

LN239N3T5G

30V, Single N-channel Trench MOSFET

1. FEATURES

- Fast switching
- Low RDS(ON)
- Trench MOSFET technology
- This is a Pb Free Device
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- Low Side Load Switch
- Level Shift Circuits
- Gate to Source ESD protected, HBM >2KV
- Portable Applications i.e. DSC, PDA, Cell Phone, etc.

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LN239N3T5G	N4	10000/Tape&Reel

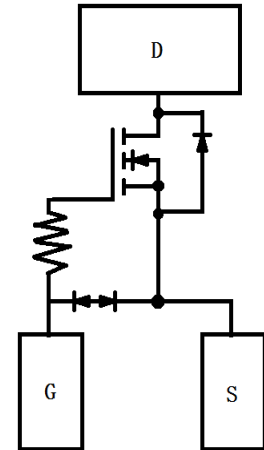
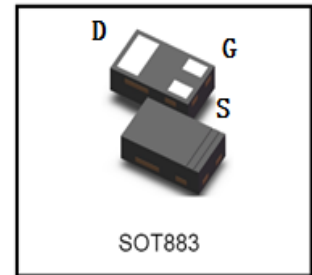
4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain-to-Source Voltage	VDSS	30	V
Gate-to-Source Voltage	VGS	±8	V
Drain Current (Note 1)	ID	1	A
Steady State (TA = 25°C) (TA = 100°C)		0.8	
Power Dissipation (Note 1)	PD	225	mW
Steady State			
Pulsed Drain Current (tp = 10 μs)	IDM	3.7	A
Operating Junction and Storage Temperature Range	TJ , TSTG	-55~+150	°C

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Junction-to-Ambient - Steady State (Note 1)	RθJA	390	°C/W

Note 1: Surface-mounted on FR4 board using 1 in sq pad size (Cu area = 1.127 in sq [1 oz] including traces)

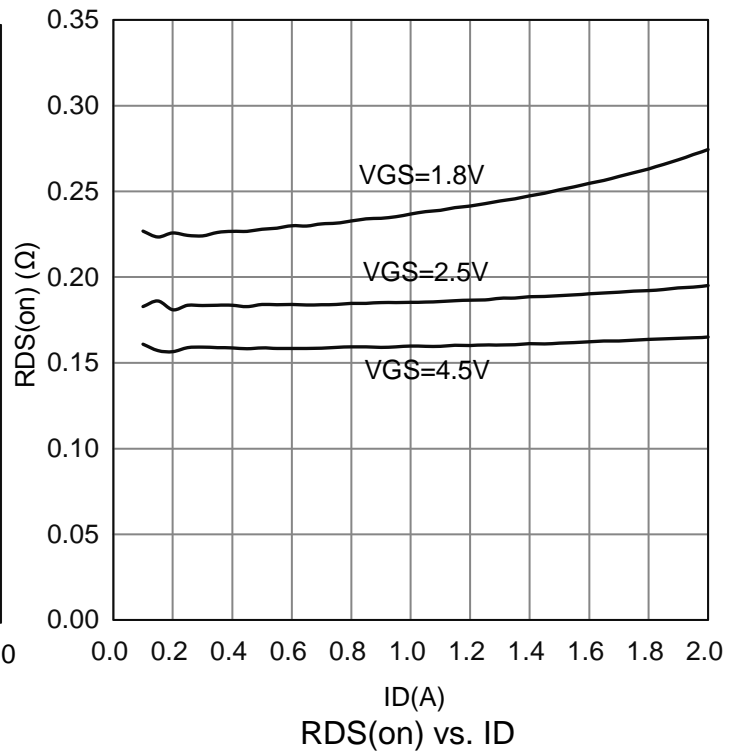
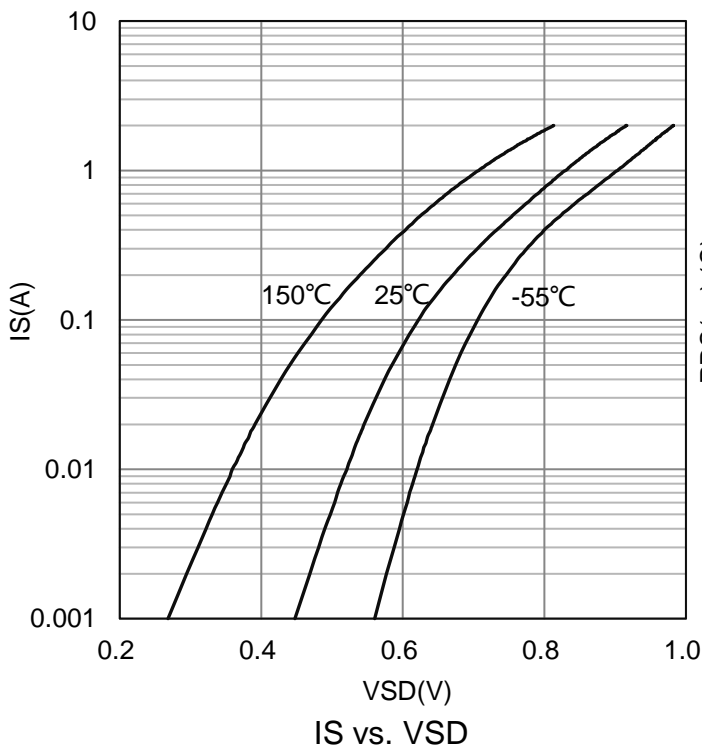
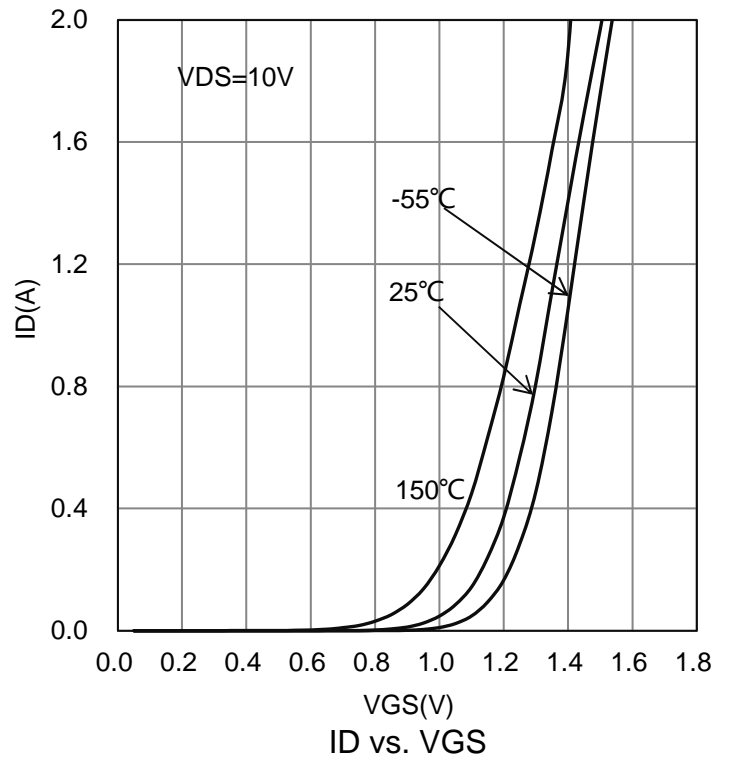
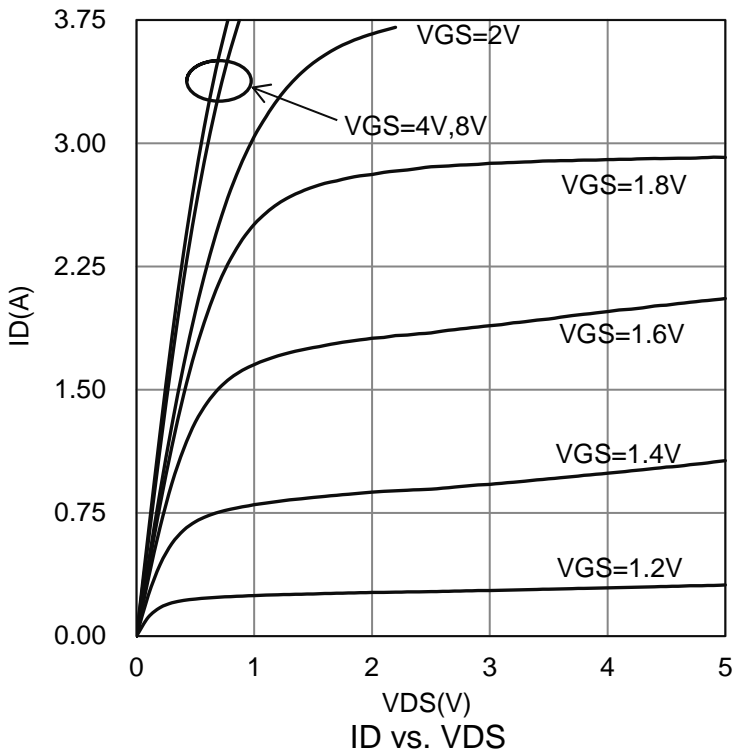


6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

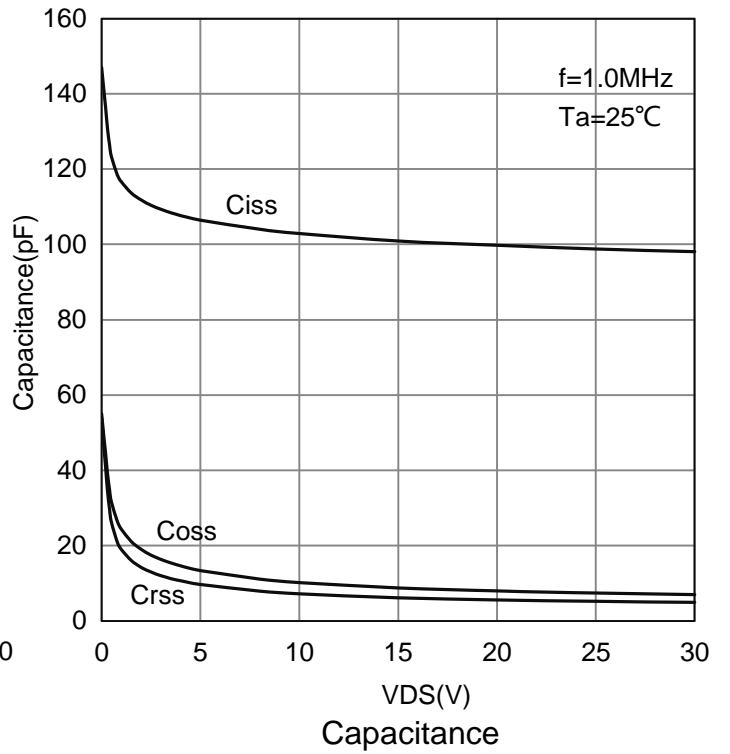
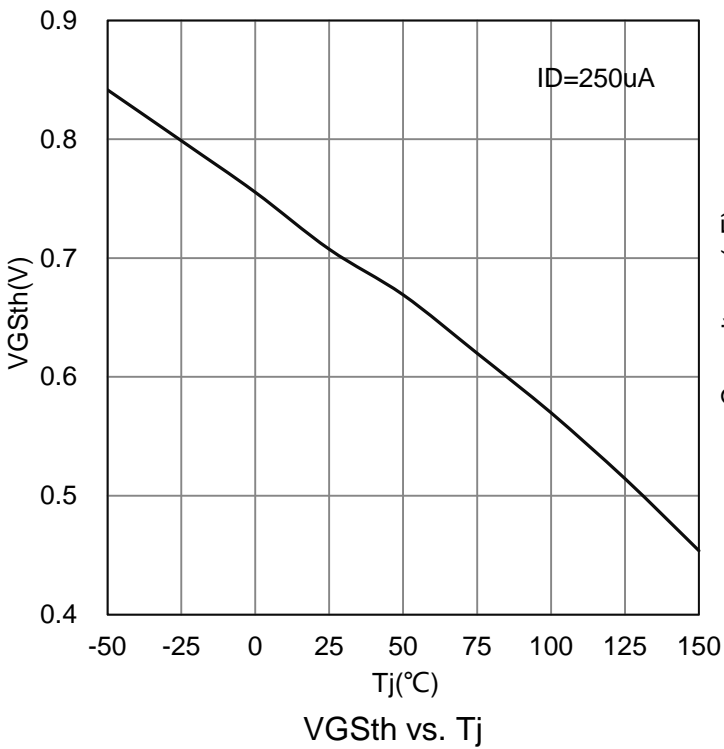
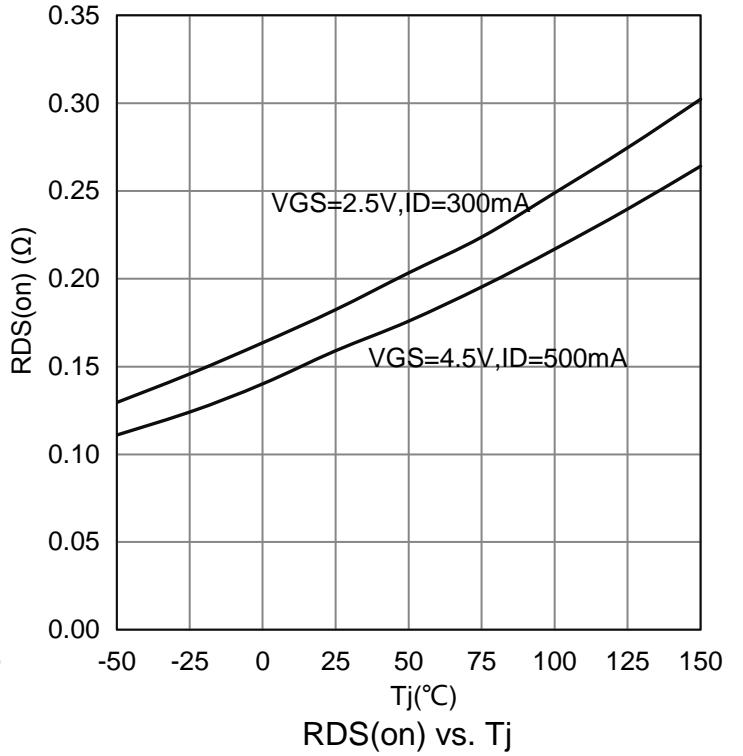
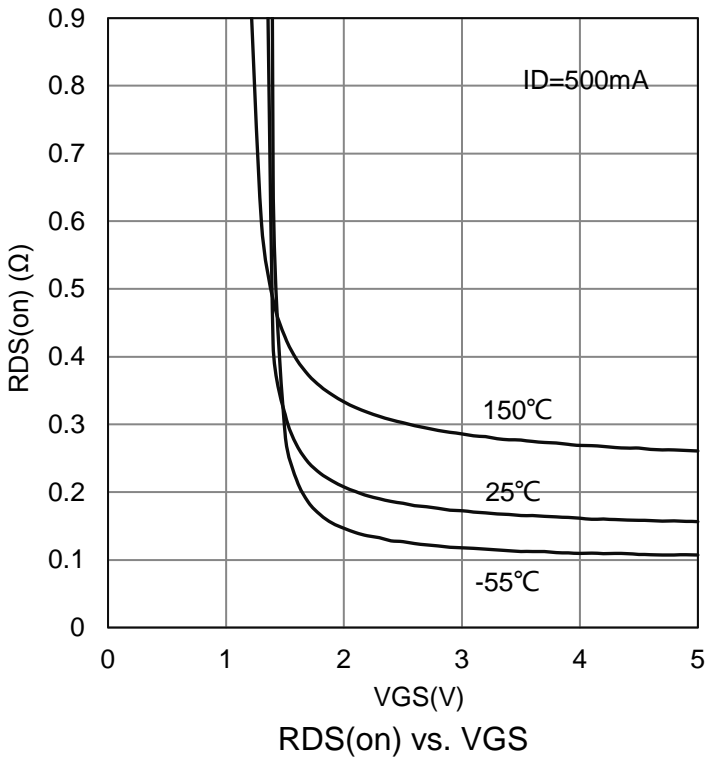
Characteristic	Symbol	Min.	Typ.	Max.	Unit
STATIC CHARACTERISTICS					
Drain-Source Breakdown Voltage (VGS =0V, ID =250μA)	V(BR)DSS	30	-	-	V
Gate Threshold Voltage (VDS =VGS , ID =250μA)	VGS(th)	0.45	0.65	0.9	
Gate-Body Leakage Current (VDS =0V, VGS =± 8V)	IGSS	-	-	±10	μA
Zero Gate Voltage Drain Current (VDS =30V, VGS =0V)	IDSS	-	-	1	
Drain-Source On-Resistance (VGS =4.5V, ID = 500mA) (VGS =2.5V, ID = 300mA) (VGS =1.8V, ID = 100mA)	RDS(ON)	-	0.2	0.30	Ω
		-	0.3	0.40	
		-	0.4	0.50	
Diode Forward Voltage (IS =300mA, VGS =0V)	VSD	-	-	1.2	V
DYNAMIC PARAMETERS					
Total Gate Charge	(VDS =15V, VGS =4.5V, ID =1.0A)	Qg	-	1.3	nC
Gate-Source Charge		Qgs	-	0.16	
Gate-Drain Charge		Qgd	-	0.44	
Input Capacitance	(VDS =25V, VGS =0V, f=1MHz)	Ciss	-	99	pF
Output Capacitance		Coss	-	7.4	
Reverse Transfer Capacitance		Crss	-	5.2	
Turn-On Delay Time	(VDS =15V, VGS =10V, ID =1A, RG=6Ω)	td(on)	-	20.5	ns
Rise Time		tr	-	39.7	
Turn-Off Delay Time		td(off)	-	689	
Fall Time		tf	-	191	
Gate-Resistance (VGS = 0V, VDS=0V,f=1MHz)	Rg	-	2129	-	Ω

Note 2: Pulse test; pulse width ≤ 300μs, duty cycle ≤ 2%

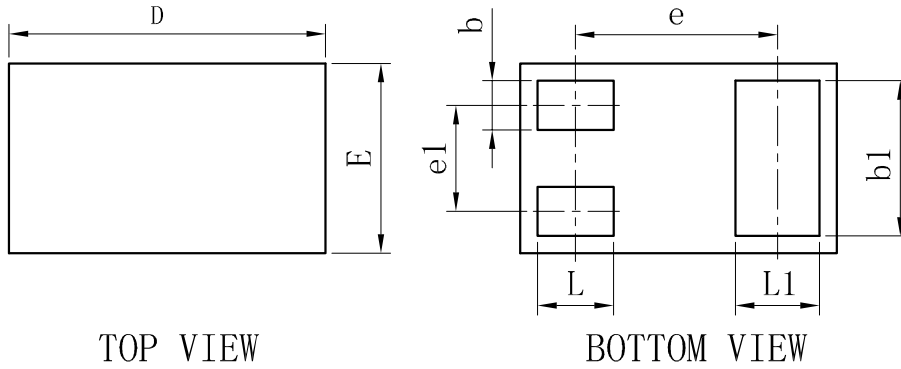
7. ELECTRICAL CHARACTERISTICS CURVES



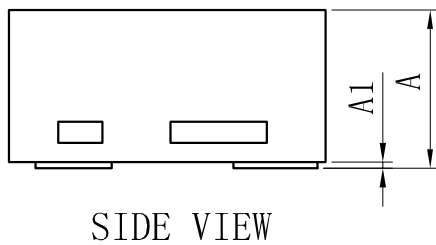
7. ELECTRICAL CHARACTERISTICS CURVES (Con.)



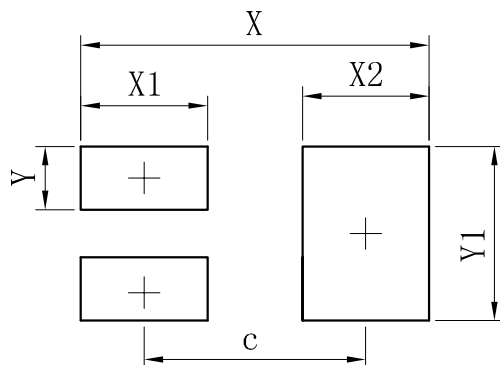
8. OUTLINE AND DIMENSIONS



SOT883			
Dim	Min	Typ	Max
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	-	0.64	-
e1	-	0.34	-
L	0.19	0.24	0.29
L1	0.22	0.27	0.32
b	0.10	0.15	0.20
b1	0.44	0.49	0.54
A	0.43	0.48	0.53
A1	0	-	0.05
All Dimensions in mm			



9. SOLDERING FOOTPRINT



Dimensions	(mm)
c	0.70
X	1.10
X1	0.40
X2	0.40
Y	0.20
Y1	0.55

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