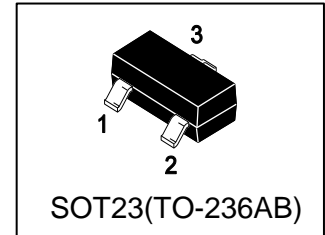


LN2302LT1G

20V N-Channel Enhancement-Mode MOSFET

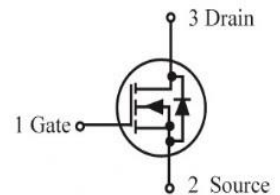
1. FEATURES

- VDS= 20V
- RDS(ON), VGS@4.5V, IDS@2.8A = 60mΩ
- RDS(ON), VGS@2.5V, IDS@2.0A = 115mΩ
- We declare that the material of product compliance with RoHS requirements and Halogen Free.



2. APPLICATIONS

- High density cell design for ultra low on-resistance improved shoot-through FOM



3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LN2302LT1G	N02	3000/Tape&Reel
LN2302LT3G	N02	10000/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
Drain Current			A
– Continuous TA = 25°C	ID	2.3	
– Pulsed(Note 1)	IDM	8	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Power Dissipation	PD	0.9	W
Thermal Resistance, Junction–to–Ambient(Note 2)	RθJA	145	°C/W
Junction and Storage temperature	TJ,Tstg	-55~+150	°C

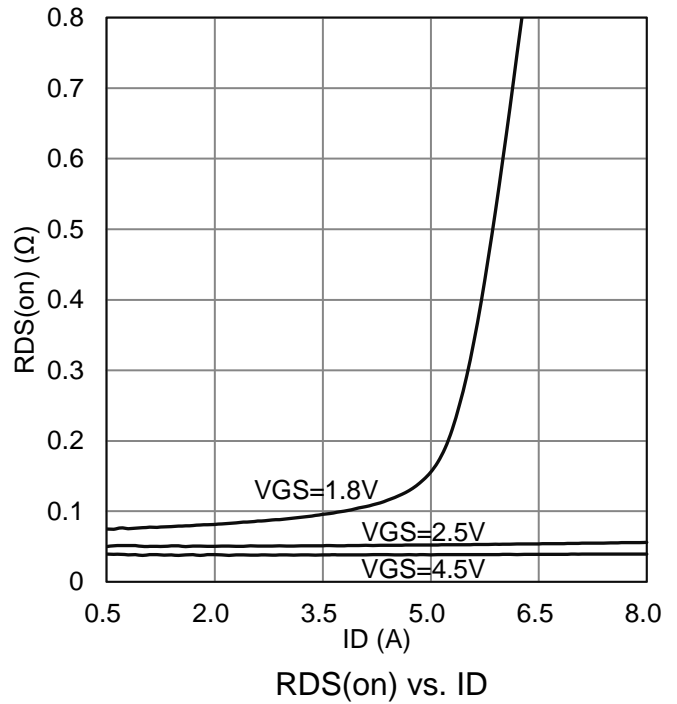
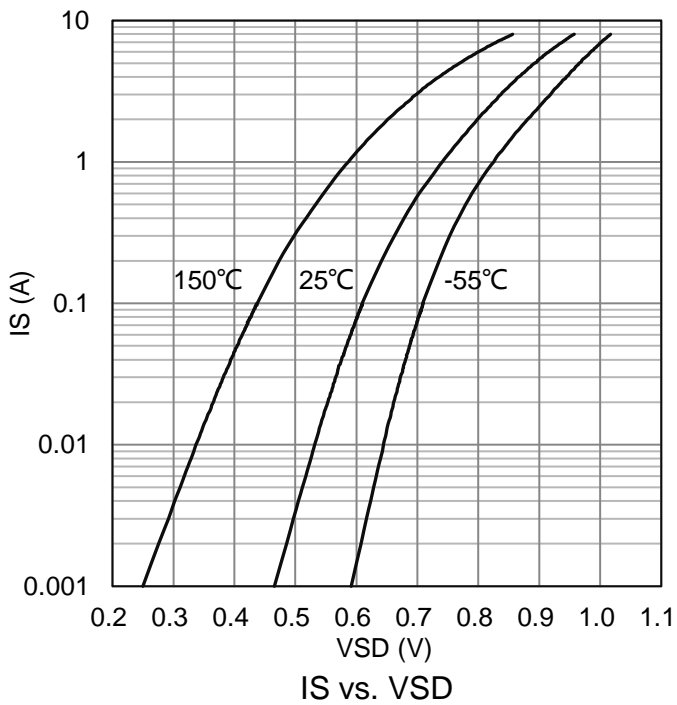
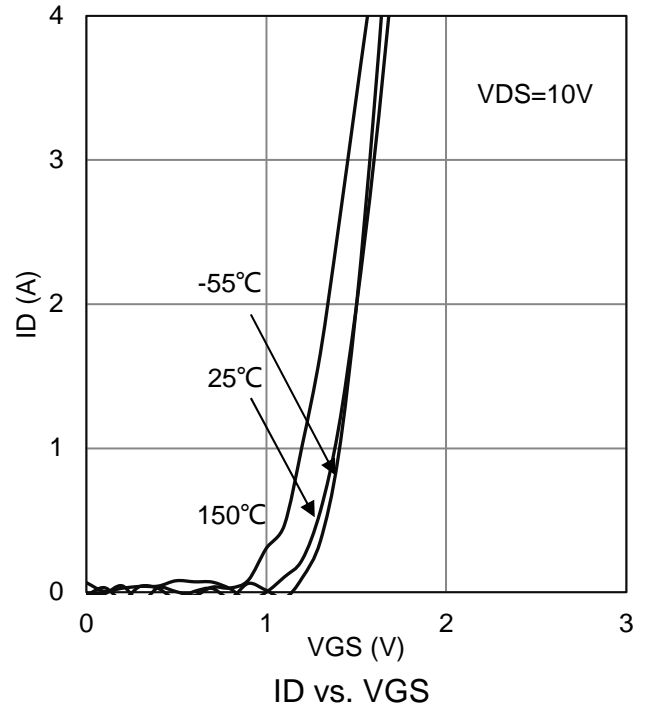
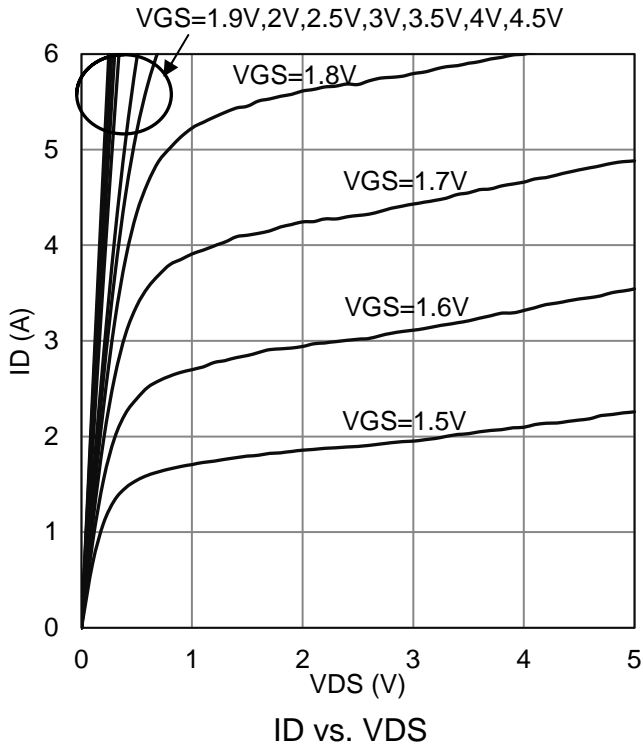
1. Repetitive Rating: Pulse width limited by the Maximum junction temperature.
2. 1-in² 2oz Cu PCB board.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

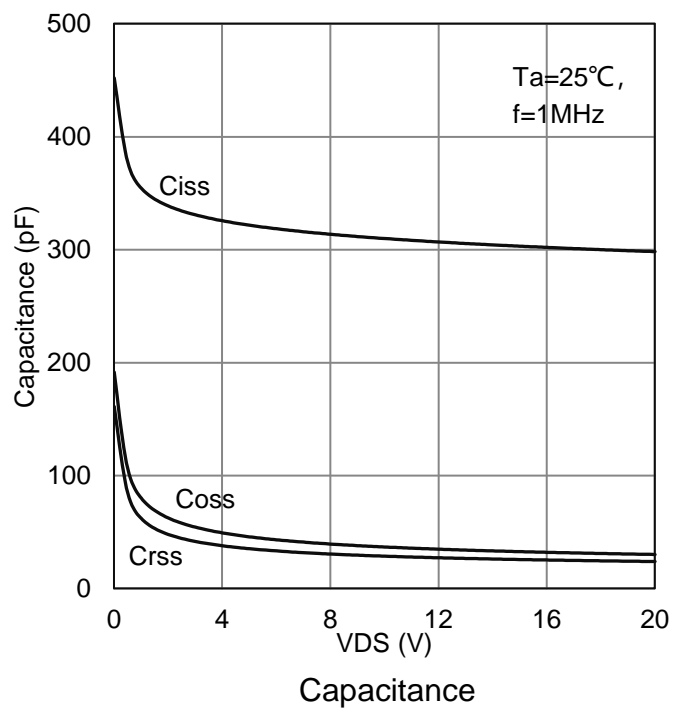
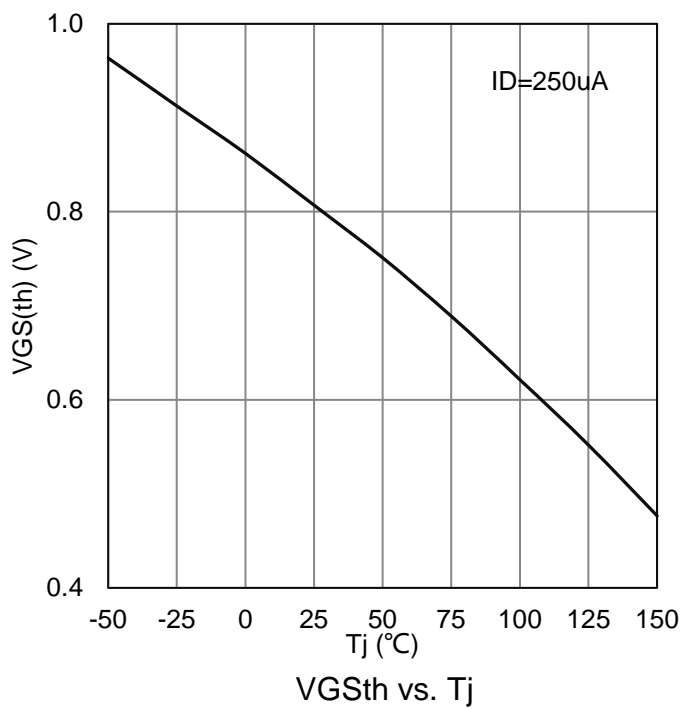
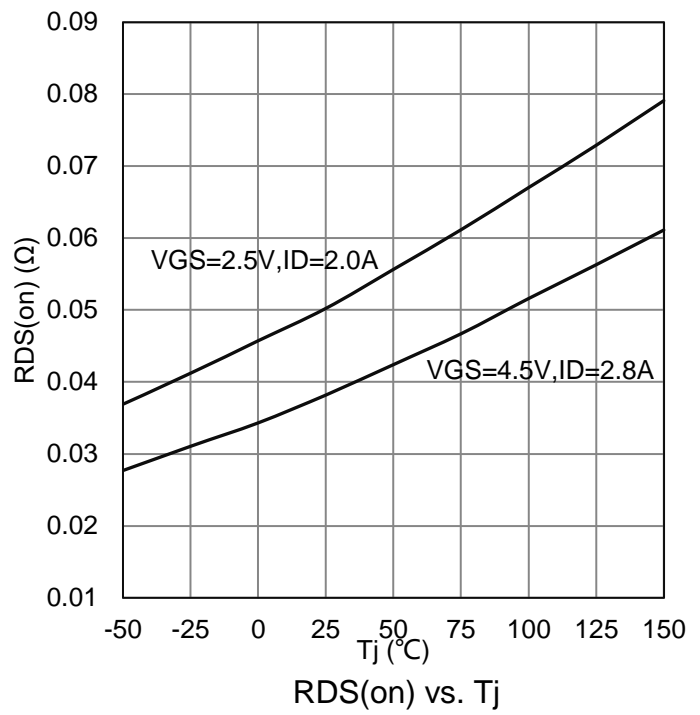
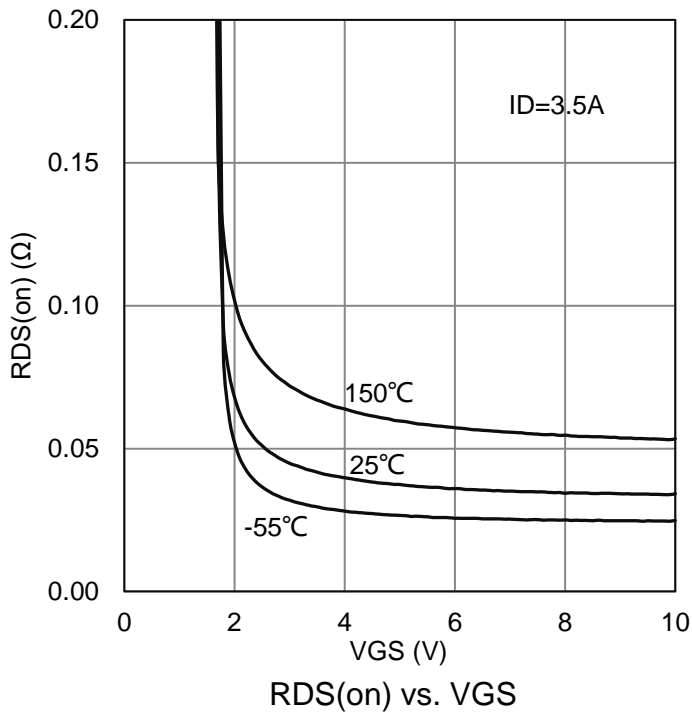
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 μ A)	V(BR)DSS	20	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	0.6	0.95	1.2	V
Gate-Body Leakage (VDS = 0 V, VGS = \pm 8 V)	IGSS	-	-	\pm 100	nA
Zero Gate Voltage Drain Current (VDS = 9.6 V, VGS = 0 V)	IDSS	-	-	1	μ A
Drain-Source On-Resistance(Note 3) (VGS = 4.5 V, ID = 2.8 A) (VGS = 2.5 V, ID = 2 A)	RDS(on)	- -	40 50	60 115	m Ω
Dynamic					
Total Gate Charge	(VDS = 10 V, VGS = 4.5 V, ID = 2.8 A)	Qg	-	3.2	nC
Gate-Source Charge		Qgs	-	0.35	
Gate-Drain Charge		Qgd	-	1.1	
Input Capacitance	(VDS = 6 V, VGS = 0 V, f = 1 MHz)	Ciss	-	327	pF
Output Capacitance		Coss	-	47	
Reverse Transfer Capacitance		Crss	-	37	
Turn-On Delay Time	(VDS = 6 V, ID = 1 A, VGS = 4.5 V, RG = 6.2 Ω , RL = 6.2 Ω)	td(on)	-	3.1	ns
Rise Time		tr	-	2.1	
Turn-Off Delay Time		td(off)	-	12	
Fall Time		tf	-	2.4	
Diode Forward Voltage (ISD = 1.6 A, VGS = 0 V)	VSD	-	-	1.2	V

 3.Pulse Test: Pulse Width \leq 300 μ s, Duty Cycle \leq 2.0%.

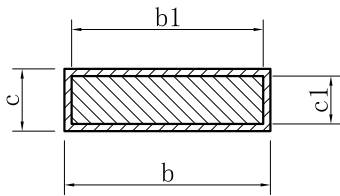
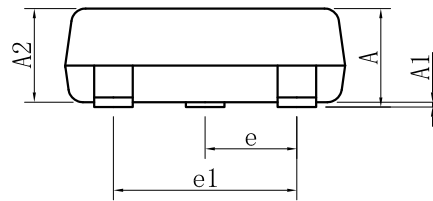
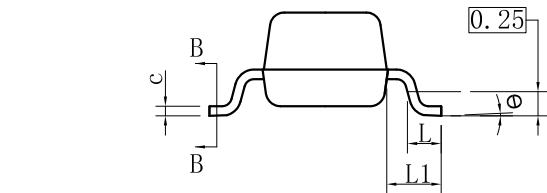
7. ELECTRICAL CHARACTERISTICS CURVES



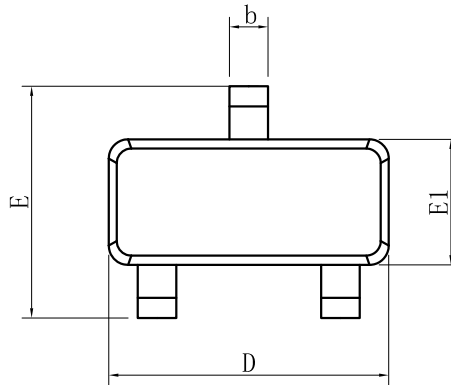
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8. OUTLINE AND DIMENSIONS



SECTION B-B

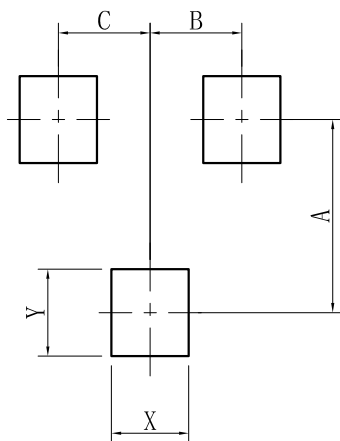


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um

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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