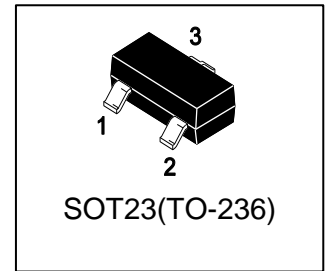


# LN3421LT1G

## 30V N-Channel Enhancement Mode MOSFET

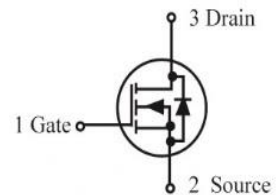
### 1. FEATURES

- $V_{DS} = 30V$ .
- $R_{DS(ON)} \leq 38m\Omega @ V_{GS} = 10V$ .  
 $R_{DS(ON)} \leq 47m\Omega @ V_{GS} = 4.5V$ .
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.



### 2. APPLICATION

- Power Routing
- Load Switch
- Motor Drives



### 3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LN3421LT1G	E21	3000/Tape&Reel

### 4. MAXIMUM RATINGS( $T_a = 25^\circ C$ )

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-to-Source Voltage – Continuous	$V_{GS}$	$\pm 20$	V
Drain Current			A
– Continuous $T_a = 25^\circ C$	$I_D$	4.5	
– Pulsed(Note 1)	$I_{DM}$	18	

### 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Power Dissipation	PD	1.25	W
Thermal Resistance, Junction-to-Ambient(Note 2)	$R_{\theta JA}$	100	$^\circ C/W$
Junction and Storage temperature	$T_J, T_{stg}$	$-55 \sim +150$	$^\circ C$

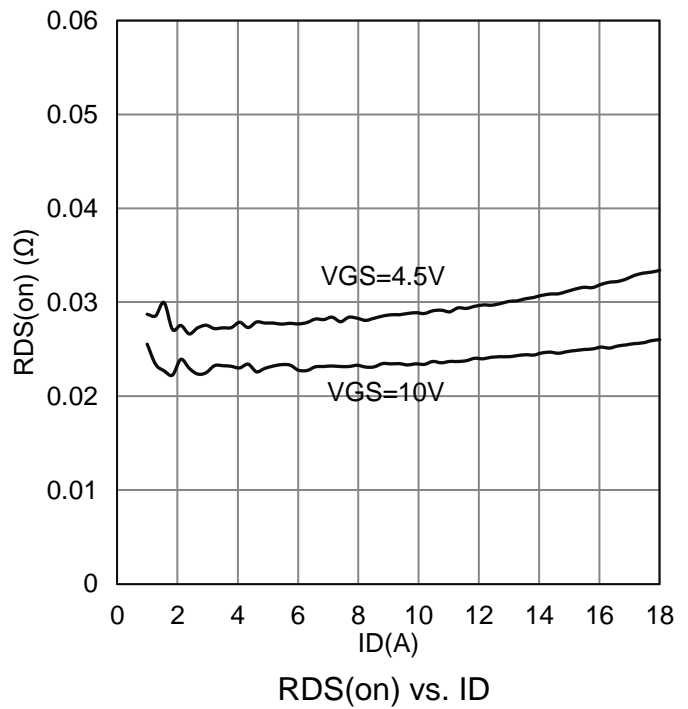
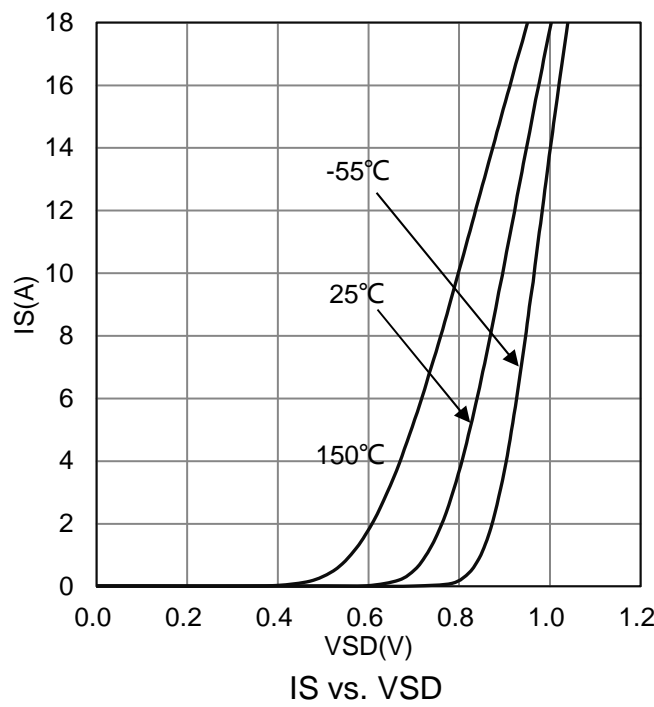
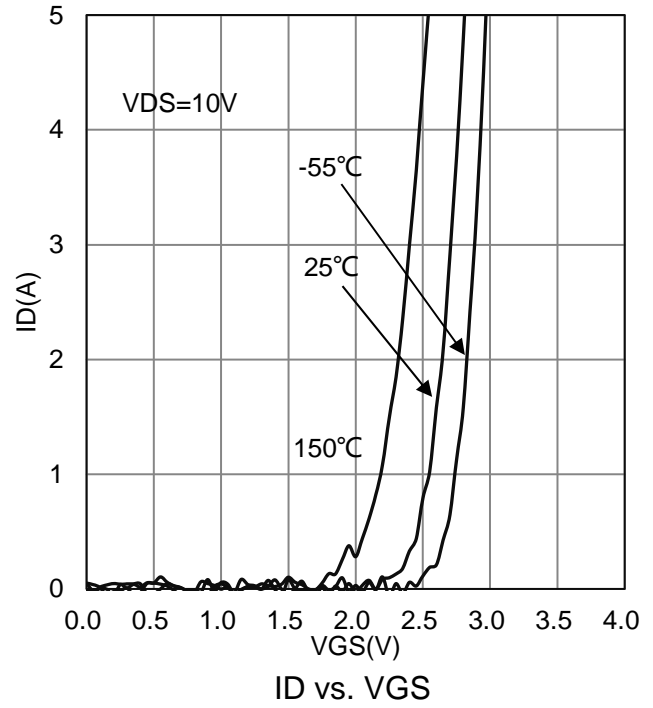
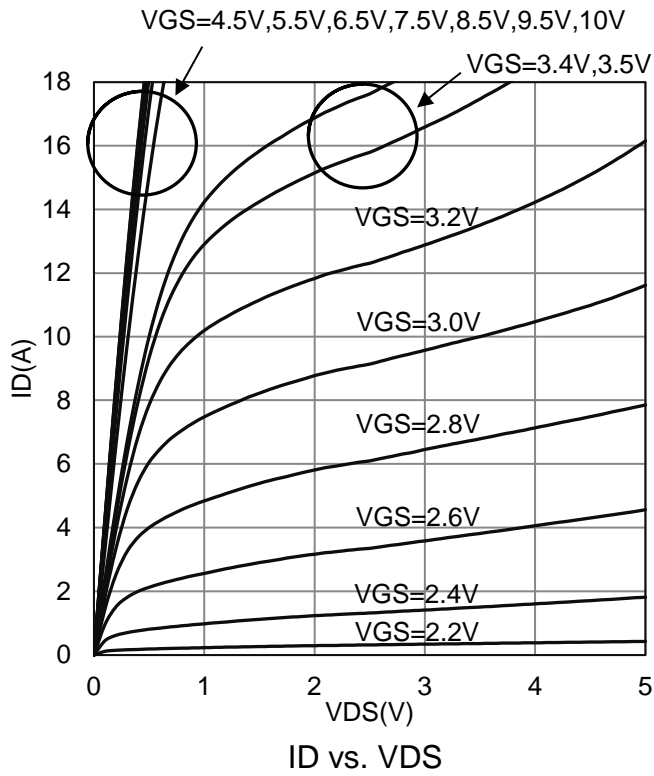
1. Repetitive Rating: Pulse width limited by the Maximum junction temperature.
2. 1-in<sup>2</sup> 2oz Cu PCB board.

**6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)**

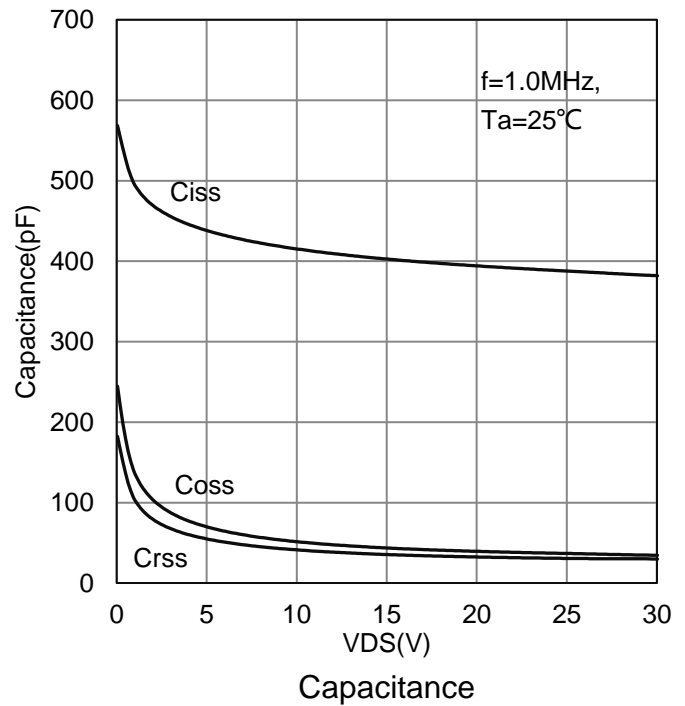
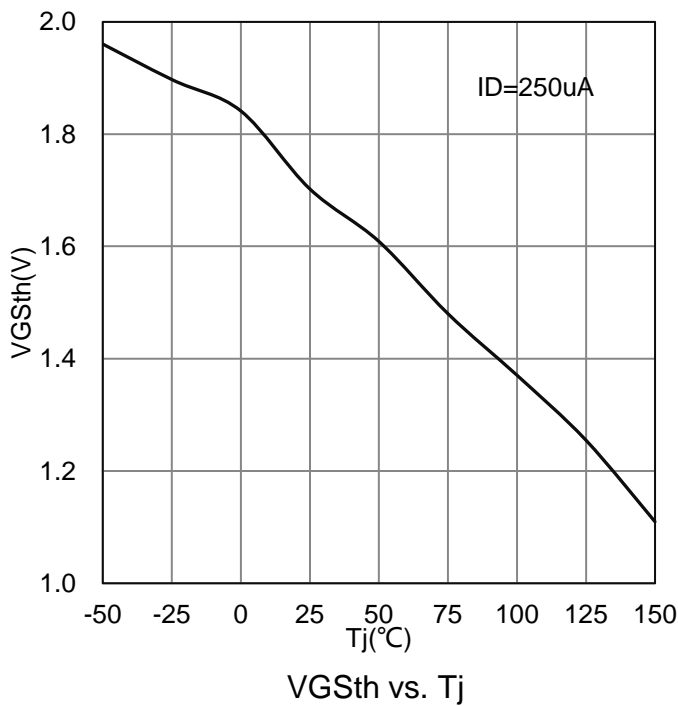
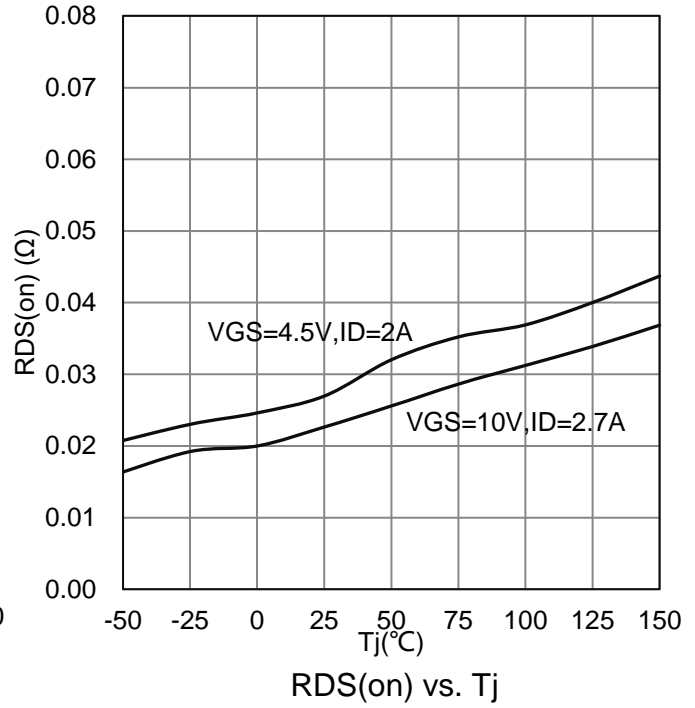
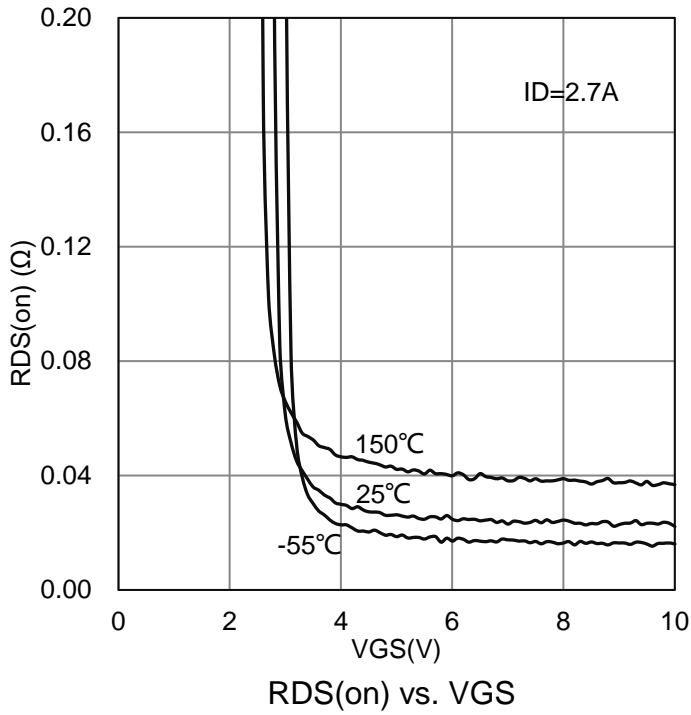
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
<b>STATIC</b>						
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 μA)	V(BR)DSS	30	-	-	V	
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μA)	VGS(th)	1.1	1.5	1.9	V	
Gate-Body Leakage (VDS = 0 V, VGS = ± 20 V)	IGSS	-	-	±100	nA	
Zero Gate Voltage Drain Current (VDS = 30 V, VGS = 0 V)	IDSS	-	-	1	μA	
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 2.7 A) (VGS = 4.5 V, ID = 2 A)	RDS(on)	-	27 35	38 47	mΩ	
Diode Forward Voltage (VGS = 0 V, IS = 1 A)	VSD	-	-	1.3	V	
<b>DYNAMIC</b>						
Total Gate Charge	(VDS = 15 V, VGS = 4.5 V, ID = 2.7 A)	Qg	-	4	-	nC
Gate-Source Charge		Qgs	-	1	-	
Gate-Drain Charge		Qgd	-	1.7	-	
Turn-On Delay Time	(VDD = 15 V, RL = 15 Ω, ID = 1 A, VGEN = 10 V, RG = 6.2 Ω)	td(on)	-	5	-	ns
Rise Time		tr	-	4.2	-	
Turn-Off Delay Time		td(off)	-	20	-	
Fall Time		tf	-	3.6	-	
Input Capacitance	(VDS = 15 V, VGS = 0V, f = 1 MHz)	Ciss	-	405	-	pF
Output Capacitance		Coss	-	44	-	
Reverse Transfer Capacitance		Crss	-	36	-	

3. Pulse test: PW ≤ 300us duty cycle ≤ 2%.

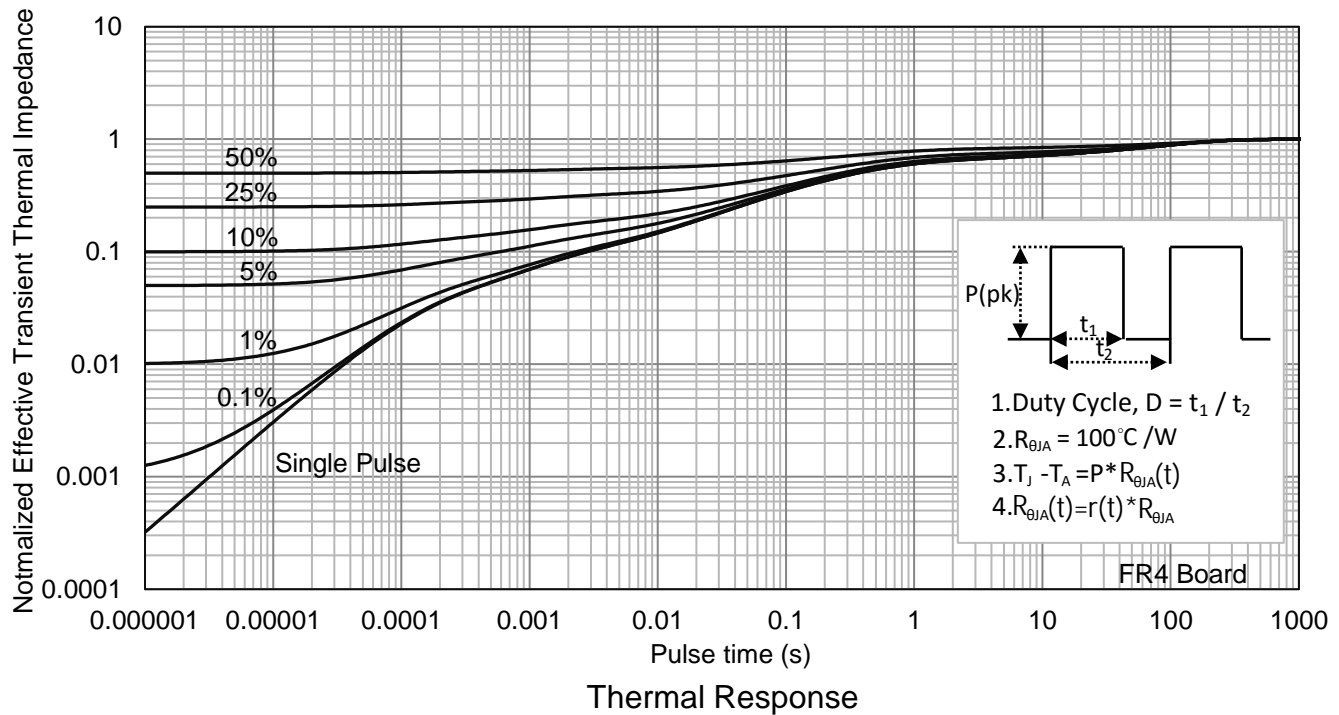
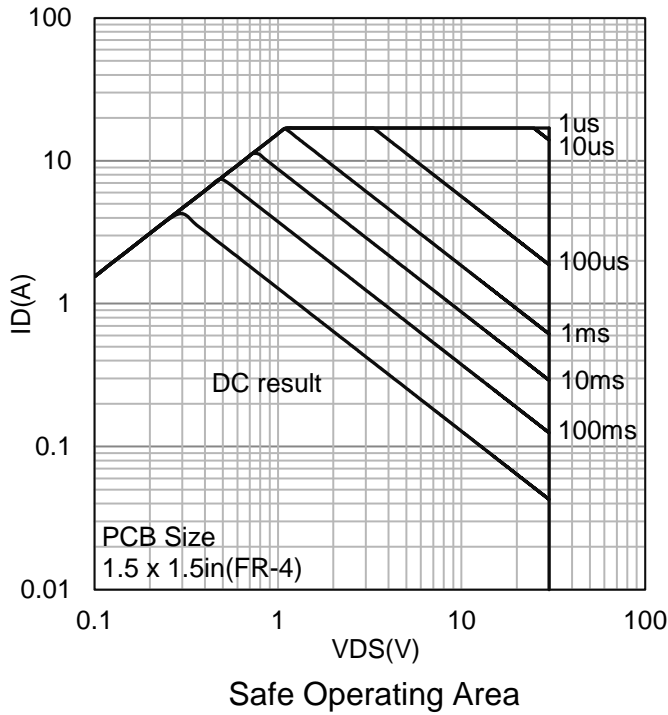
### 7. ELECTRICAL CHARACTERISTICS CURVES



7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



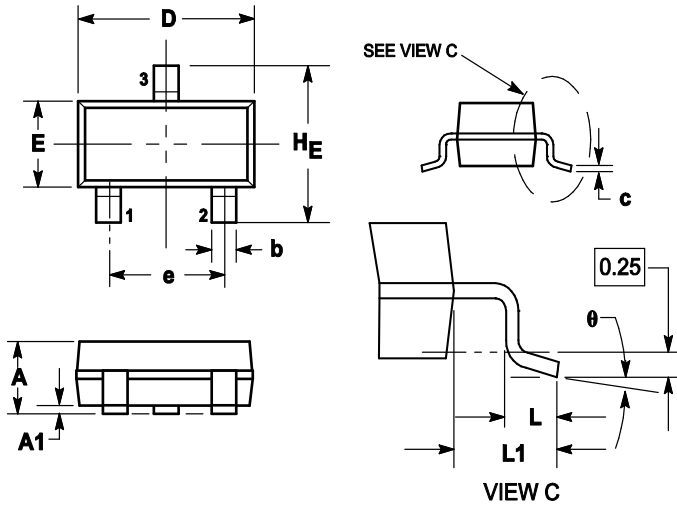
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



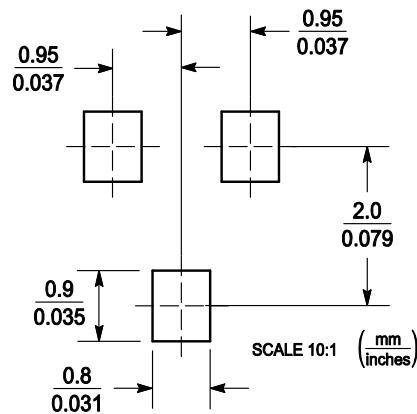
**8. OUTLINE AND DIMENSIONS**

Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.4	2.64	0.083	0.094	0.104
theta	0°	---	10°	0°	---	10°

**9. SOLDERING FOOTPRINT**


## **DISCLAIMER**

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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