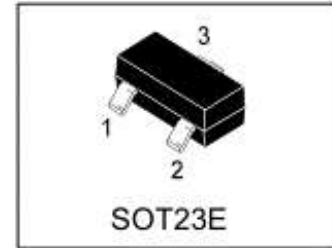


N2316E

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

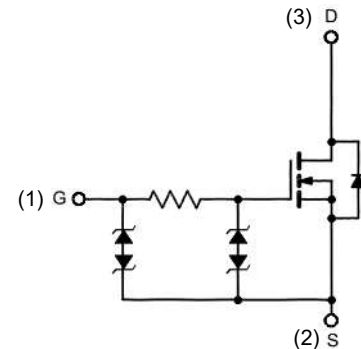
1. FEATURES

- 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
N2316E	N16	3000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	20	V
Gate–to–Source Voltage – Continuous	VGS	±8	V
Continuous Drain Current	ID	TA =25°C	6.4
		TA =70°C	5.1
Pulsed Drain Current	IDM	26	A
Maximum Power Dissipation	PD	TA =25°C	1.4
		TA =70°C	0.9
Operating Junction Temperature	TJ	-55~+150	°C
Thermal Resistance-Junction to Ambient(Note 1)	RθJA	90	°C/W

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



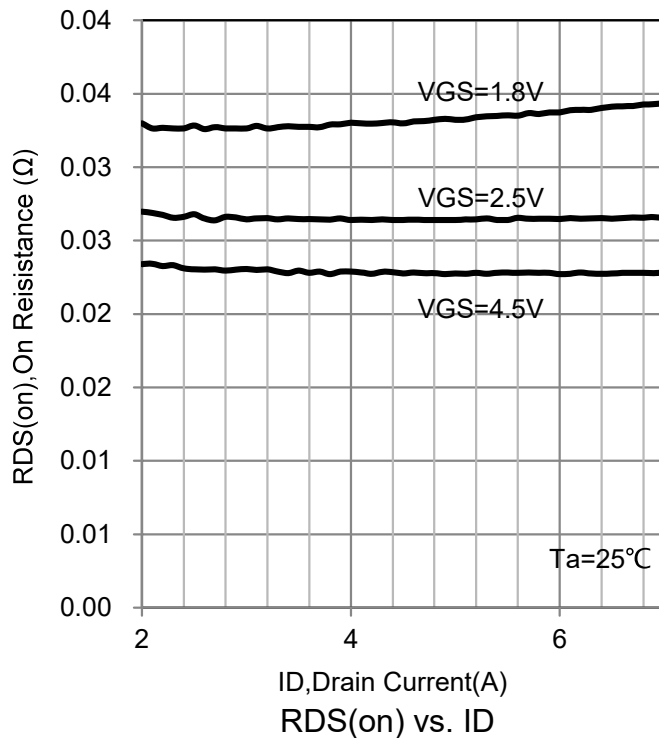
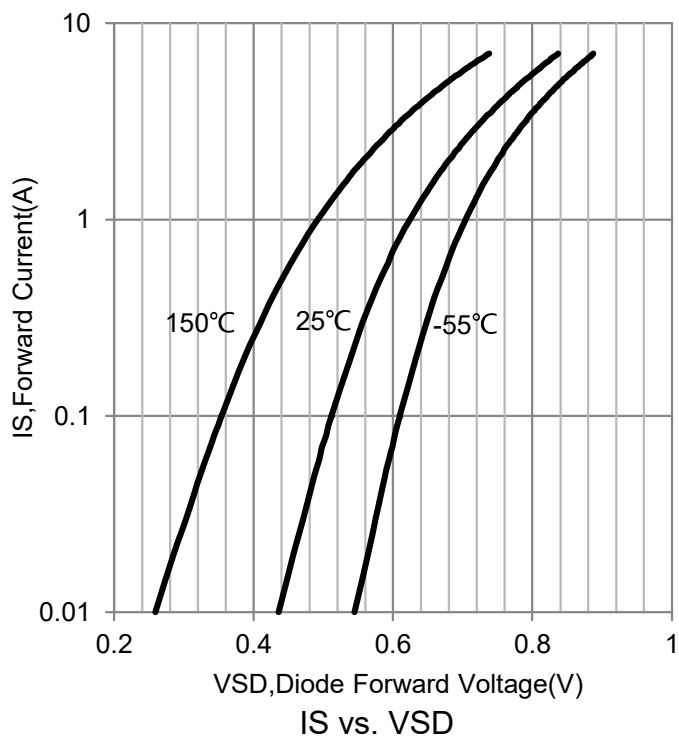
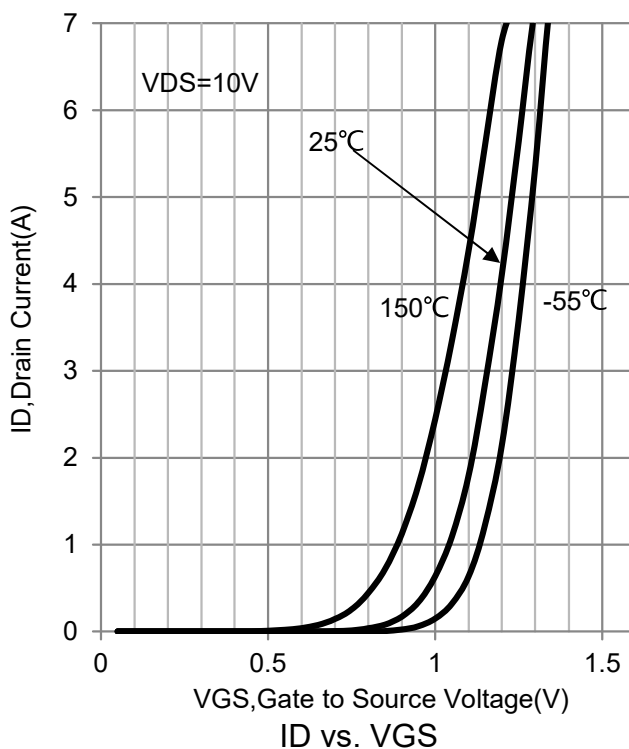
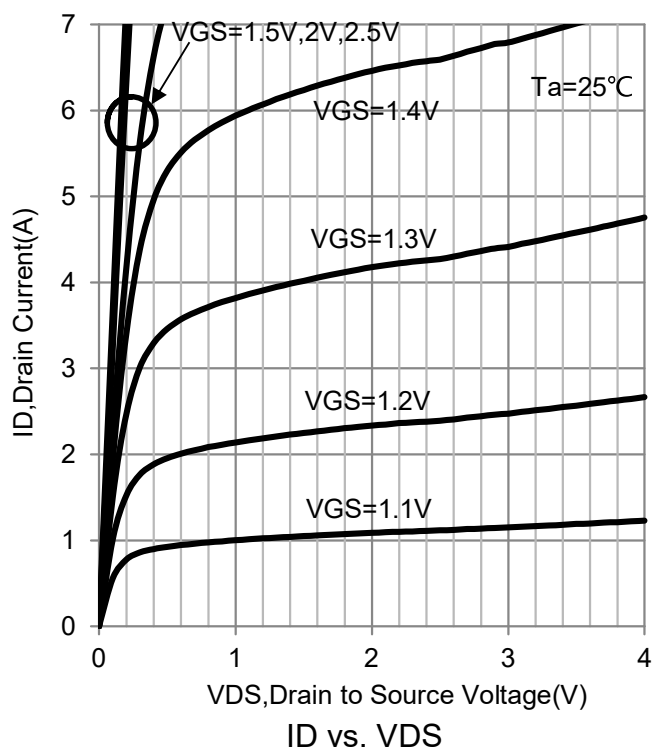
5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

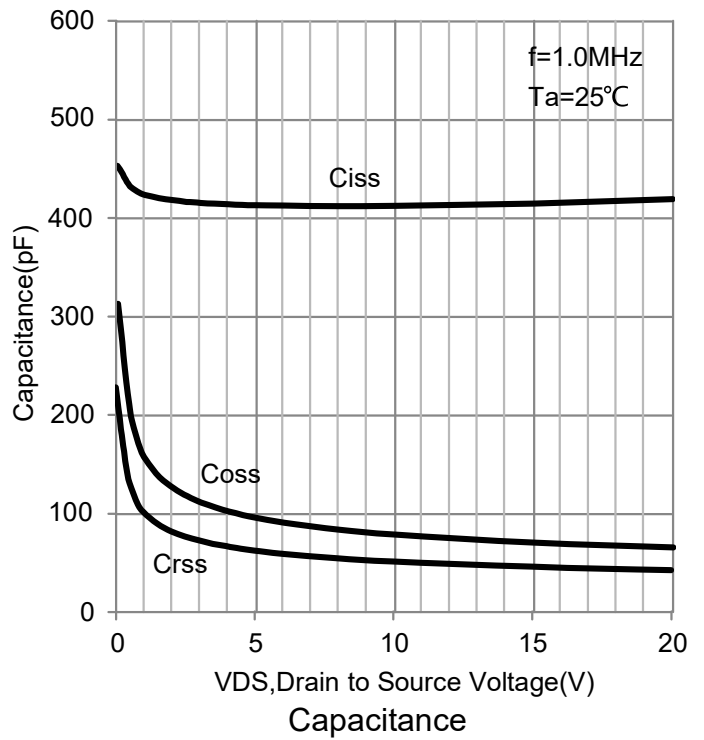
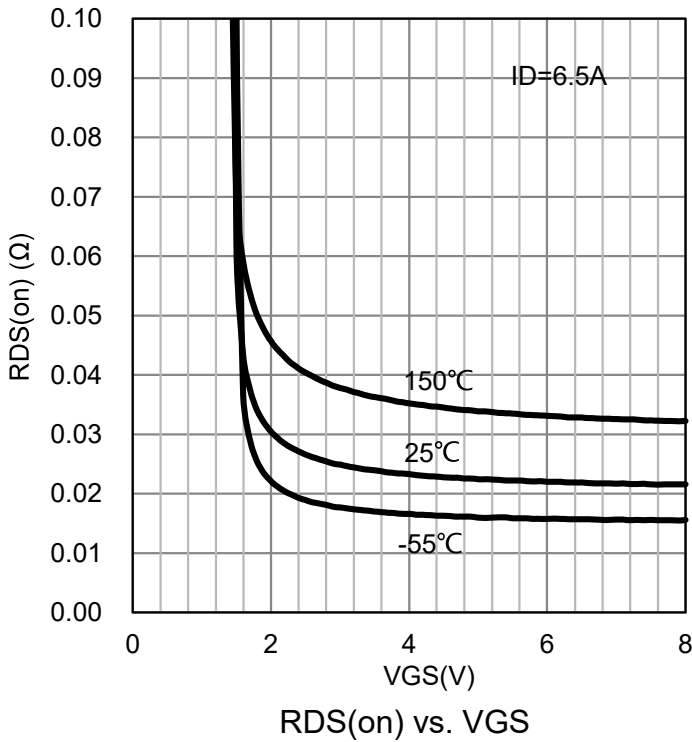
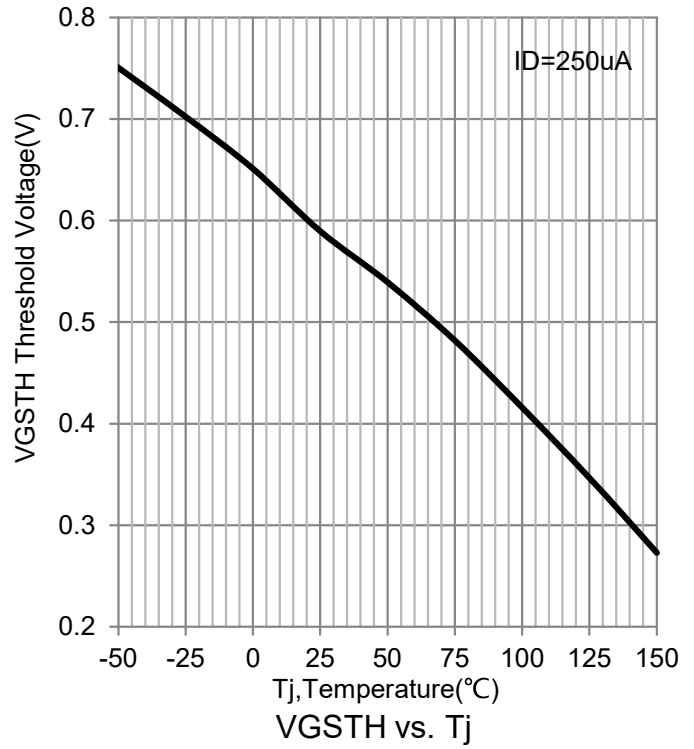
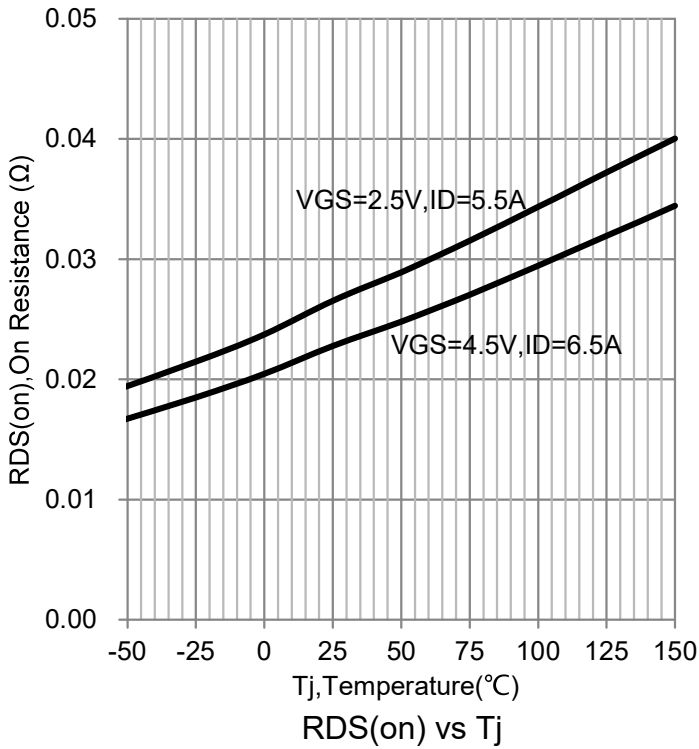
Characteristic	Symbol	Min.	Typ.	Max.	Unit
STATIC					
Drain-Source Breakdown Voltage (VGS =0V, ID =250μA)	V(BR)DSS	20	-	-	V
Gate Threshold Voltage (VDS =VGS , ID =250μA)	VGS(th)	0.4	-	1	
Gate Leakage Current (VDS =0V, VGS =±4.5V) (VDS =0V, VGS =±8V)	IGSS	-	-	±1 ±10	μA
Zero Gate Voltage Drain Current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

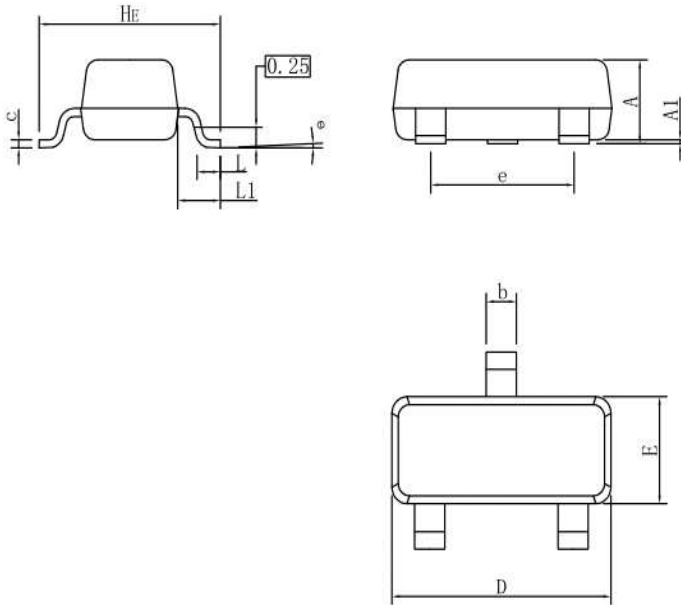
2.Pulse test; pulse width ≤300us, duty cycle ≤2%



6. ELECTRICAL CHARACTERISTICS CURVES



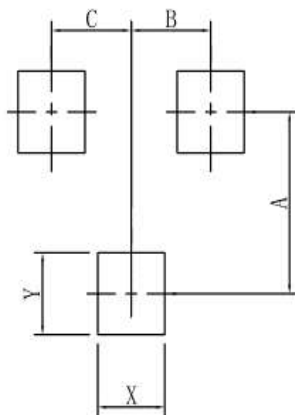
6. ELECTRICAL CHARACTERISTICS CURVES(Con.)


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	0°	-	10°
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

