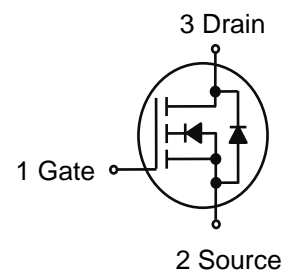
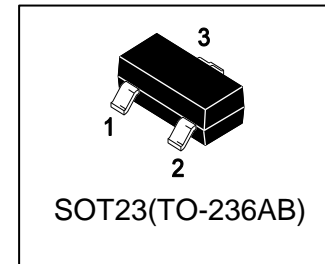


LN2302ALT1G

S-LN2302ALT1G

20V N-Channel Enhancement-Mode MOSFET



1. FEATURES

- Super high density cell design for extremely low RDS(ON)
- Exceptional on-resistance and maximum DC current capability.
- 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 in Notebook
- Portable Equipment
- Load Switch
- DSC

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LN2302ALT1G	02A	3000/Tape&Reel
LN2302ALT3G	02A	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	ID	2.8	A
– Continuous TA = 25°C		2.2	
– Pulsed	IDM	10	A
Maximum Body-Diode Continuous Current	IS	1.6	A

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Power Dissipation	PD	TA =25°C	1.25
		TA =70°C	0.8
Thermal Resistance, Junction-to-Ambient	RθJA	T ≤ 10 s	77
		Steady State	105
Thermal Resistance, Junction-to-Case	RθJC	70	°C/W
Junction and Storage temperature	TJ, Tstg	-55~+150	°C

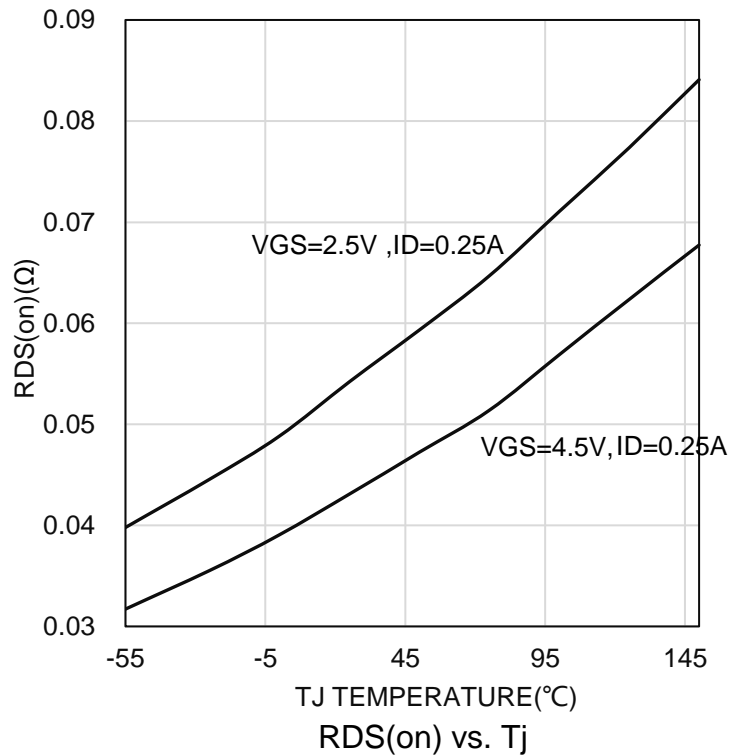
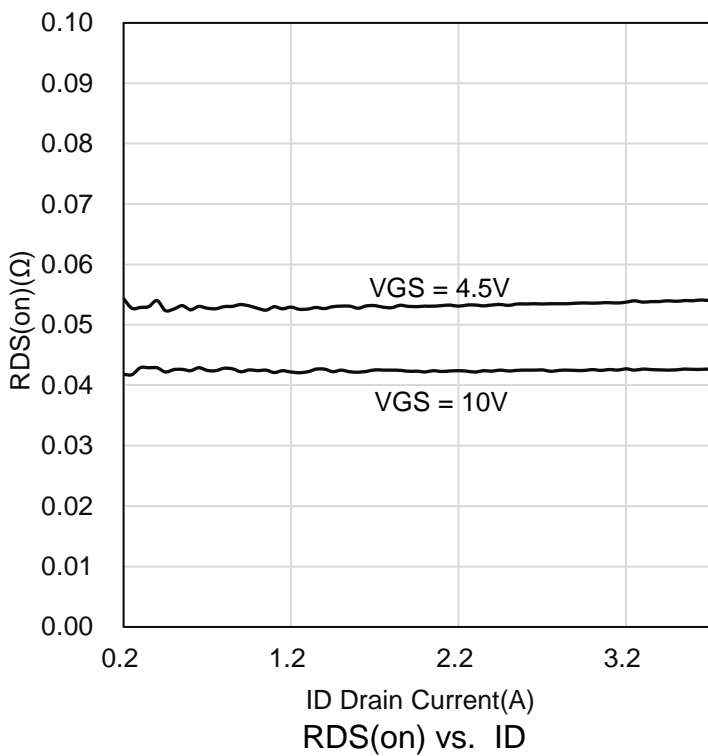
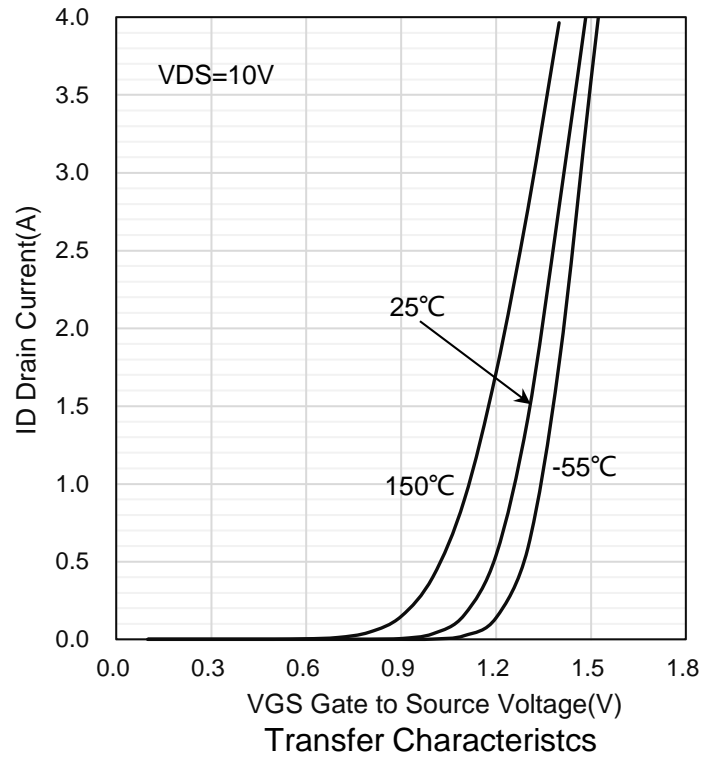
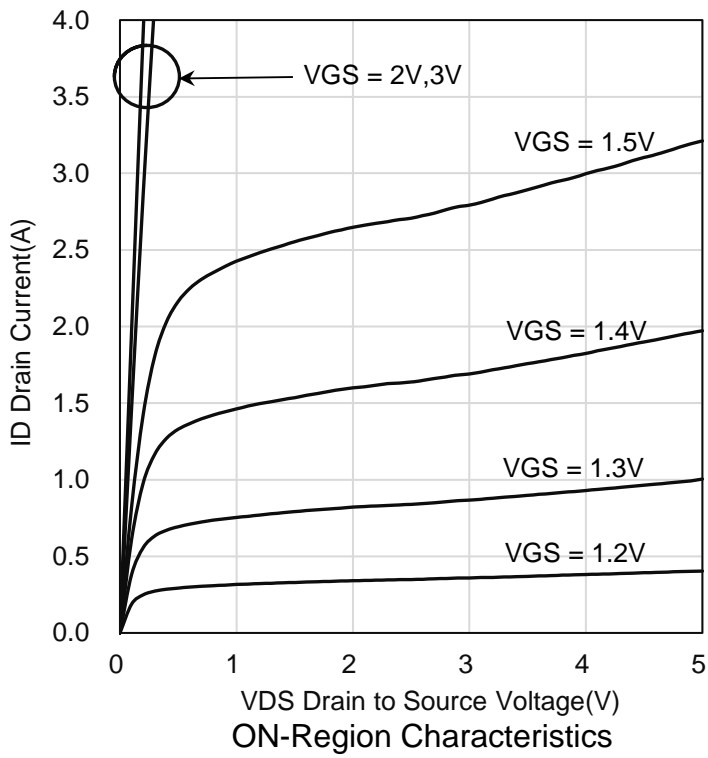
1. The device mounted on 1in² FR4 board with 2 oz copper

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

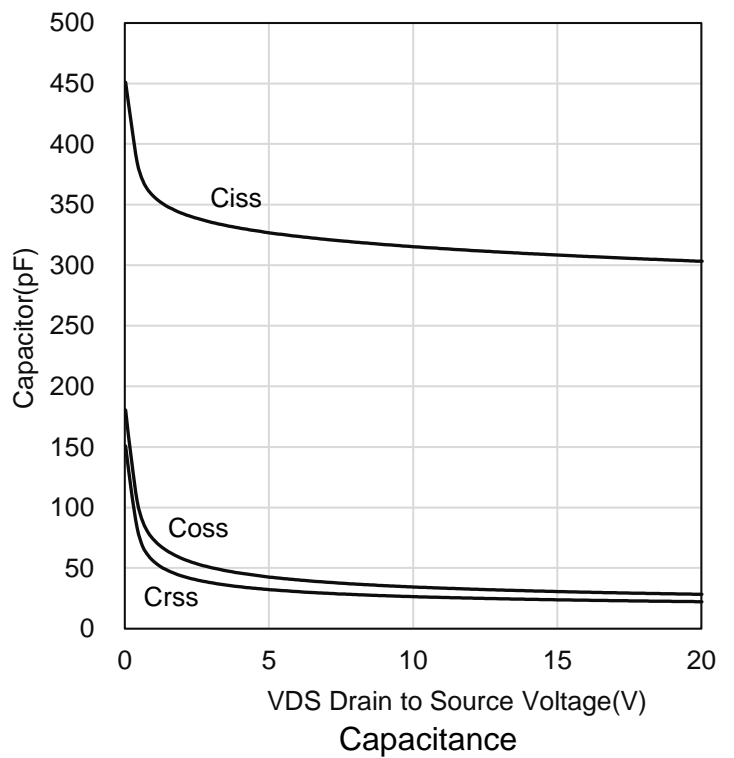
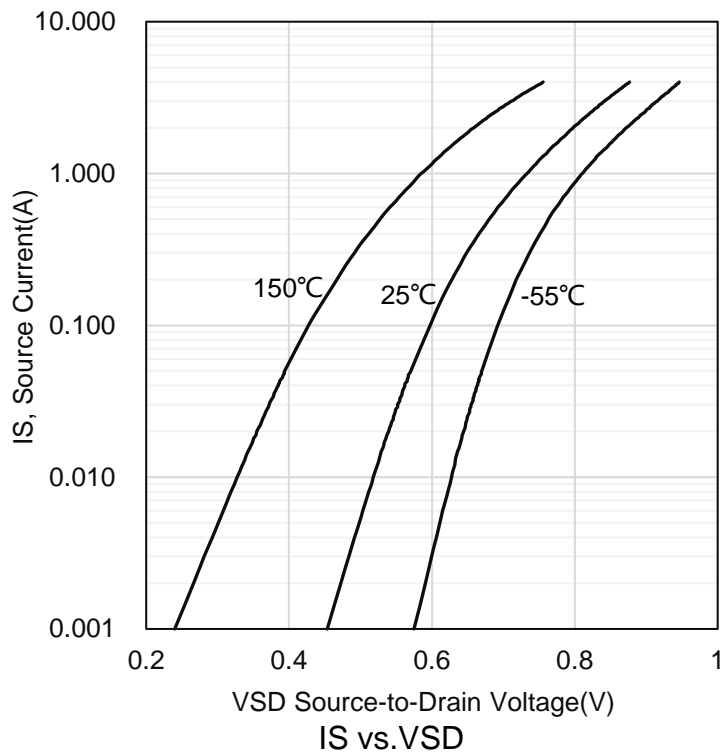
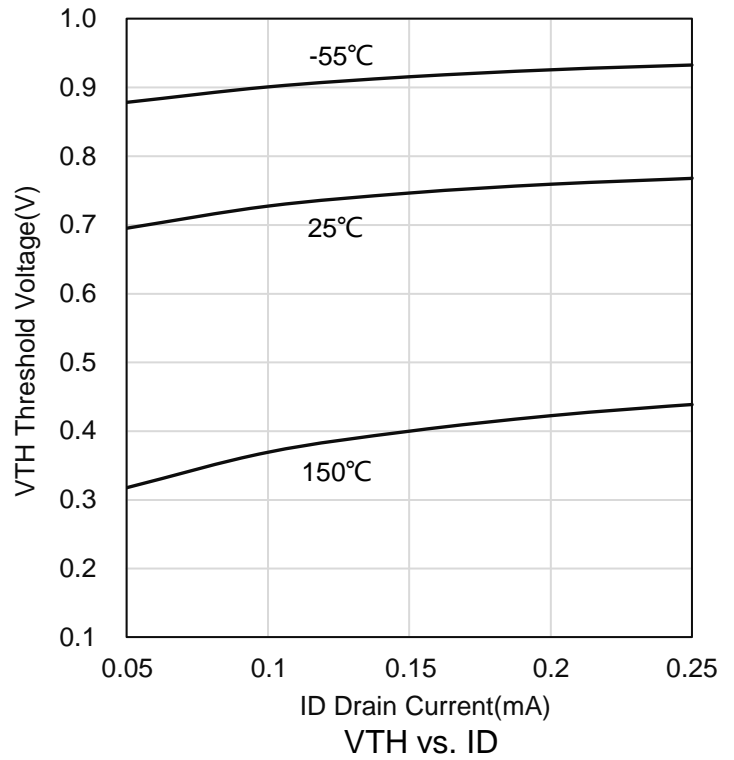
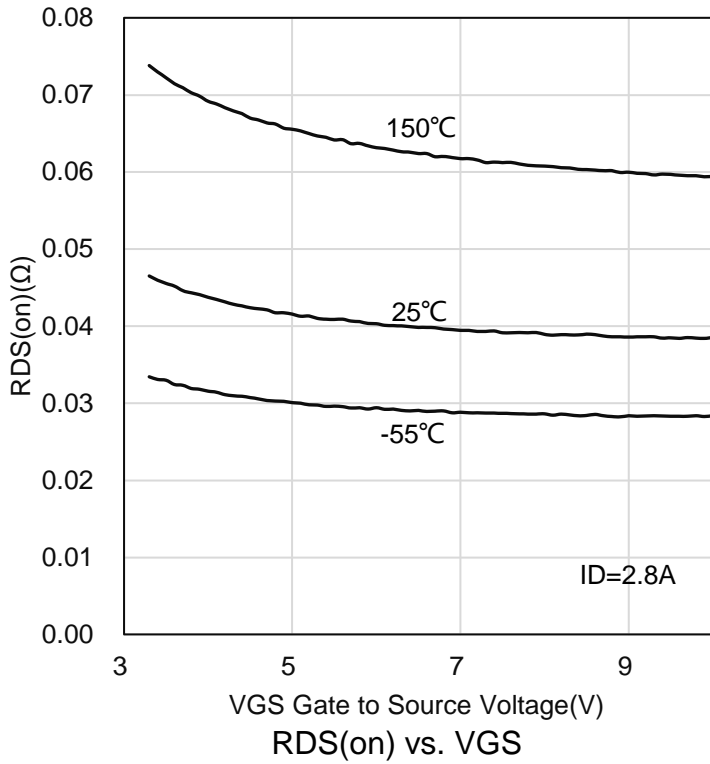
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)	V(BR)DSS	20	-	-	V	
Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	0.6	0.9	1.2	V	
Zero Gate Voltage Drain Current (VDS=20V, VGS=0V) (VDS=20V, VGS=0V, TJ =55°C)	IDSS	-	-	1 10	μA	
Gate–Body Leakage Current (VDS = 0 V, VGS = ±8 V)	IGSS	-	-	±100	nA	
Static Drain–Source On–State Resistance (VGS =4.5V, ID = 2.8A) (VGS =2.5V, ID = 2.5A) (VGS =1.8V, ID = 2.2A)	RDS(on)	-	55 65 80	85 115 130	mΩ	
Forward Voltage (IS =1A, VGS =0V)	VSD	-	0.75	1.2	V	
Input Capacitance (VGS = 0 V, f = 1.0MHz, VDS= 10 V)	Ciss	-	311	-	pF	
Output Capacitance (VGS = 0 V, f = 1.0MHz, VDS= 10 V)	Coss	-	33	-	pF	
Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz, VDS= 10 V)	Crss	-	26.3	-	pF	
Total Gate Charge	(VDS =10V, VGS =4.5V, ID =2.8A)	Qg	-	3.1	-	nC
Gate–Source Charge		Qgs	-	0.5	-	
Gate–Drain Charge		Qgd	-	0.7	-	
Turn-On Delay Time	(VDD = 10V, VGEN = 4.5V,RL = 10 Ω ,RG = 6.2Ω)	td(on)	-	3.4	-	ns
Rise Time		tr	-	2.1	-	
Turn-Off Delay Time		td(off)	-	12.5	-	
Fall Time		tf	-	2.3	-	

2.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

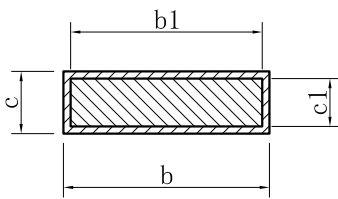
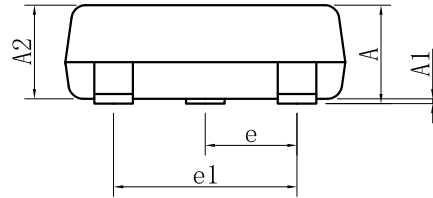
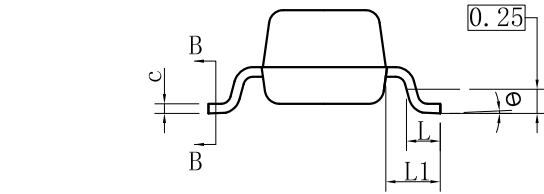
7. ELECTRICAL CHARACTERISTICS CURVES



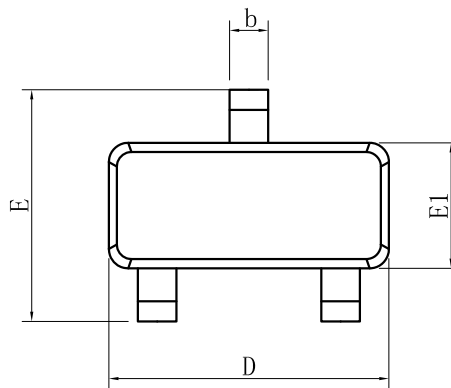
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8.OUTLINE AND DIMENSIONS



SECTION B-B

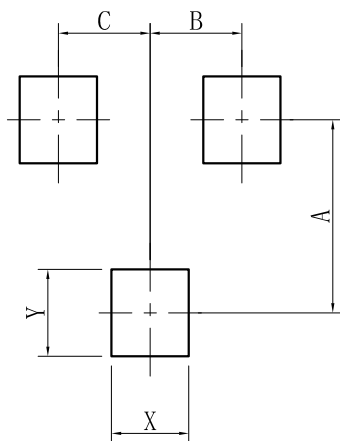


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

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.
- Before you use our Products for new Project, you are requested to carefully read this document and fully understand its contents. LRC shall not be in any way responsible or liable for failure, malfunction or accident arising from the use of any LRC's Products against warning, caution or note contained in this document.
- All information contained in this document is current as of the issuing date and subject to change without any prior notice. Before purchasing or using LRC's Products, please confirm the latest information with a LRC sales representative.