

S-LN03N060TZHG

60V N-Channel Enhancement Mode MOSFET

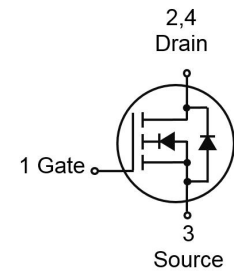
1. FEATURES

- Low RDS(on) trench technology.
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.



2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives



3. ORDERING INFORMATION

Device	Marking	Shipping
S-LN03N060TZHG	SN	1000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C unless otherwise stated)

Parameter	Symbol	Limits	Unit
Drain-to-Source Voltage	VDSS	60	V
Gate-to-Source Voltage	VGS	±20	V
Continuous Drain Current	ID	TA =25°C	5
		TA =70°C	3.8
Pulsed Drain Current (Note 1)	IDM	20	A
Avalanche Current(L=0.1mH)	IAS	13	A
Avalanche energy(L=0.1mH)	EAS	8.45	mJ
Power Dissipation TA =25°C	PD	2	W
Operating Junction and Storage Temperature Range	TJ , TSTG	-55 ~+150	°C

1.Pulse width limited by maximum junction temperature.

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Thermal Resistance,Junction-to-Ambient (Note 2)	RθJA	65	°C/W
Thermal Resistance,Junction-to-Case (Note 2)	RθJC	15	°C/W

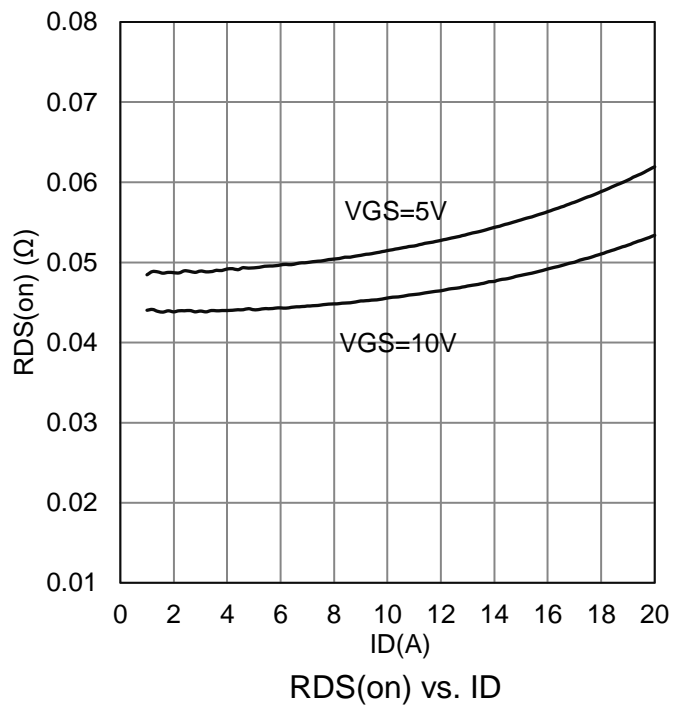
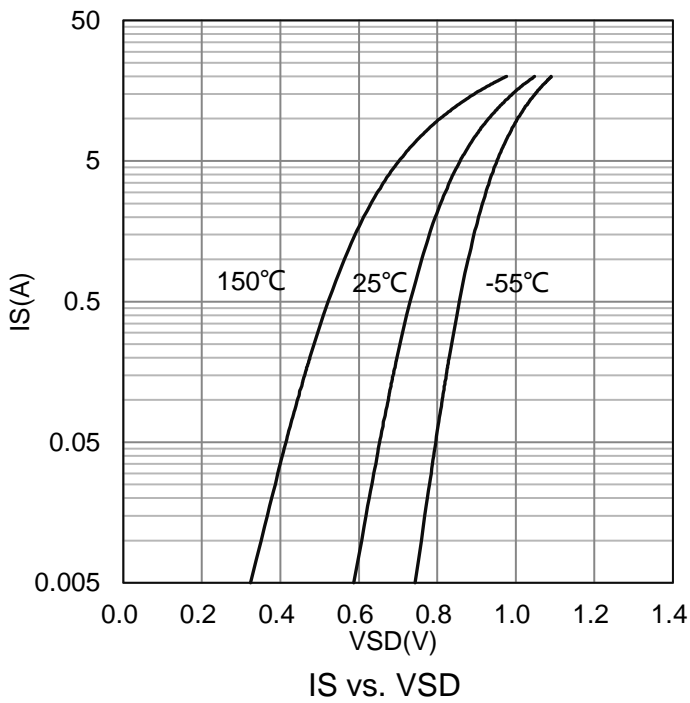
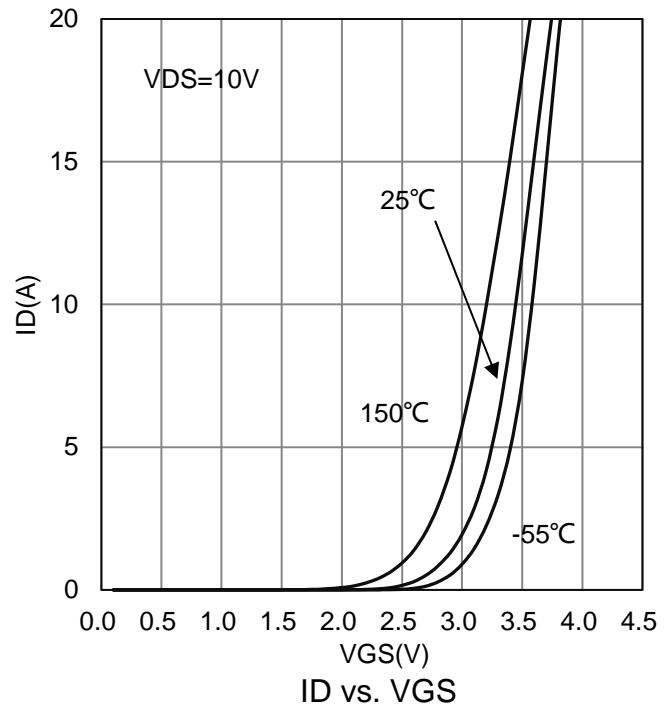
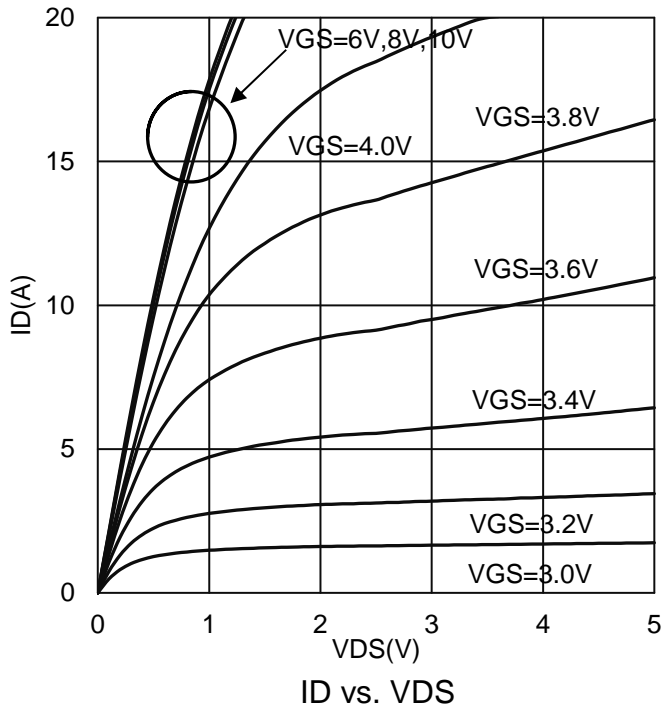
2. 1-in² 2oz Cu PCB board

6. ELECTRICAL CHARACTERISTICS

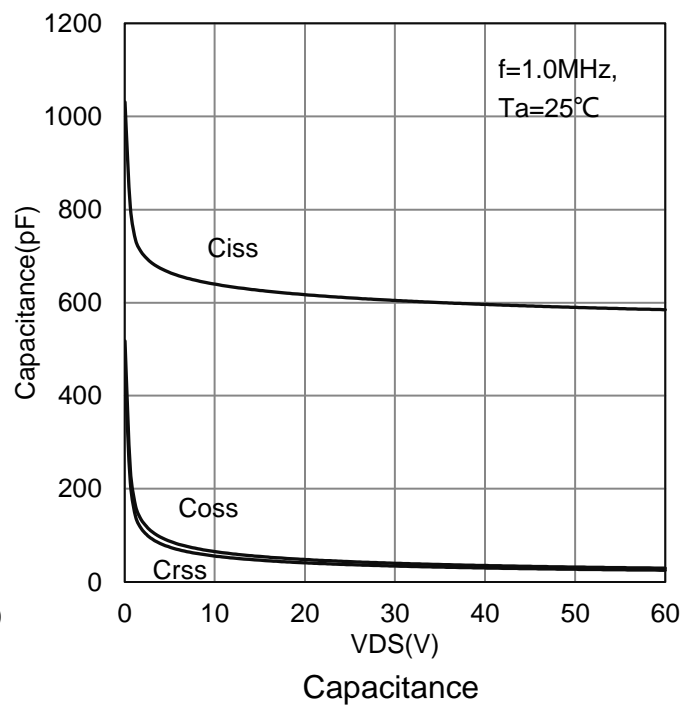
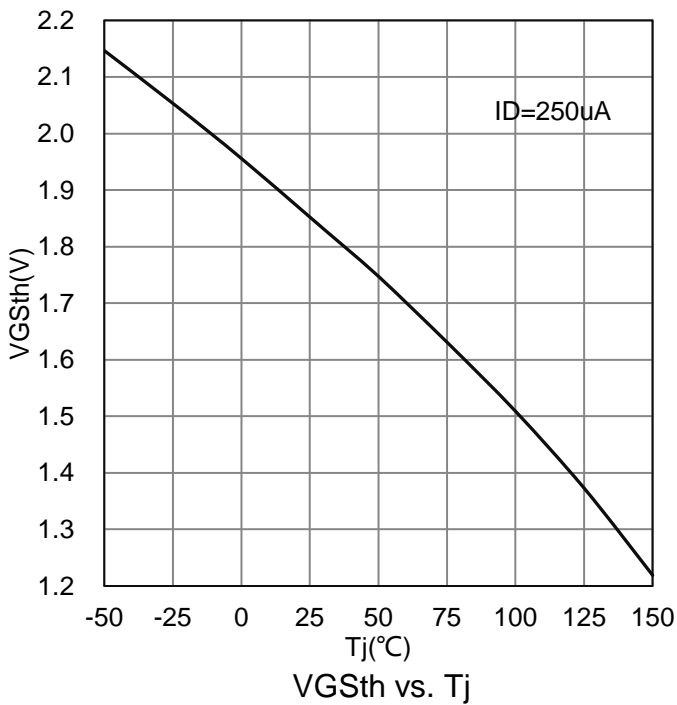
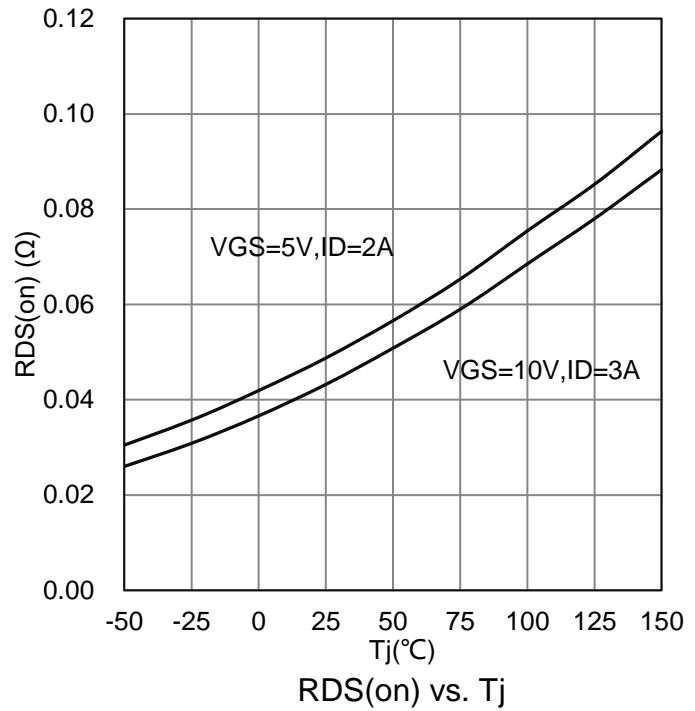
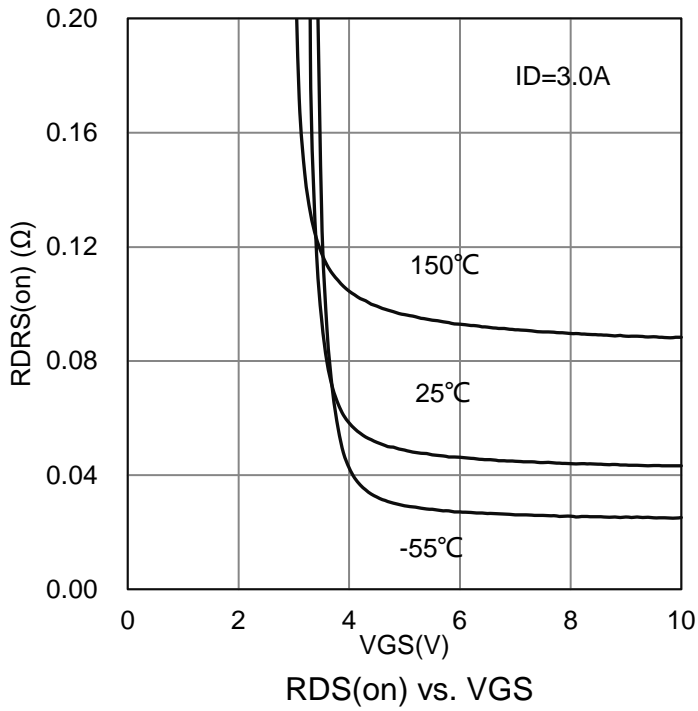
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain to Source Breakdown Voltage (VGS = 0V, ID = 250μA)	V(BR)DSS	60	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 uA)	VGS(th)	1	2	3.2	V
Gate-Body Leakage (VDS = 0 V, VGS = ±20 V)	IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS = 48 V, VGS = 0 V)	IDSS	-	-	1	μA
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 3 A) (VGS = 5 V, ID = 2 A)	RDS(on)	- -	50 58	60 75	mΩ
Dynamic					
Total Gate Charge	(VDS = 30 V, VGS = 10 V, ID = 3A)	Qg	-	15	nC
Gate-Source Charge		Qgs	-	2.2	
Gate-Drain Charge		Qgd	-	4	
Turn-On Delay Time	(VDS = 30V, ID=1A, VGS = 10V RG = 6 Ω)	td(on)	-	10	ns
Rise Time		tr	-	12	
Turn-Off Delay Time		td(off)	-	20	
Fall Time		tf	-	15	
Input Capacitance	(VDS = 30 V, VGS = 0 V, f = 1 MHz)	Ciss	-	605	pF
Output Capacitance		Coss	-	40	
Reverse Transfer Capacitance		Crss	-	34	
Diode Forward Voltage(Note 3) (VGS=0V, IS=2.1A)	VSD	-	-	1.2	V
Gate Resistance (VDS=0V, VGS=0V, f=1.0MHz)	Rg	-	1.5	-	Ω

3. Pulse test: PW ≤ 300us duty cycle ≤ 2%.

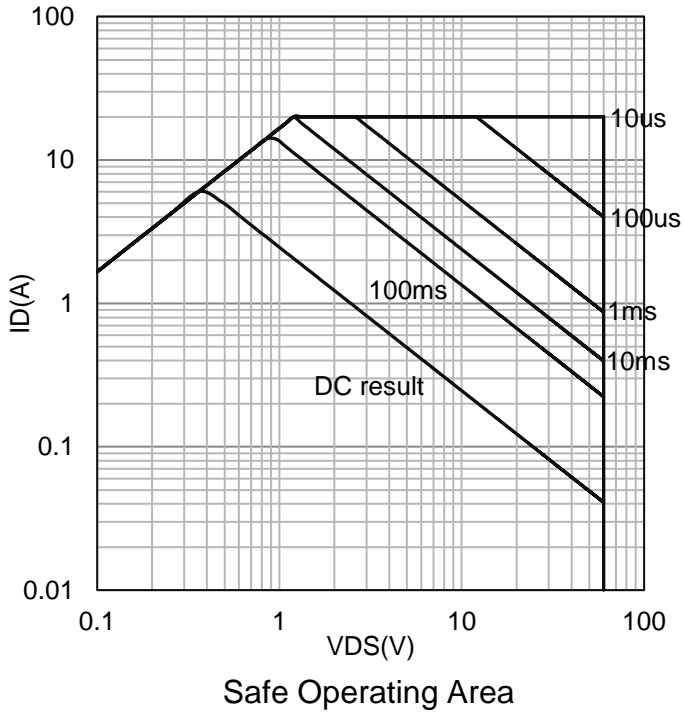
7. ELECTRICAL CHARACTERISTICS CURVES



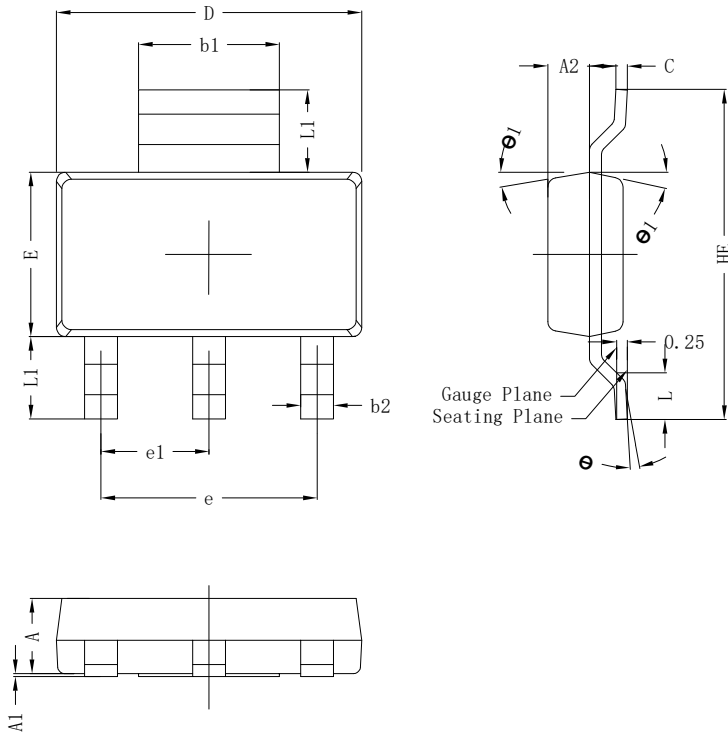
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



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8. OUTLINE AND DIMENSIONS SOT223

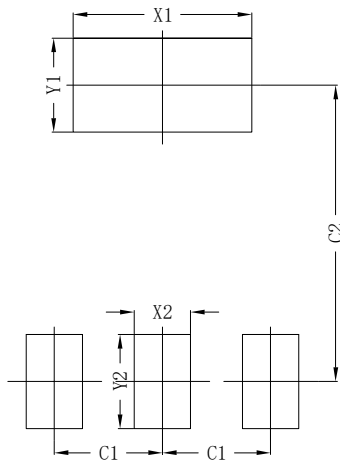


SOT223			
DIM	MIN	NOR	MAX
A	1.50	1.60	1.70
A1	0.00	0.05	0.10
A2	0.80	0.90	1.00
b1	2.90	3.02	3.10
b2	0.60	0.72	0.80
c	0.20	0.27	0.35
D	6.30	6.50	6.70
E	3.30	3.50	3.70
e	4.60BSC		
e1	2.30BSC		
HE	6.80	7.00	7.20
L	0.80	1.00	1.20
L1	1.75(REF)		
θ	0°~8°		
θ 1	8°	10°	12°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish $Ra0.4 \pm 0.2\mu m$
2. Bottom package surface finish $Ra0.7 \pm 0.2\mu m$
3. Side package surface finish $Ra0.4 \pm 0.2\mu m$
4. Protrusion or Gate Burrs shall not exceed 0.10mm per side.

9. SOLDERING FOOTPRINT



SOT223	
DIM	(mm)
X1	3.80
Y1	2.00
X2	1.20
Y2	2.00
C1	2.30
C2	6.30

DISCLAIMER

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