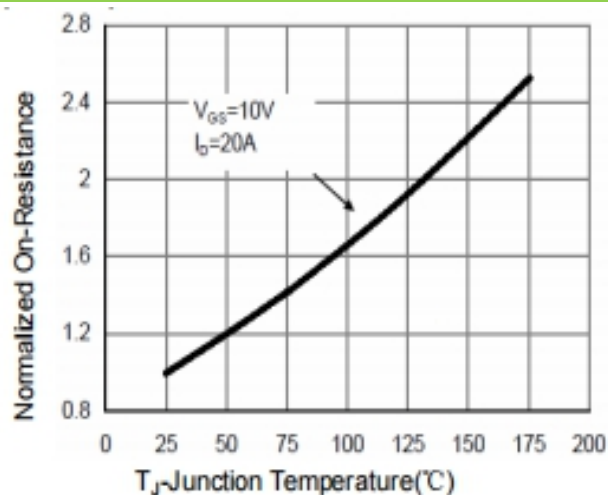


Figure 4 $R_{DS(on)}$ -Junction Temperature

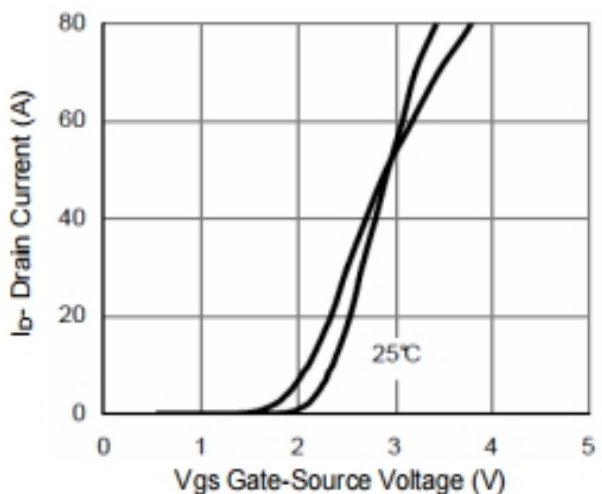


Figure 2 Transfer Characteristics

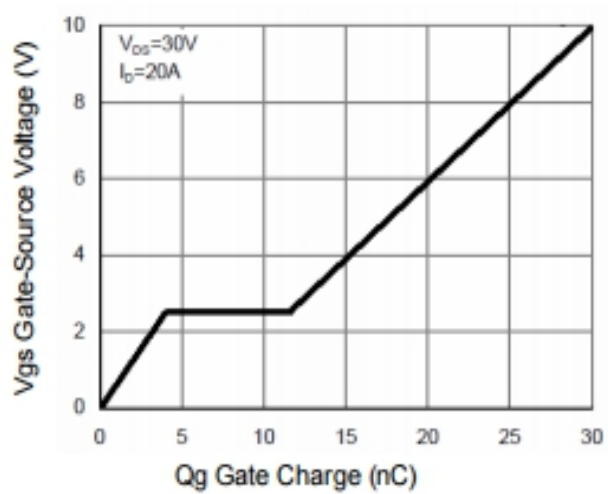


Figure 5 Gate Charge

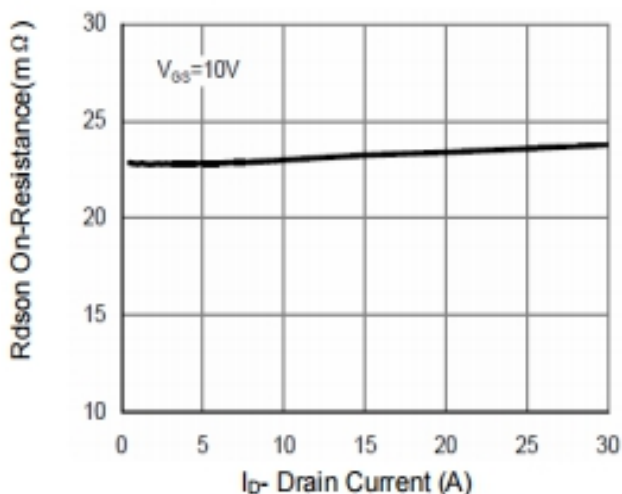


Figure 3 $R_{DS(on)}$ - Drain Current

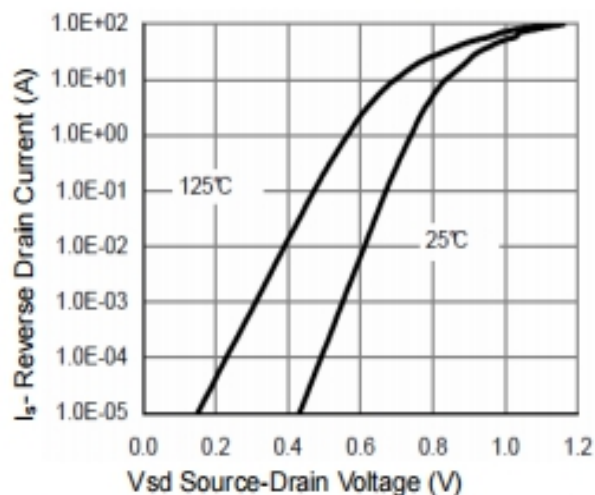


Figure 6 Source- Drain Diode Forward

RATINGS AND CHARACTERISTIC CURVES

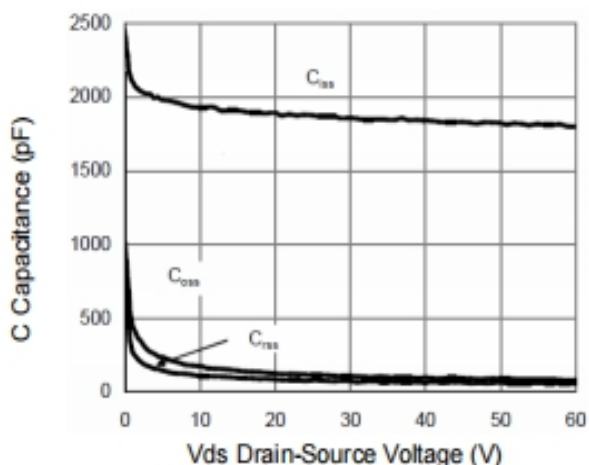


Figure 7 Capacitance vs Vds

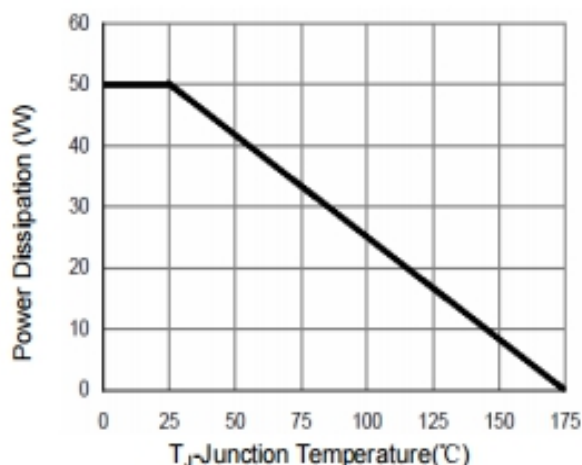


Figure 9 Power De-rating

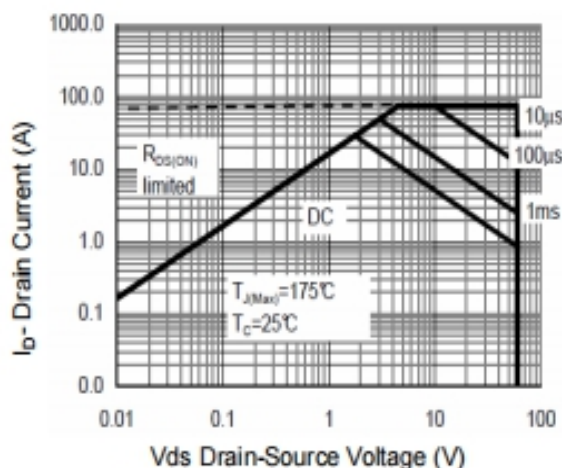


Figure 8 Safe Operation Area

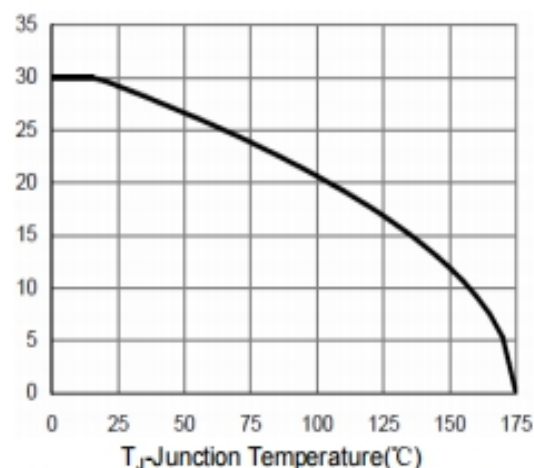


Figure 10 $V_{GS(th)}$ vs Junction Temperature

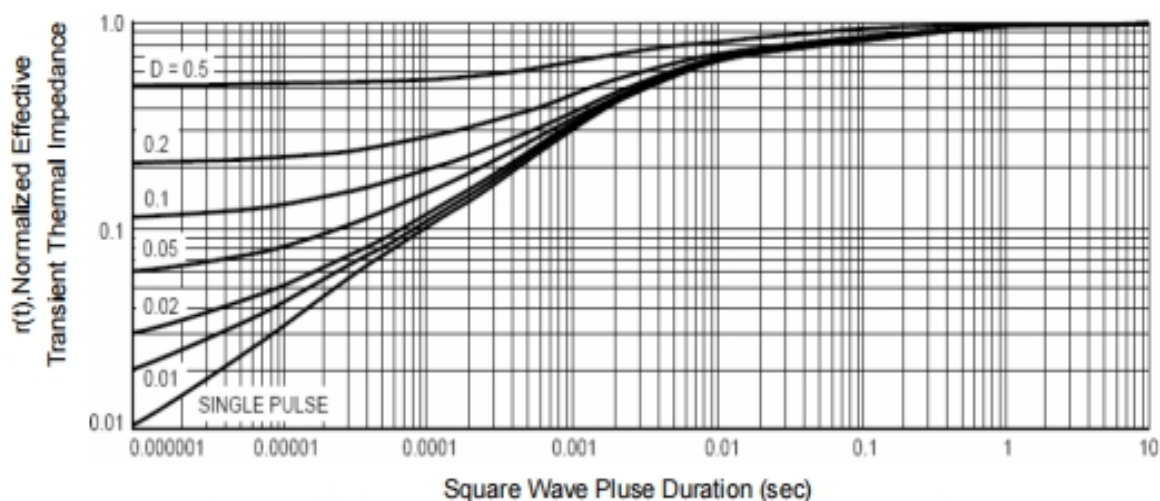
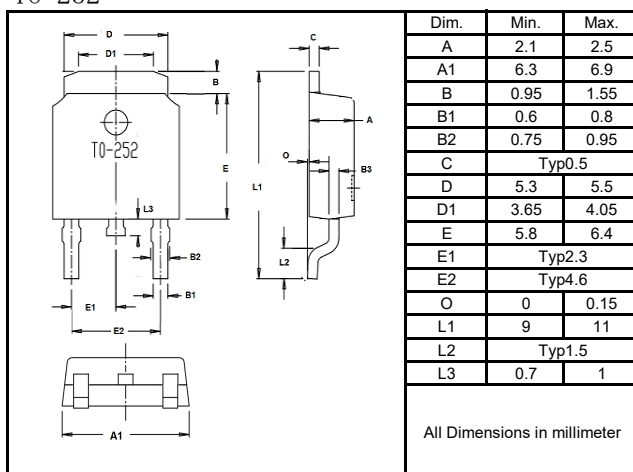


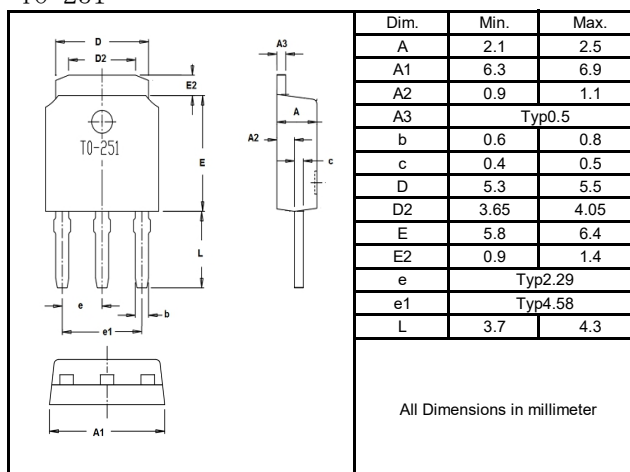
Figure 11 Normalized Maximum Transient Thermal Impedance

Package Outline Dimensions millimeters

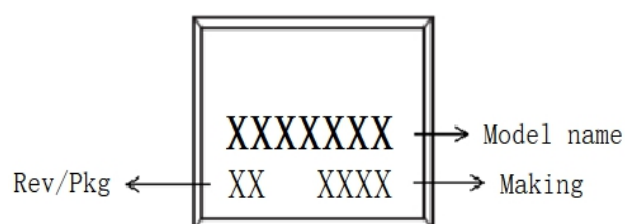
T0-252



T0-251



Marking on the body



MAKING:

X X XX

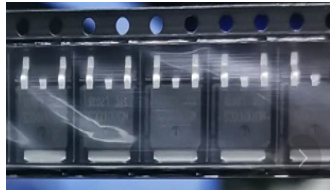
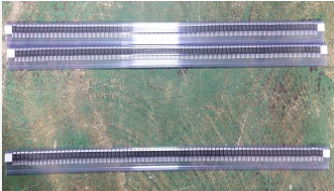
Assembly code (e.g : AB,CD,.....)

month - code (WW: 1-1, 10-A...)

Year - code

(Y: Last digit of year & A:2012,B:2013. ...)

packing instruction

PKG	最小包装	内盒	外箱
TO-252			
	2500pcs/盘	5000pcs/盒	25000pcs/箱
TO-251			
	80pcs/管	4000pcs/盒	24000pcs/箱

Notice

All product,product specifications and data are subject to change without notice to improve.The right to explain is owned by LINGXUN company.

Confirm that operation temperature is within the specified range described in the product specification. Avoid applying power exceeding power; 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