

LNTA7002NT1G

S-LNTA7002NT1G

Small Signal MOSFET

1. FEATURES

- Low Gate Charge for Fast Switching
- Small 1.6 X 1.6 mm Footprint
- ESD Protected Gate
- ESD Protected:2000V
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

2. APPLICATIONS

- Power Management Load Switch
- Level Shift
- Portable Applications such as Cell Phones, Media Players, Digital Cameras, PDA's, Video Games, Hand Held Computers, etc.

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
LNTA7002NT1G	T6	3000/Tape&Reel
LNTA7002NT3G	T6	10000/Tape&Reel

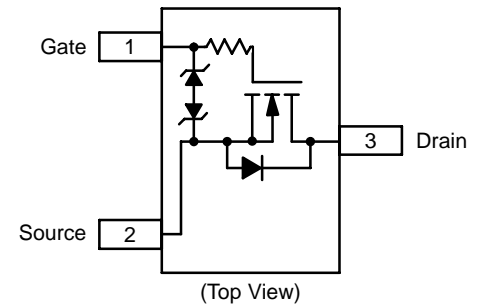
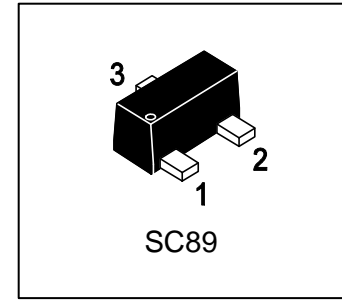
4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain-to-Source Voltage	VDSS	30	V
Gate-to-Source Voltage	VGS	±10	V
Continuous Drain Current (Note 1)	ID	154	mA
Power Dissipation (Note 1)	PD	300	mW
Pulsed Drain Current (tp ≤ 10 μs)	IDM	618	mA
Operating Junction and Storage Temperature	Tj, Tstg	-55~+150	°C
Continuous Source Current (Body Diode)	ISD	154	mA
Lead Temperature for Soldering Purposes (1/8" from case for 10 s)	TL	260	°C

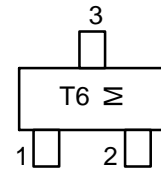
5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Junction-to-Ambient – Steady State (Note 1)	RθJA	416	°C/W

1. Surface-mounted on FR4 board using 1 in sq pad size



MARKING DIAGRAM



T6 = Specific Device Code
M = Month Code

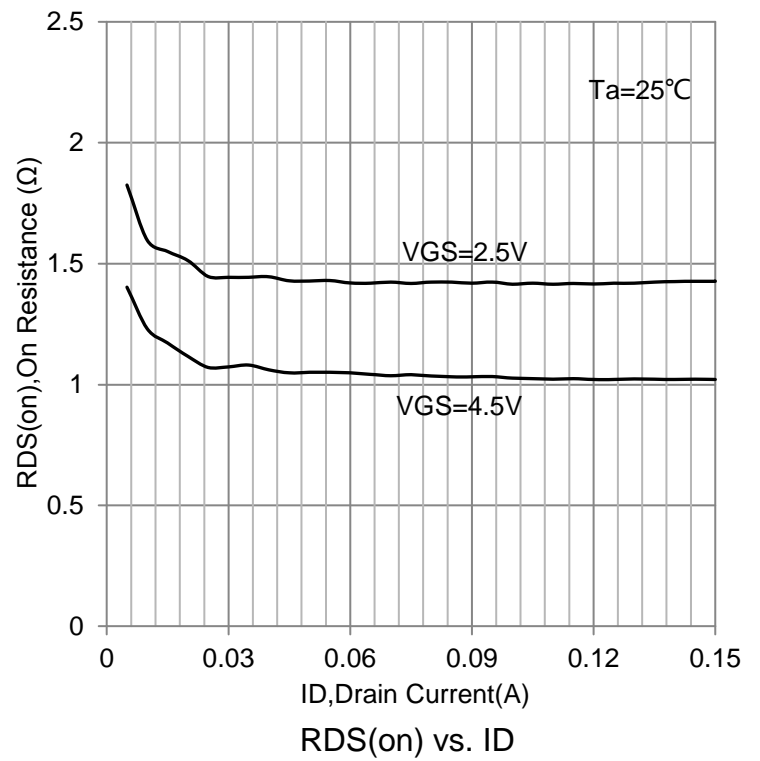
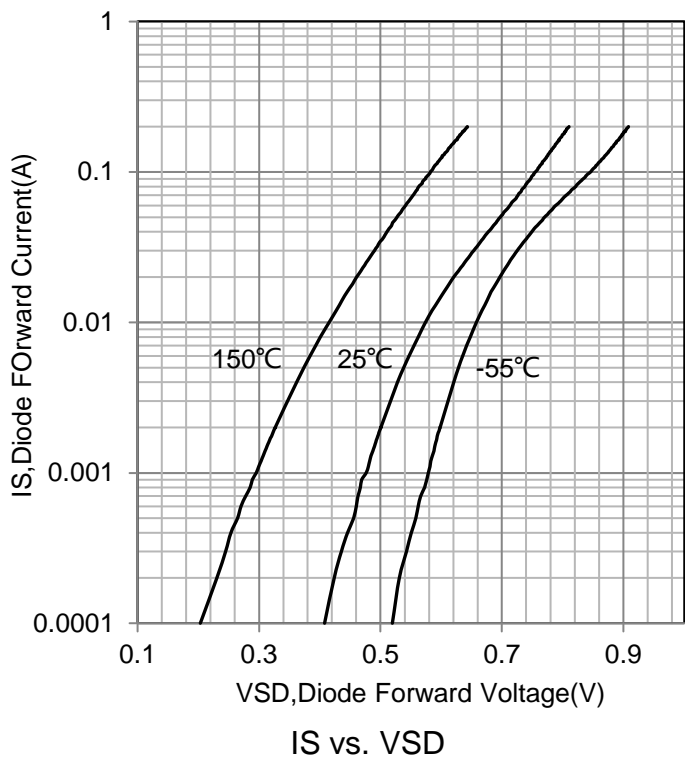
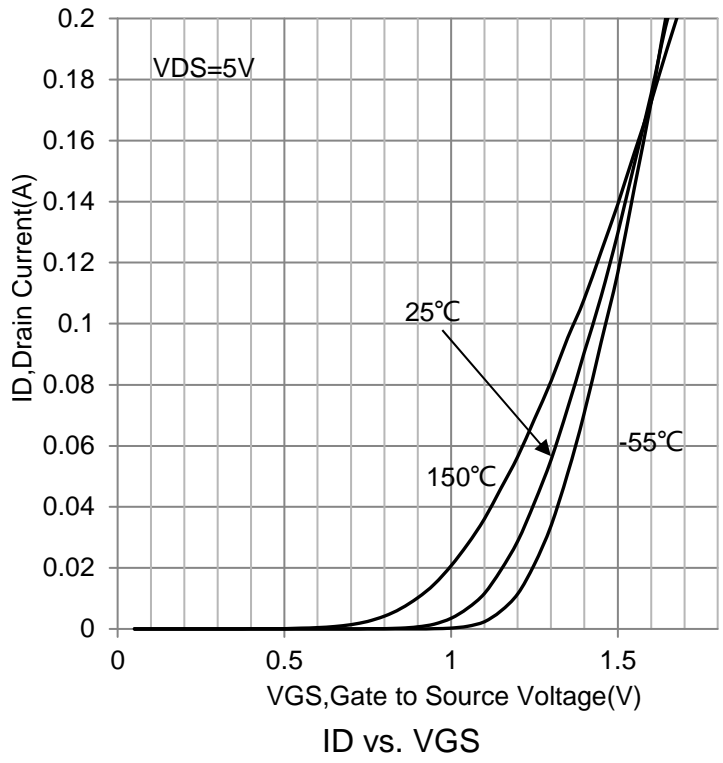
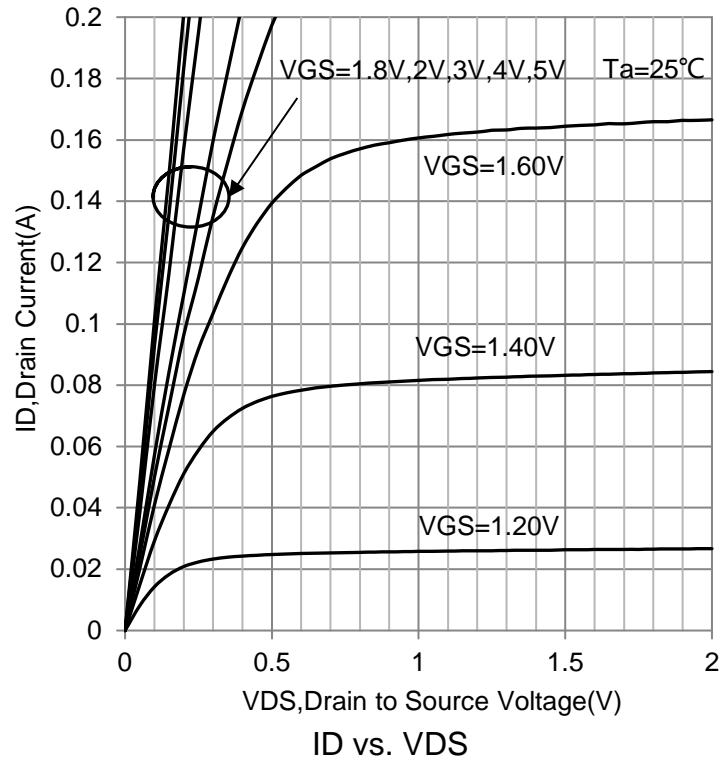
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	
OFF CHARACTERISTICS						
Drain–Source Breakdown Voltage (VGS = 0, ID = 100μA)	VBRDSS	30	-	-	V	
Zero Gate Voltage Drain Current (VGS = 0, VDS = 30 V) (VGS = 0, VDS = 20 V, Tj = 85 °C)	IDSS	-	-	1	μA	
Gate-to–Source Leakage Current (VDS = 0 V, VGS = ±10 V) (VDS = 0 V, VGS = ±5 V) (VDS = 0 V, VGS = ±5 V, Tj = 85 °C)	IGSS	-	-	±25 ±1 ±1	μA	
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage (VDS = VGS, ID = 100μA)	VGS(th)	0.5	1	1.5	V	
Drain–to–Source On Resistance (VGS = 4.5 V, ID = 154 mA) (VGS = 2.5 V, ID = 154 mA)	RDS(on)	-	1.4 2.3	7 7.5	Ohm	
CAPACITANCES						
Input Capacitance (VDS = 5.0 V, f = 1 MHz, VGS = 0 V)	Ciss	-	32	-	pF	
Output Capacitance (VDS = 5.0 V, f = 1 MHz, VGS = 0 V)	Coss	-	5.8	-	pF	
Reverse Transfer Capacitance (VDS = 5.0 V, f = 1 MHz, VGS = 0 V)	Crss	-	4.0	-	pF	
SWITCHING CHARACTERISTICS (Note 3)						
Turn–On Delay Time	VGS = 4.5 V, VDS = 5.0 V, ID = 75 mA, RG = 10 Ohm	td(ON)	-	13	-	ns
Rise Time		tr	-	15	-	
Turn–Off Delay Time		td(OFF)	-	98	-	
Fall Time		tf	-	60	-	
Drain–Source Diode Characteristics						
Diode Forward Voltage (VGS = 0 V, IS = 154 mA)	VSD	-	0.77	0.9	V	

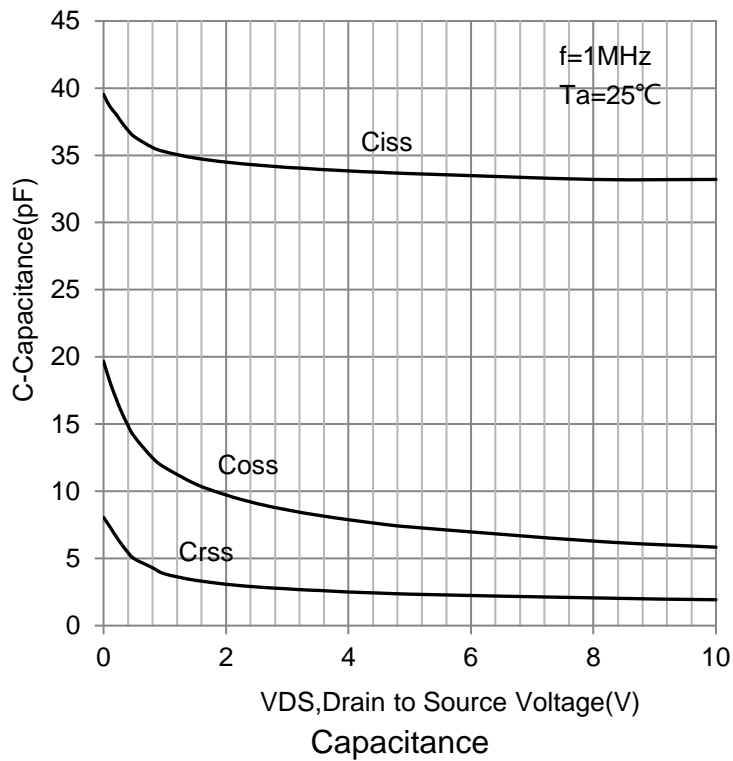
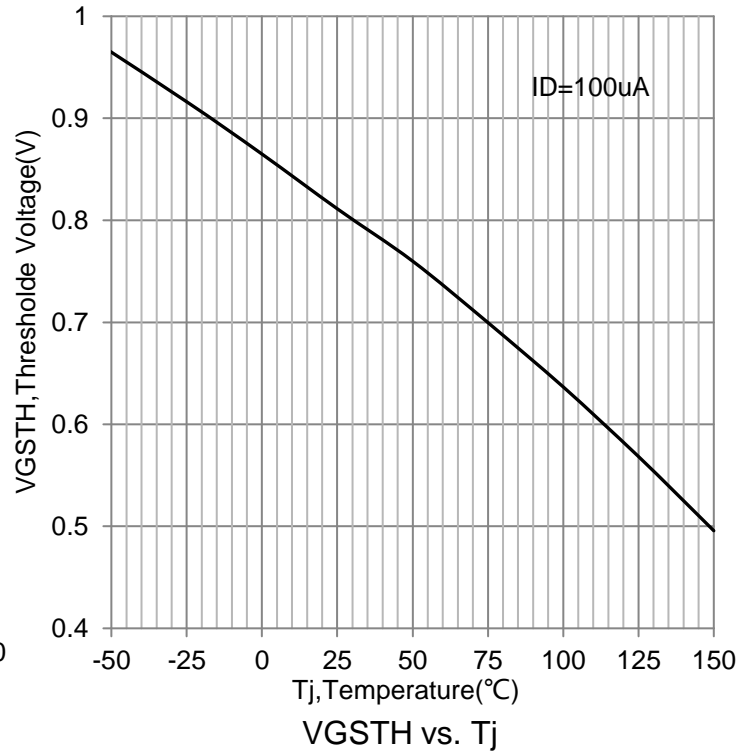
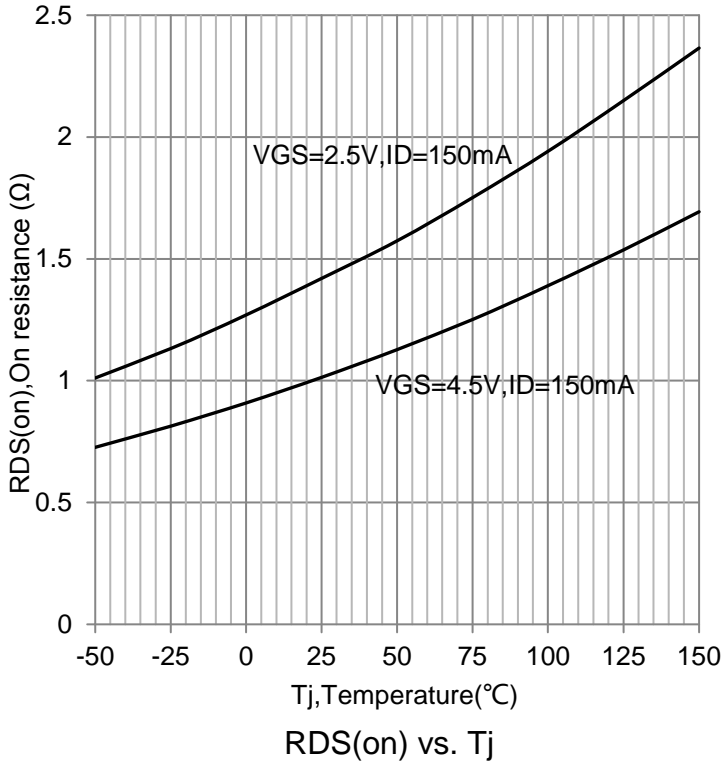
2. Pulse Test: pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.

3. Switching characteristics are independent of operating junction temperatures.

7. ELECTRICAL CHARACTERISTICS CURVES



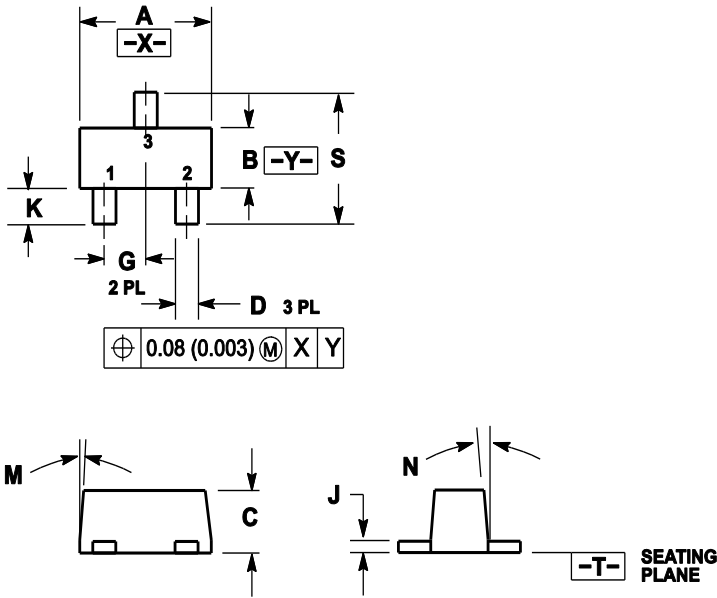
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



8. OUTLINE AND DIMENSIONS

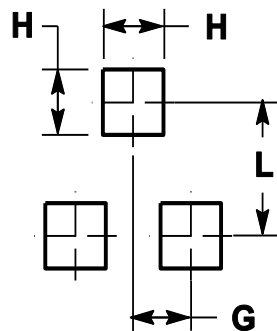
Notes:

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 A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.50	1.60	1.70	0.059	0.063	0.067
B	0.75	0.85	0.95	0.030	0.034	0.040
C	0.60	0.70	0.80	0.024	0.028	0.031
D	0.23	0.28	0.33	0.009	0.011	0.013
G	0.50BSC			0.020BSC		
H	0.53REF			0.021REF		
J	0.10	0.15	0.20	0.004	0.006	0.008
K	0.30	0.40	0.50	0.012	0.016	0.02
L	1.10REF			0.043REF		
M	---	---	10°	---	---	10°
N	---	---	10°	---	---	10°
S	1.50	1.60	1.70	0.059	0.063	0.067

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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