

LN2316ELT1G

N-Channel 20V (D-S) MOSFET , ESD Protection

1. FEATURES

- $R_{DS(ON)} = 25m\Omega$ @ $V_{GS} = 4.5V$
- $R_{DS(ON)} = 29m\Omega$ @ $V_{GS} = 2.5V$
- $R_{DS(ON)} = 42m\Omega$ @ $V_{GS} = 1.8V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- Exceptional on-resistance and maximum DC current capability.
- ESD Protected($HBM \geq 2kV$).

2. APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

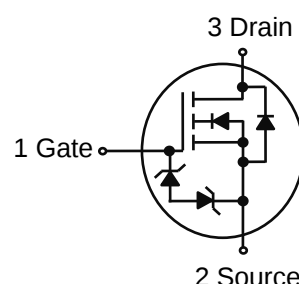
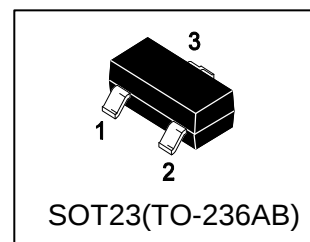
3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LN2316ELT1G	N16	3000/Tape&Reel

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

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-to-Source Voltage – Continuous		V_{GS}	± 8	V
Continuous Drain Current	$T_A = 25^\circ C$	ID	6.4	A
	$T_A = 70^\circ C$		5.1	
Pulsed Drain Current		IDM	26	A
Maximum Power Dissipation	$T_A = 25^\circ C$	PD	1.1	W
	$T_A = 70^\circ C$		0.7	
Operating Junction Temperature		TJ	-55~+150	$^\circ C$
Thermal Resistance-Junction to Ambient(Note 1)		R θ JA	110	$^\circ C/W$
Thermal Resistance-Junction to Case		R θ JC	80	$^\circ C/W$

1. The device mounted on 1in² FR4 board with 2 oz copper

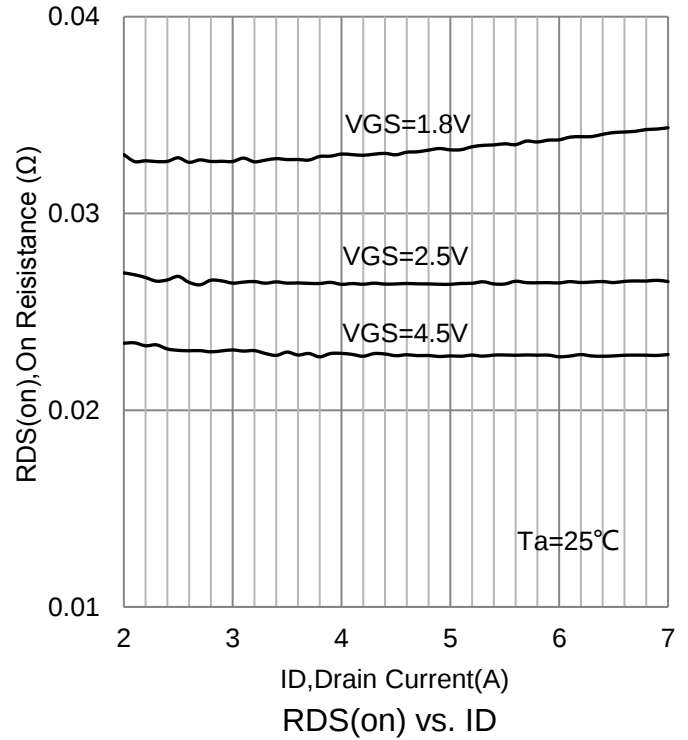
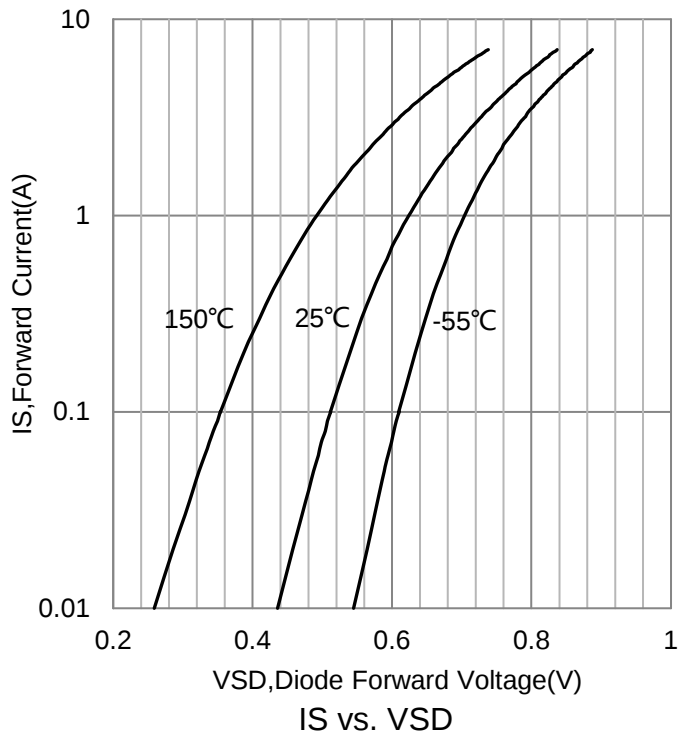
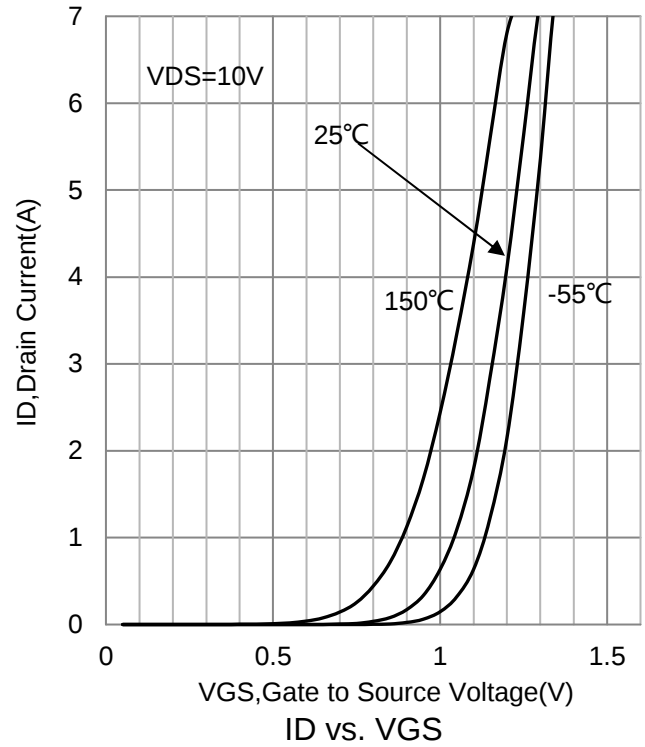
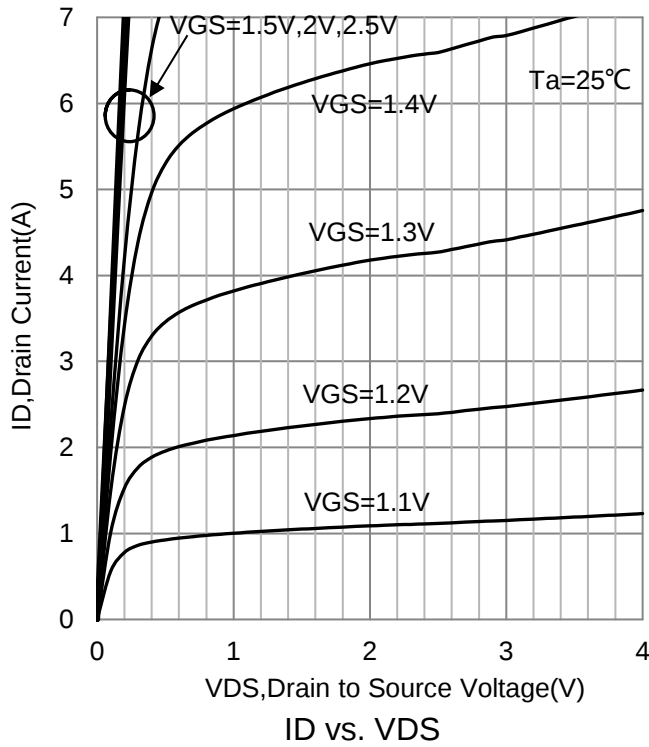


5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

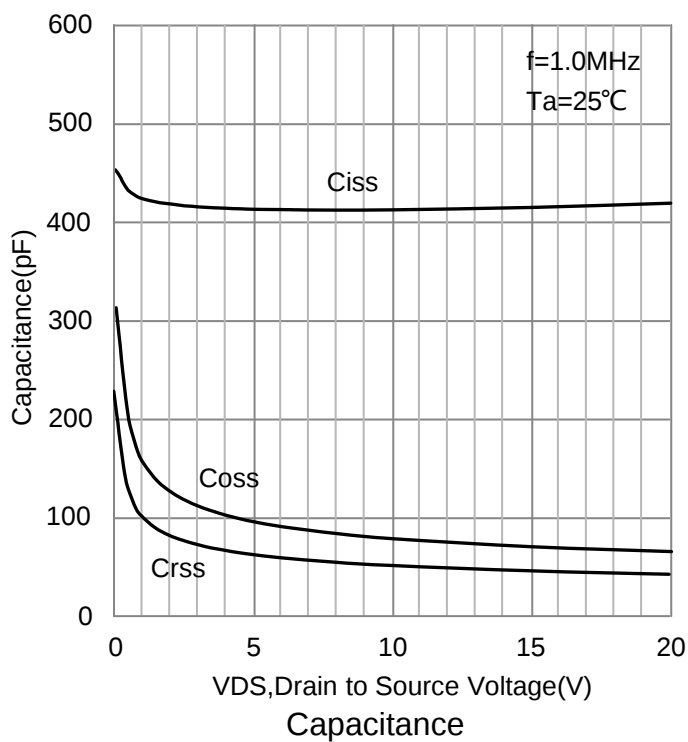
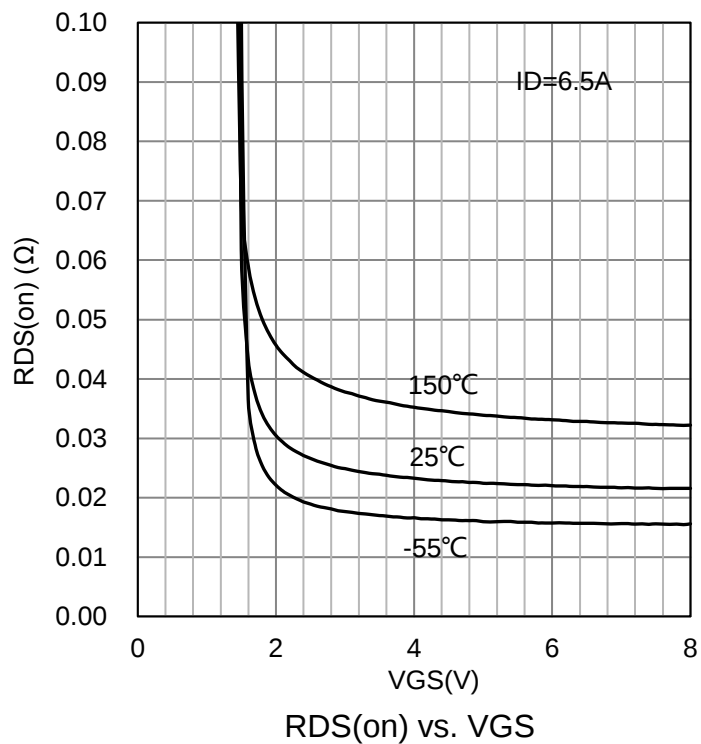
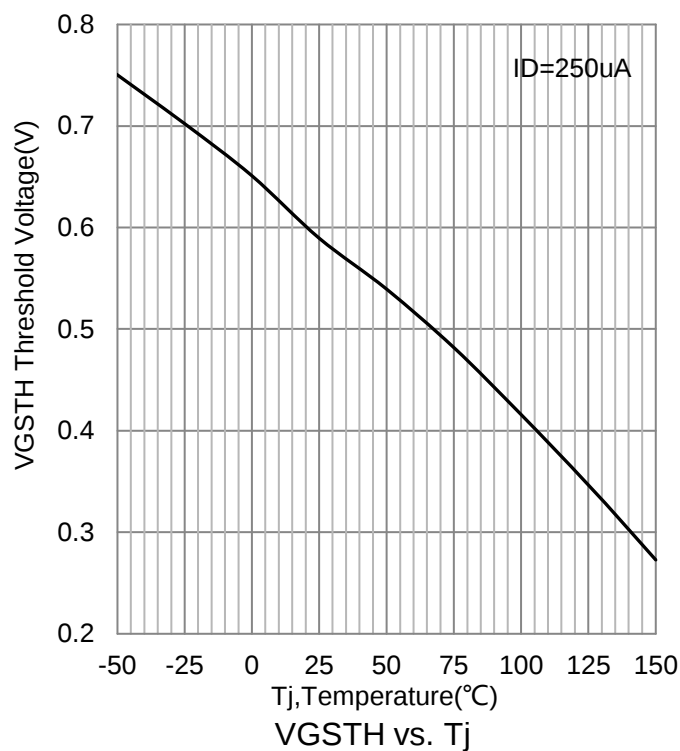
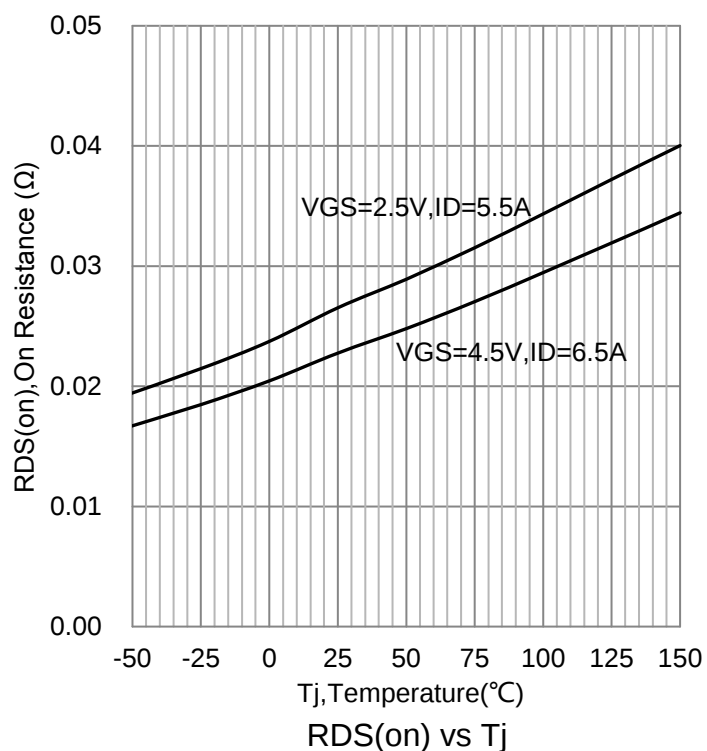
Characteristic	Symbol	Min.	Typ.	Max.	Unit
STATIC					
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 μA)	V(BR)DSS	20	-	-	V
Gate Threshold Voltage (VDS = VGS , ID = 250 μA)	VGS(th)	0.4	-	1	
Gate Leakage Current (VDS = 0 V, VGS = ±4.5 V) (VDS = 0 V, VGS = ±8V)	IGSS	- -	- -	±1 ±10	μA
Zero Gate Voltage Drain Current (VDS = 20 V, VGS = 0 V)	IDSS	-	-	1	
Drain-Source On-Resistance(Note 2) (VGS = 4.5 V, ID = 6.5 A) (VGS = 2.5 V, ID = 5.5 A) (VGS = 1.8 V, ID = 5 A)	RDS(ON)	- - -	17 24 32	25 29 42	mΩ
Diode Forward Voltage (IS = 1 A, VGS = 0 V)	VSD	-	0.6	1	
DYNAMIC					
Total Gate Charge	VDS = 10 V, VGS = 4.5 V, ID = 6.5 A	Qg	-	10	nC
Gate-Source Charge		Qgs	-	0.9	
Gate-Drain Charge		Qgd	-	3	
Input Capacitance	VDS = 10 V, VGS = 0 V,f= 1MHz	Ciss	-	150	pF
Output Capacitance		Coss	-	95	
Reverse Transfer Capacitance		Crss	-	25	
Turn-On Delay Time	VDS = 10 V, RL = 1.5 Ω,VGS = 5 V, RGEN = 3 Ω	td(on)	-	250	ns
Turn-On Rise Time		tr	-	420	
Turn-Off Delay Time		td(off)	-	3950	
Turn-Off Fall Time		tf	-	3700	

2.Pulse test; pulse width $\leq$ 300us, duty cycle $\leq$ 2%

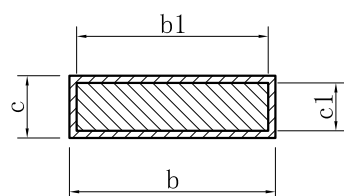
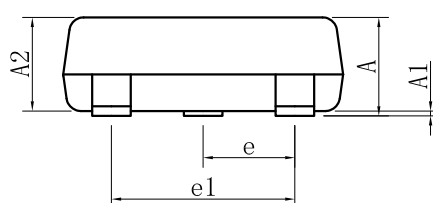
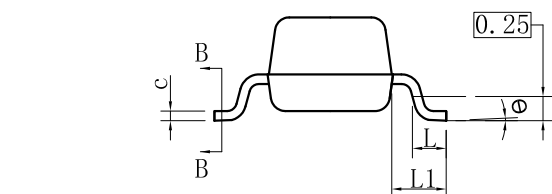
6. ELECTRICAL CHARACTERISTICS CURVES



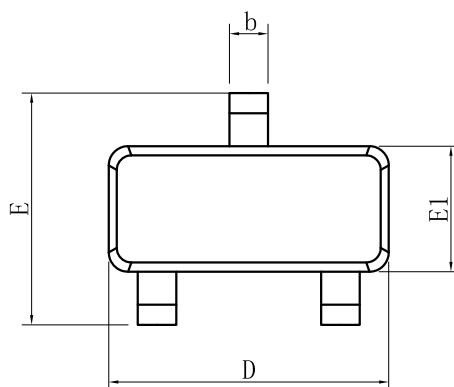
6. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8.OUTLINE AND DIMENSIONS



SECTION B-B

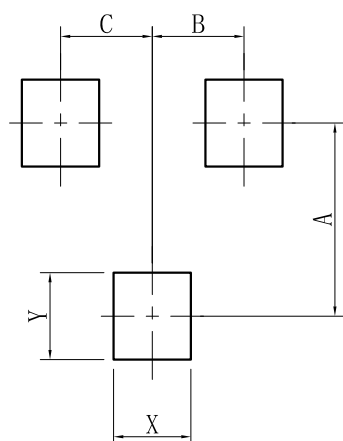


SOT23			
DIM	MIN	NOR	MAX
A	0.89	—	1.12
A1	0.01	—	0.10
A2	0.88	0.95	1.02
b	0.30	—	0.50
b1	0.30	0.40	0.45
c	0.08	—	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	—	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	—	8°
All Dimensions in mm			

GENERAL NOTES

- 1.Top package surface finish $Ra0.4\pm0.2\mu m$
- 2.Bottom package surface finish $Ra0.7\pm0.2\mu m$
- 3.Side package surface finish $Ra0.4\pm0.2\mu m$

9.SOLDERING FOOTPRINT



SOT23	
DIM	(mm)
X	0.80
Y	0.90
A	2.00
B	0.95
C	0.95

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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