

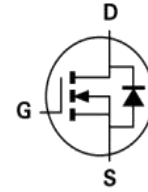


# LT30N03AD

## N-Channel Enhancement Mode MOSFET

### MAIN CHARACTERISTICS

$I_D$	30A
$V_{DSS}$	30V
$R_{DS(on)}$ -typ (@ $V_{GS}=10V$ )	9.2m $\Omega$



### FEATURES

- Adopt advanced trench technology to provide excellent  $R_{DS(ON)}$ , low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.



### APPLICATIONS

- Battery protection
- Load switch
- Uninterruptible power supply

### 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

### Product specification classification

Part Number	Package	Mode Name	Pack
LT30N03AD	TO-252	LT30N03AD	Tape



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### Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continue Drain Current	$I_D$	30	A
Pulsed Drain Current (Note1)	$I_{DM}$	80	A
Power Dissipation	$P_D$	40	W
Single Pulse Avalanche Energy (Note1)	$E_{AS}$	72	mJ
Operating Temperature Range	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.8	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	55	°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	$V_{GS} = 0 V, I_D = 250 \mu A$	$BV_{DSS}$	30	-	-	V
Drain-Source Leakage Current	$V_{DS} = 30 V, V_{GS} = 0 V$	$I_{DSS}$	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 20 V, V_{DS} = 0 V$	$I_{GSS}$	-	-	±100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu A$	$V_{GS(th)}$	1	-	2.5	V
Drain-Source On-State Resistance (Note 3)	$V_{GS} = 10 V, I_D = 10 A$	$R_{DS(on)}$	-	9.2	12	mΩ
	$V_{GS} = 4.5 V, I_D = 5 A$	$R_{DS(on)}$	-	15	21	mΩ
Forward Transconductance	$V_{DS} = 5 V, I_D = 20 A$	$g_{fs}$	26	-	-	S
Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1MHz$	$C_{iss}$	-	938	-	pF
Output Capacitance		$C_{oss}$	-	142	-	pF
Reverse Transfer Capacitance		$C_{rss}$	-	99	-	pF
Turn-on Delay Time(Note2)	$V_{DD}=15V, V_{GS}=10V, RG=3\Omega, RL=0.75\Omega$	$t_{d(ON)}$	-	5	-	ns
Rise Time(Note2)		$t_r$	-	12	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	19	-	ns
Fall Time(Note2)		$t_f$	-	6	-	ns
Total Gate Charge(Note2)	$V_{DS}=15V, V_{GS}=10V, I_D=20A$	$Q_G$	-	17.5	-	nC
Gate to Source Charge(Note2)		$Q_{GS}$	-	3	-	nC
Gate to Drain Charge(Note2)		$Q_{GD}$	-	4.1	-	nC

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

Characteristics	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximum Body-Diode Continuous Current		$I_S$	-	-	30	A
Drain-Source Diode Forward Voltage	$V_{GS}=0V, I_S=20A, T_J=25^\circ C$	$V_{SD}$	-	-	1.2	V
Reverse Recovery Time(Note2)	$T_J = 25^\circ C, I_F = 20A$	$t_{rr}$	-	19	-	ns
Reverse Recovery Charge(Note2)	$di / dt = 100 A/\mu s$	$Q_{rr}$	-	10	-	nC

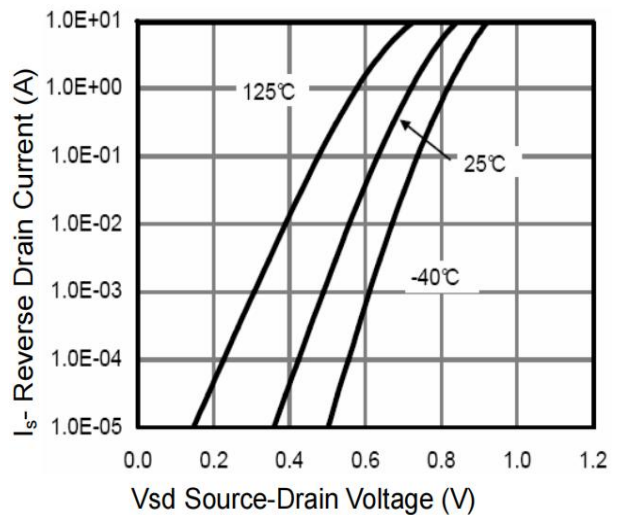
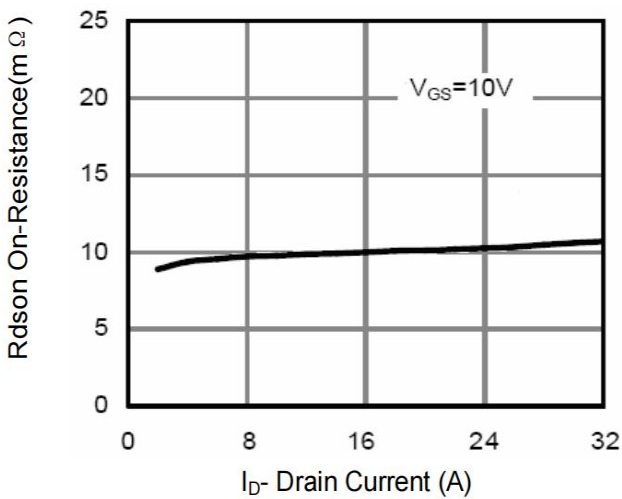
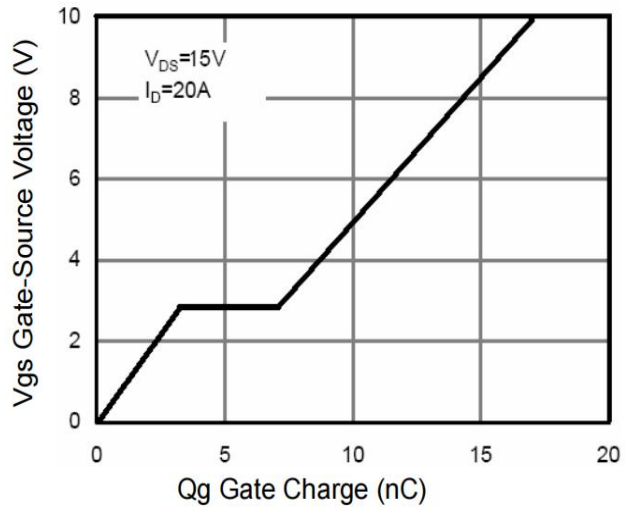
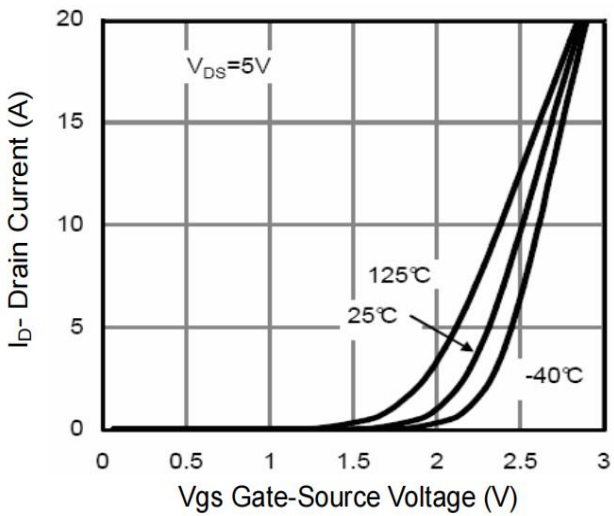
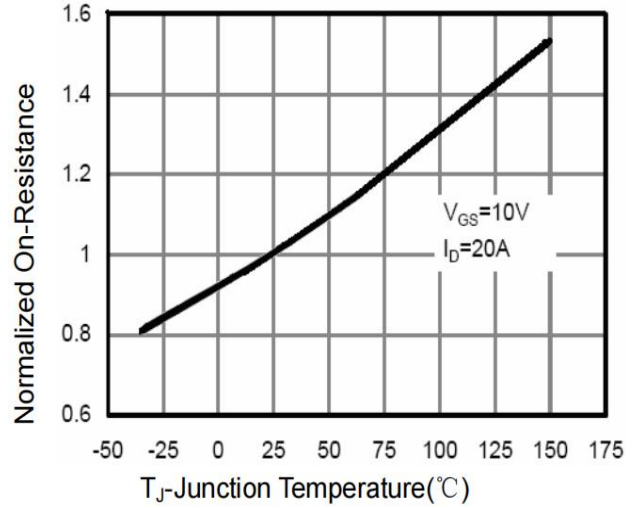
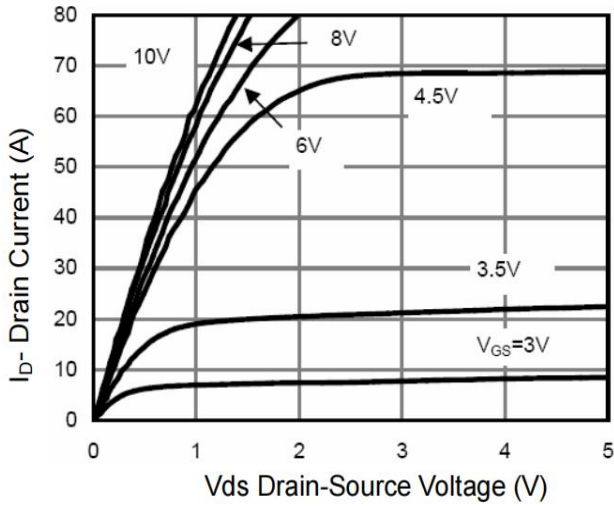
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle



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### RATINGS AND CHARACTERISTIC CURVES

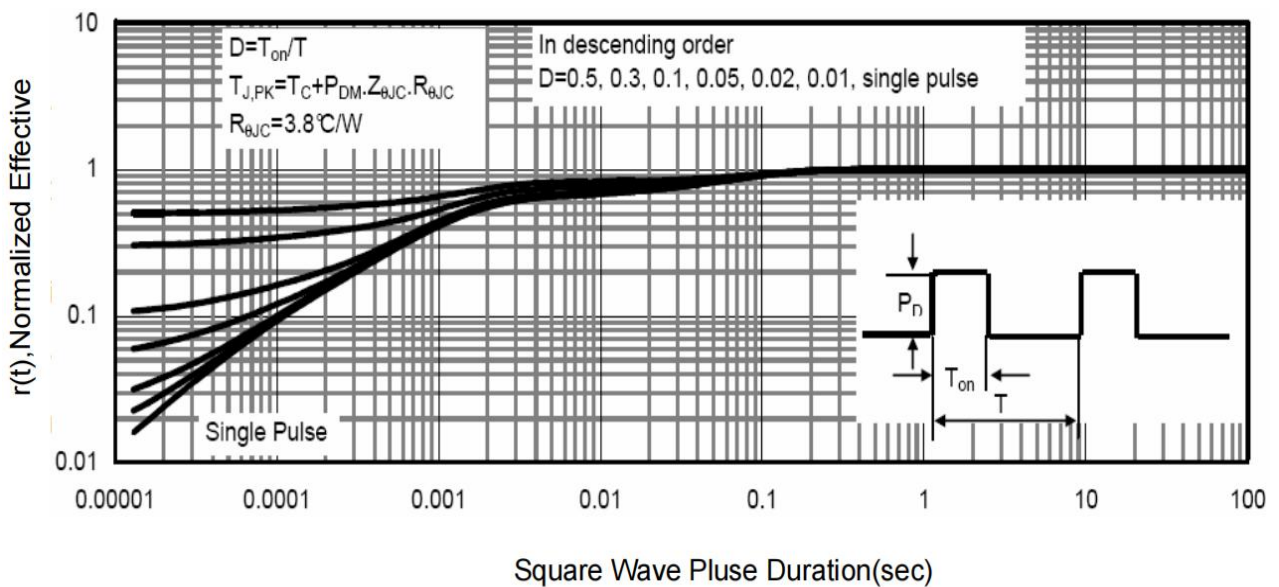
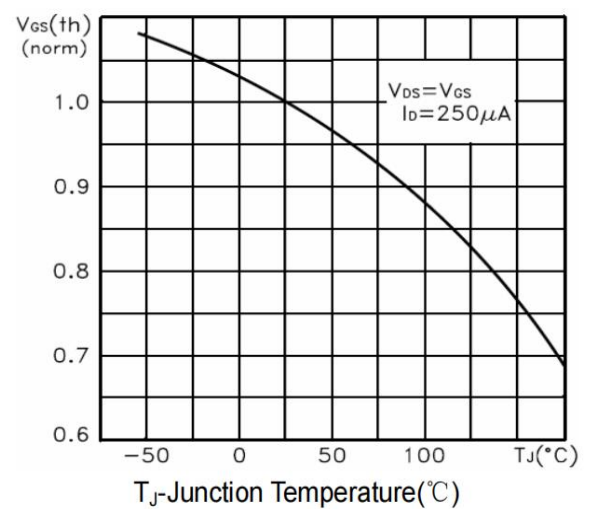
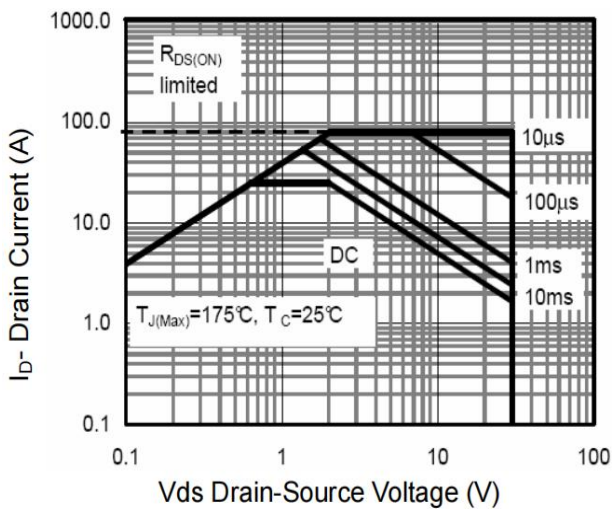
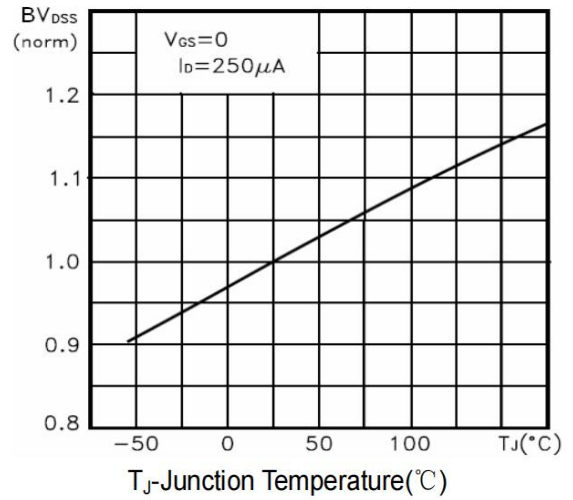
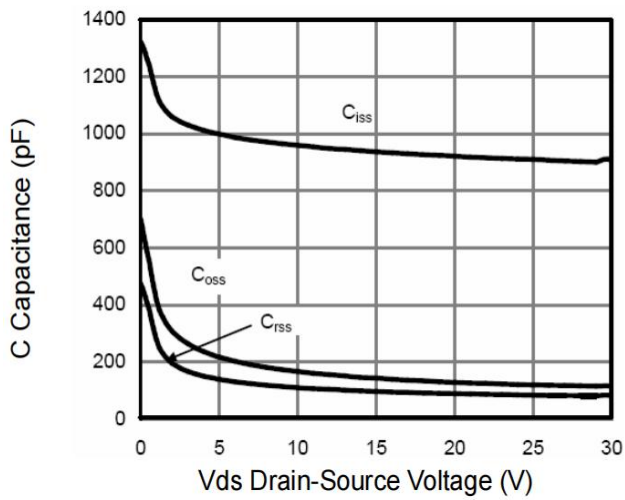




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### RATINGS AND CHARACTERISTIC CURVES



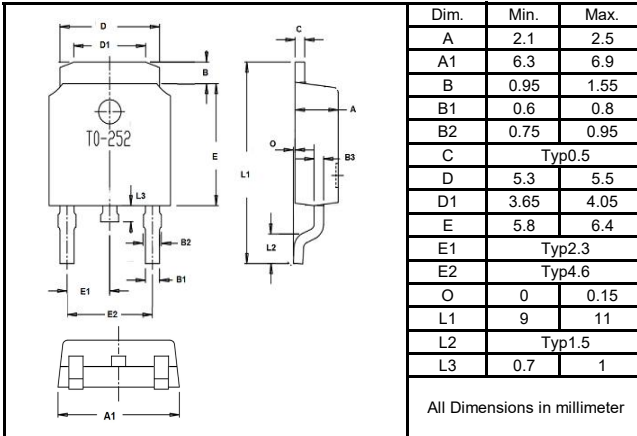


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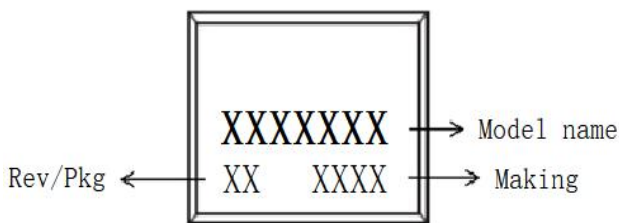
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### Package Outline Dimensions millimeters

TO-252



### 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

### 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.