

# LN2680LT1G

## 60V N-Channel Enhancement Mode MOSFET

### 1. FEATURES

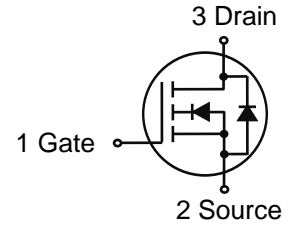
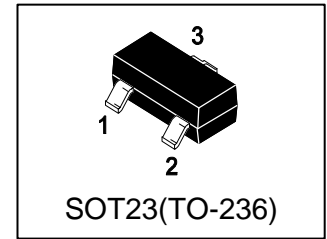
- Low RDS(on) trench technology.
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.

### 2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives

### 3. ORDERING INFORMATION

Device	Marking	Shipping
LN2680LT1G	B6E	3000/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	4.4
		TA =70°C	3
Pulsed Drain Current (Note 1)	IDM	16	A
Avalanche Current(L=0.1mH)	IAS	13	A
Avalanche Energy(L=0.1mH)	EAS	8.45	mJ

### 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Power Dissipation	PD	0.9	W
Thermal Resistance, Junction-to-Ambient(Note 2)	RθJA	140	°C/W
	RθJC	105	°C/W
Junction and Storage temperature	TJ,Tstg	-55~+150	°C

1. Pulse width limited by maximum junction temperature.

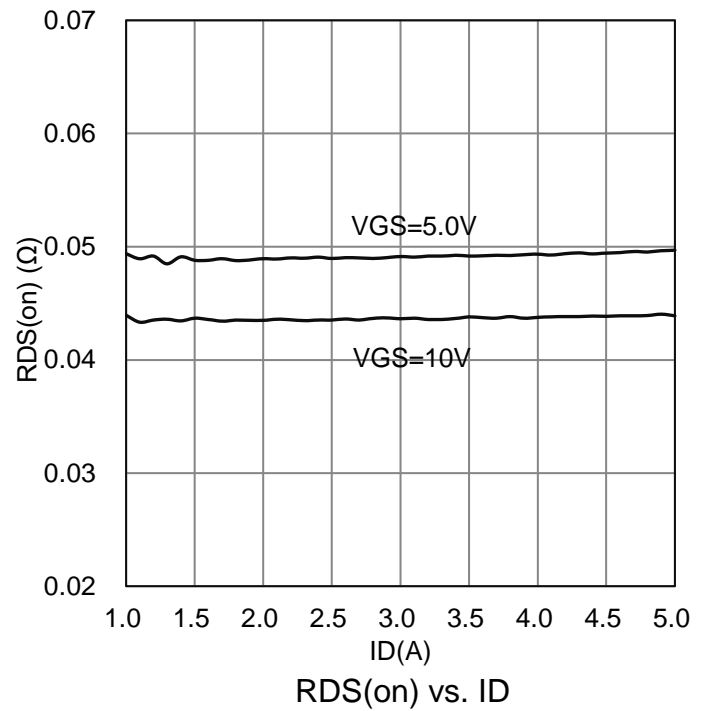
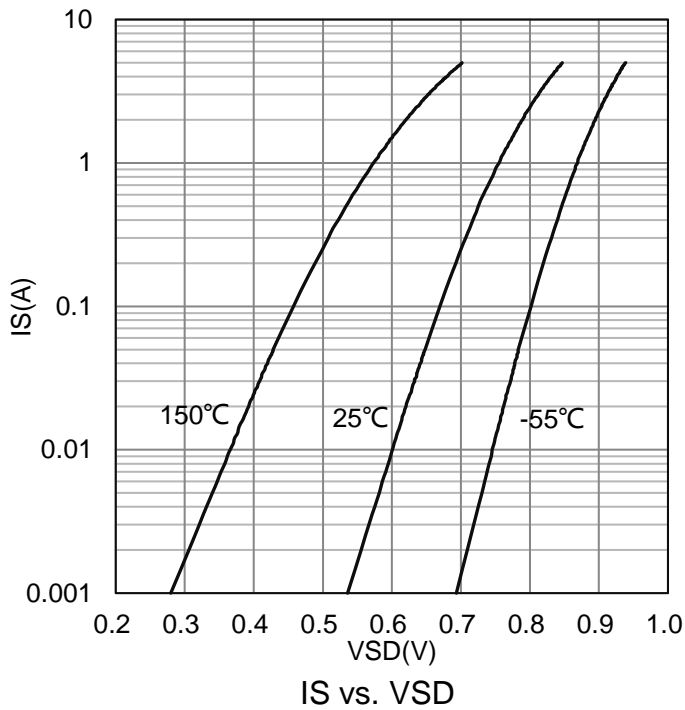
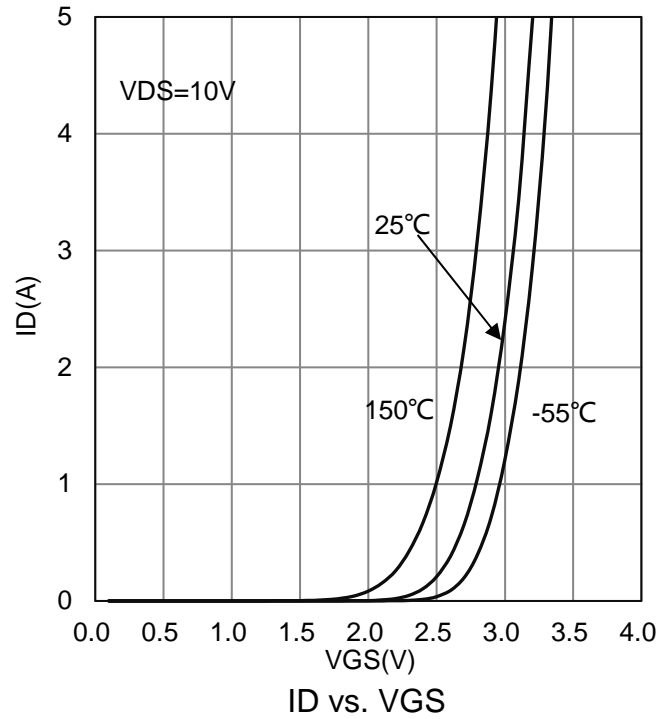
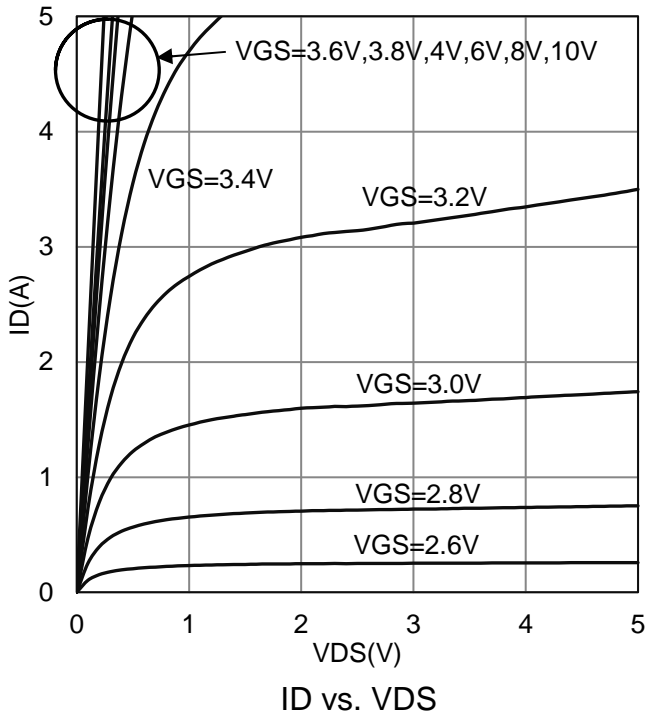
2. 1-in<sup>2</sup> 2oz Cu PCB board.

## 6. ELECTRICAL CHARACTERISTICS

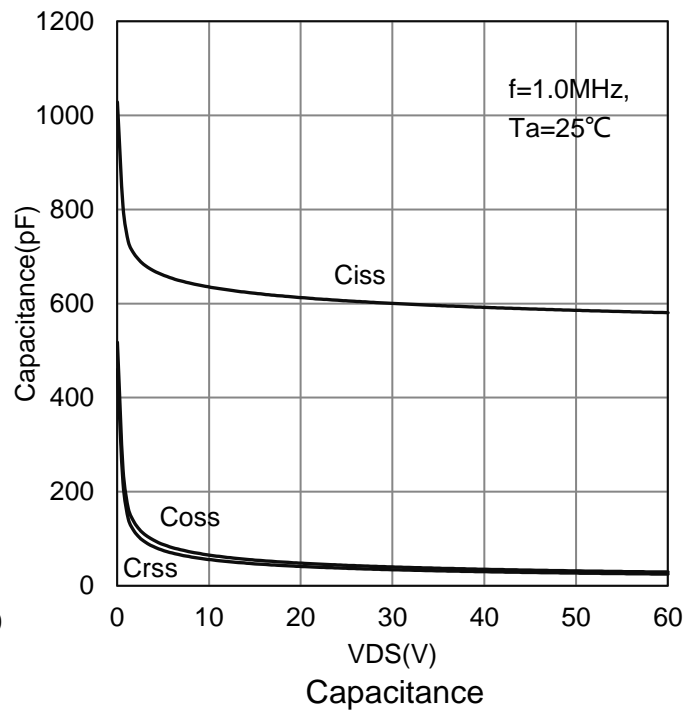
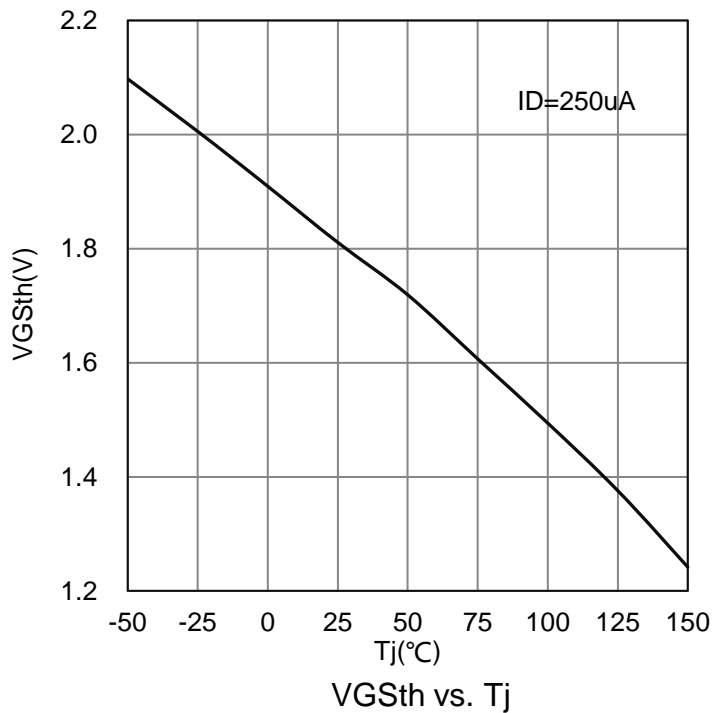
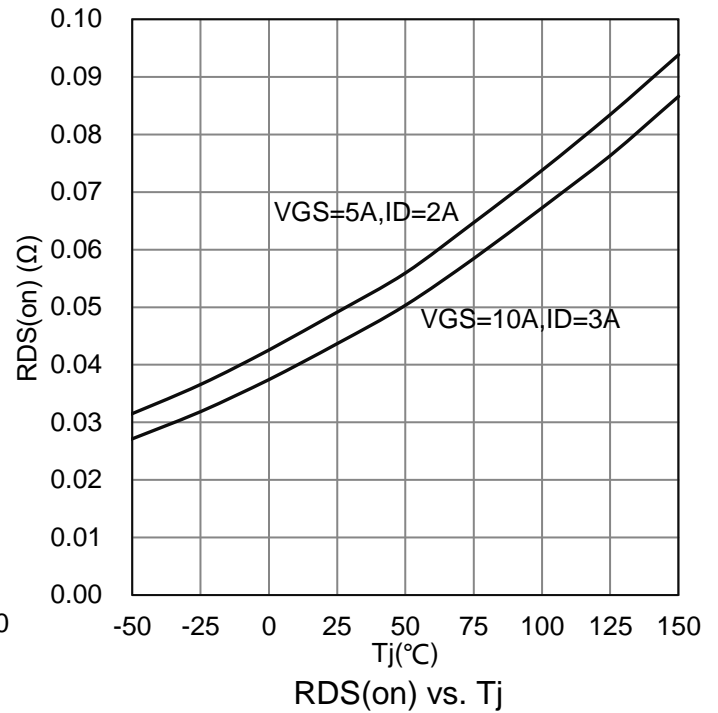
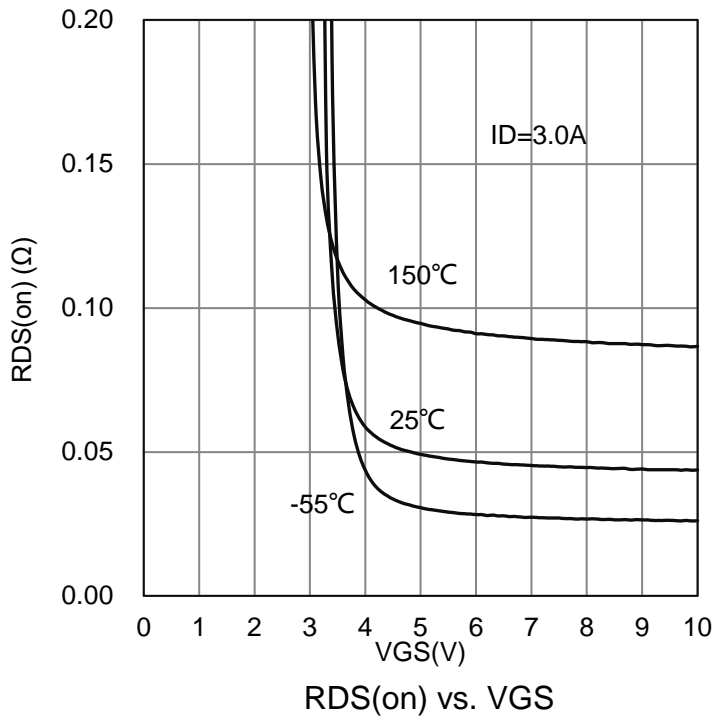
Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>Static</b>					
Drain-Source Breakdown Voltage (VGS = 0, ID = 250μA)	V(BR)DSS	60	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	1	2	3.2	V
Gate-Body Leakage (VDS = 0 V, VGS = ±20 V)	IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS = 48 V, VGS = 0 V) (VDS = 40 V, VGS = 0 V, TJ = 125°C)	IDSS	-	-	1 25	μA
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 3 A) (VGS = 5 V, ID = 2 A)	RDS(on)	-	-	70 85	mΩ
<b>Dynamic</b>					
Total Gate Charge	(VDS = 30 V, VGS = 10 V, ID = 3A)	Qg	-	14.7	-
Gate-Source Charge		Qgs	-	2	-
Gate-Drain Charge		Qgd	-	4.2	-
Turn-On Delay Time	(VDS = 30V, ID=1A,VGS = 10V RG = 6 Ω)	td(on)	-	4.6	-
Rise Time		tr	-	2.2	-
Turn-Off Delay Time		td(off)	-	23	-
Fall Time		tf	-	5.6	-
Input Capacitance	(VDS = 30 V, VGS = 0 V, f = 1 MHz)	Ciss	-	600	-
Output Capacitance		Coss	-	40	-
Reverse Transfer Capacitance		Crss	-	34	-
Gate-Resistance (VGS = 0 V, VDS=0V,f=1MHz)	Rg	-	1.1	-	Ω

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

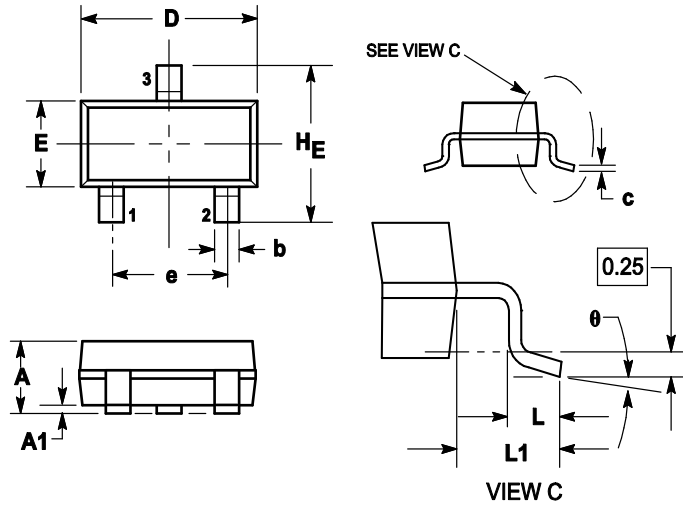
**7. ELECTRICAL CHARACTERISTICS CURVES**



**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



### 8. OUTLINE AND DIMENSIONS

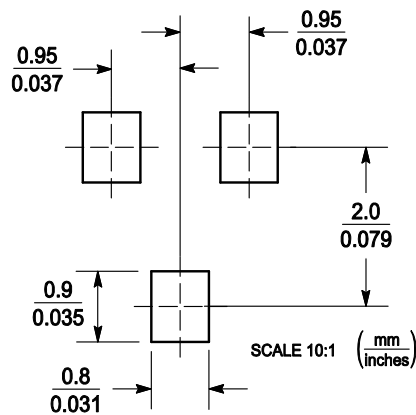


Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

### 9. SOLDERING FOOTPRINT



## **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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