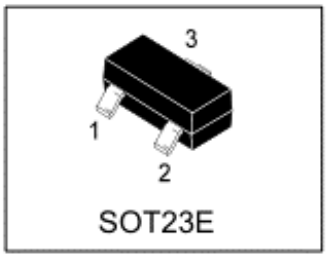
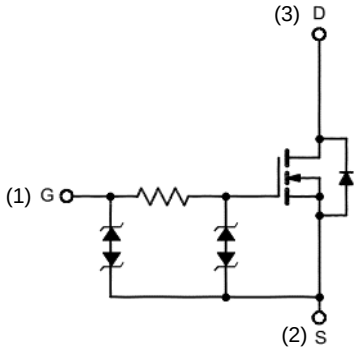
LN2316ELT1G

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

1. FEATURES



- RDS(ON) =25mΩ @VGS =4.5V
- RDS(ON) =29 mΩ @VGS =2.5V
- RDS(ON) =42 mΩ @VGS =1.8V
- Super high density cell design for extremely low RDS(ON)
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- Exceptional on-resistance and maximum DC current capability.



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(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain–Source Voltage		VDSS	20	V
Gate–to–Source Voltage – Continuous		VGS	±8	V
Continuous Drain Current	TA =25℃	ID	6.4	A
	TA =70℃		5.1	
Pulsed Drain Current		IDM	26	A
Maximum Power Dissipation	TA =25℃	PD	1.1	W
	TA =70℃		0.7	
Operating Junction Temperature		TJ	-55~+150	℃
Thermal Resistance-Junction to Ambient(Note 1)		RθJA	110	℃/W
Thermal Resistance-Junction to Case		RθJC	80	℃/W

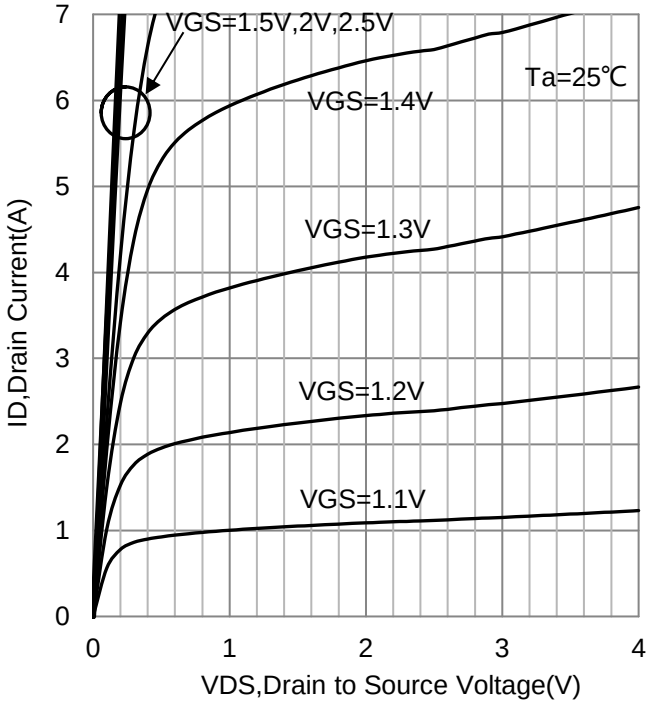
1. The device mounted on 1in² FR4 board with 2 oz copper

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

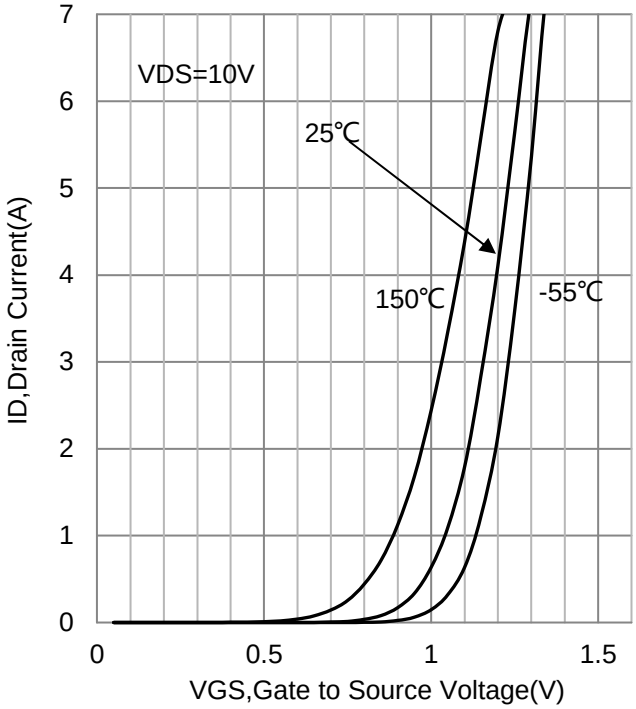
Characteristic		Symbol	Min.	Typ.	Max.	Unit
STATIC						
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 μA)		V(BR)DSS	20	-	-	V
Gate Threshold Voltage (VDS = VGS , ID = 250 μA)		VGS(th)	0.4	-	1	
Gate Leakage Current (VDS = 0 V, VGS = ±4.5 V) (VDS = 0 V, VGS = ±8V)		IGSS	- -	- -	±1 ±10	μA
Zero Gate 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	V
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 ≤300us, duty cycle≤2%

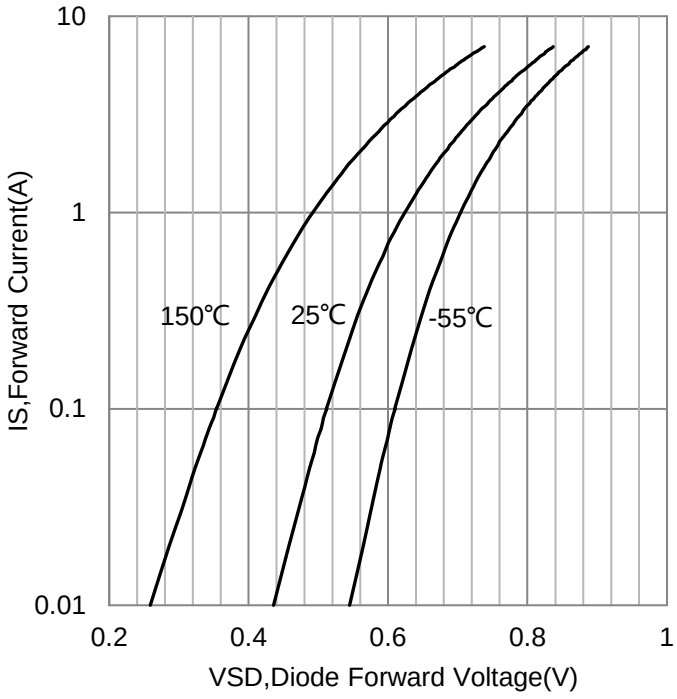
6. ELECTRICAL CHARACTERISTICS CURVES



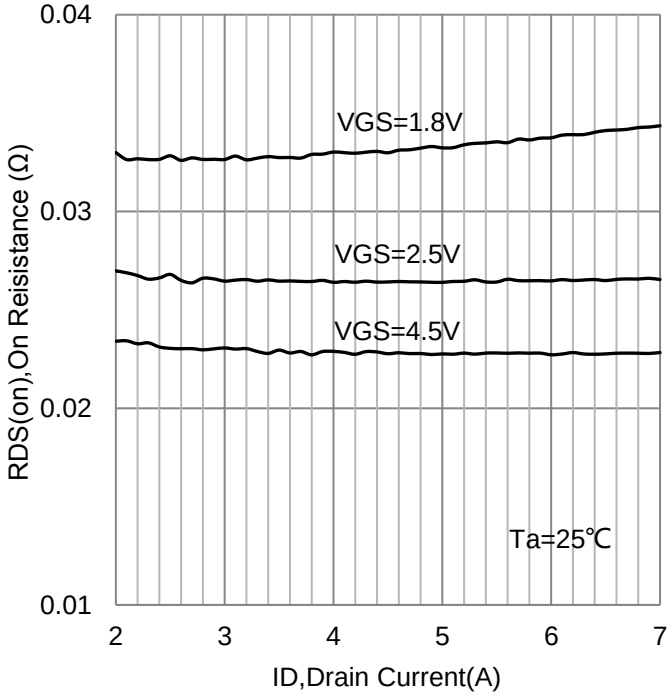
ID vs. VDS



ID vs. VGS

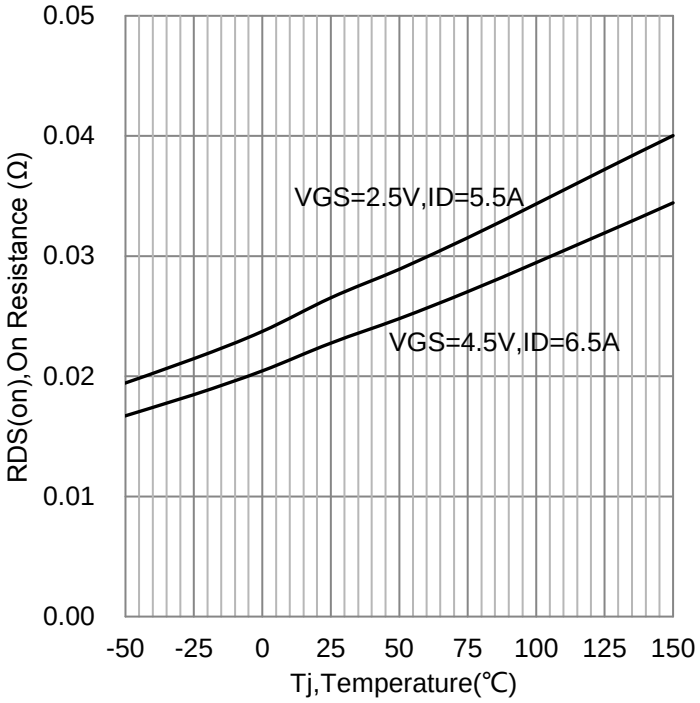


IS vs. VSD

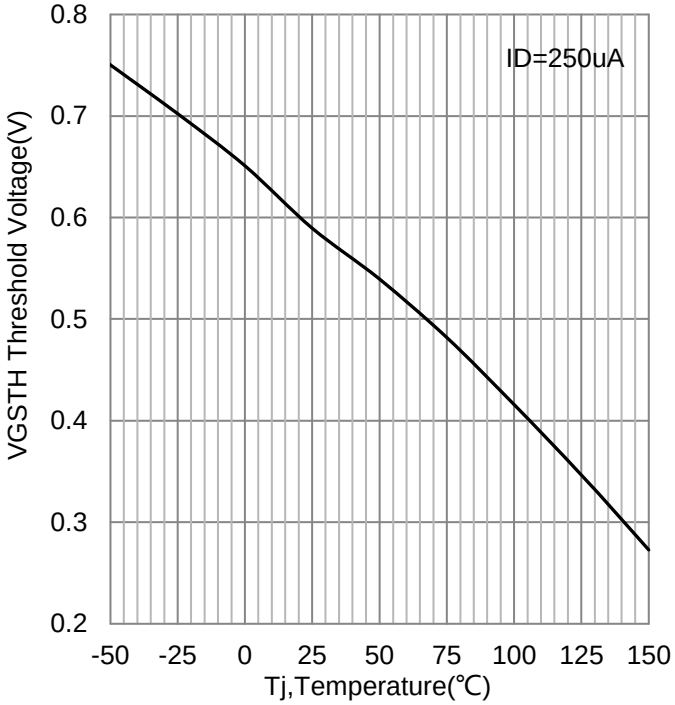


RDS(on) vs. ID

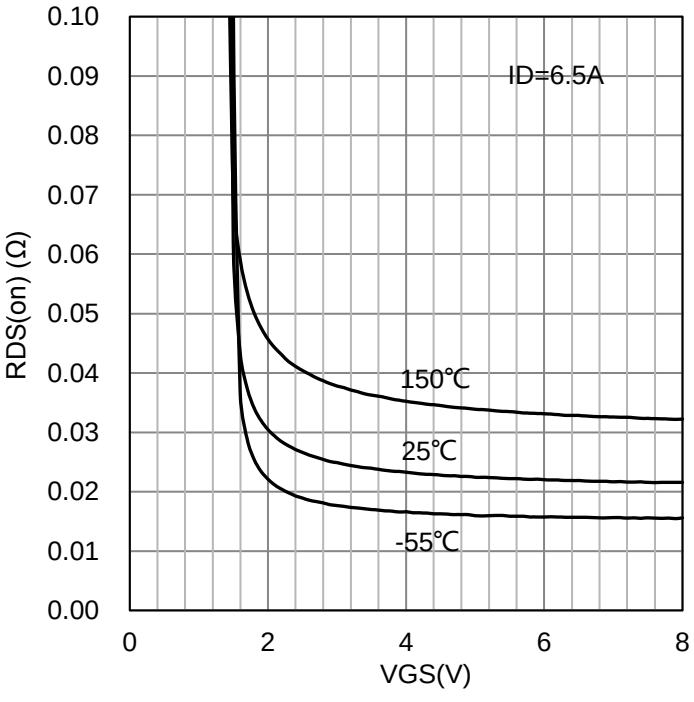
6. ELECTRICAL CHARACTERISTICS CURVES(Con.)



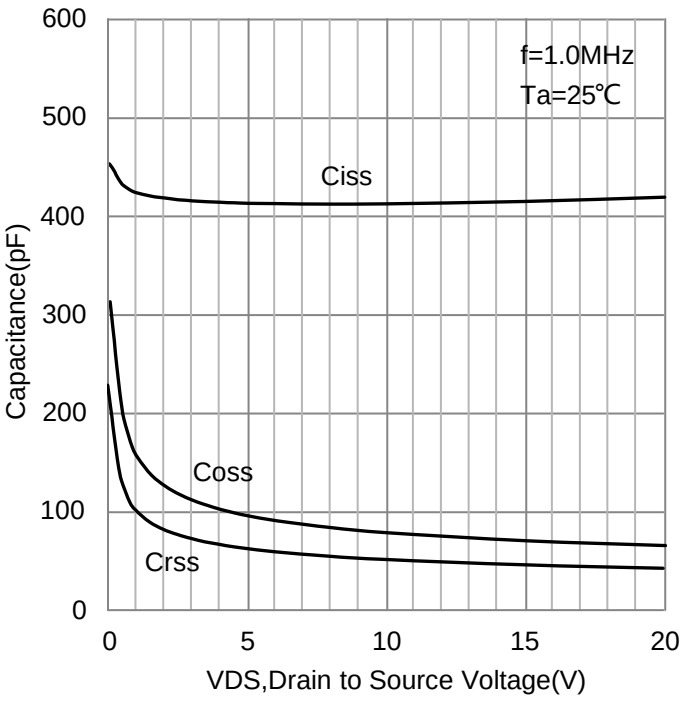
RDS(on) vs Tj



VGSTH vs. Tj

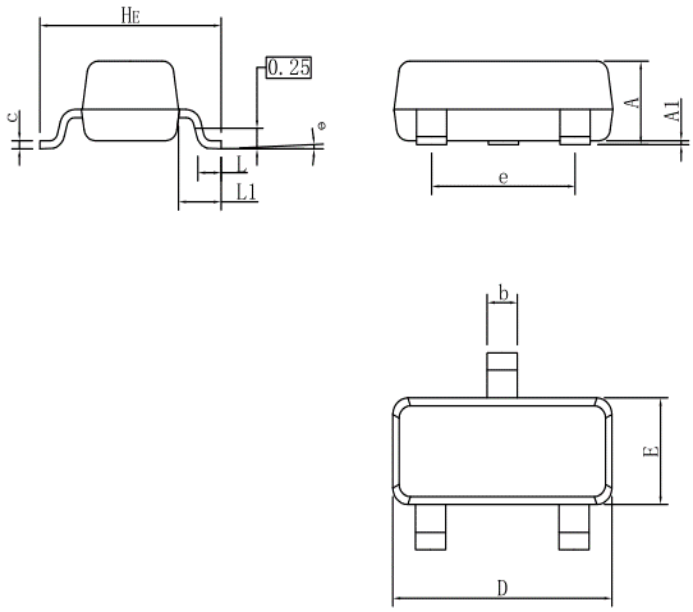


RDS(on) vs. VGS



Capacitance

7.OUTLINE AND DIMENSIONS



SOT23E			
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.01	0.06	0.10
b	0.30	0.40	0.50
c	0.10	0.17	0.20
D	2.80	2.90	3.00
E	1.20	1.30	1.40
e	1.80	1.90	2.00
L	0.20	0.40	0.60
L1	0.60REF		
HE	2.20	2.40	2.60
θ	0º	-	10º
All Dimensions in mm			

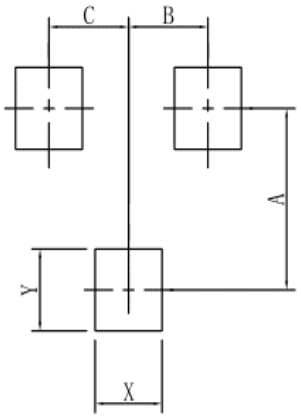
GENERAL NOTES

1.Top package surface finish Ra0.4±0.2um

2.Bottom package surface finish Ra0.7±0.2um

3.Side package surface finish Ra0.4±0.2um

8.SOLDERING FOOTPRINT



SOT23E	
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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