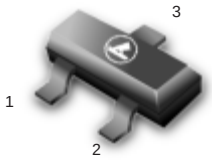
60V N-Channel Enhancement-Mode MOSFET

FEATURES

- $R_{DS(ON)}$ ≦100mΩ@V_{GS}=10V
- $R_{DS(ON)}$ ≦130mΩ@V_{GS}=4.5V
- $R_{DS(ON)}$ ≦200mΩ@V_{GS}=3.3V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- Capable doing Cu wire bonding
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

LN2308LT1G
S-LN2308LT1G



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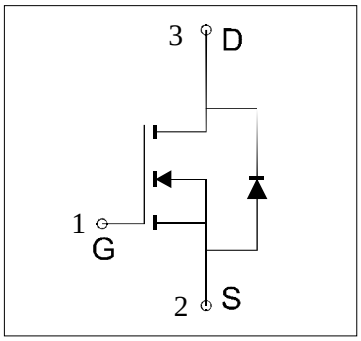

APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- Load Switch
- DSC

Ordering Information

Device	Marking	Shipping
LN2308LT1G S-LN2308LT1G	N08	3000/Tape&Reel
LN2308LT3G S-LN2308LT3G	N08	10000/Tape&Reel

Absolute Maximum Ratings (T_A=25℃ Unless Otherwise Noted)

Parameter		Symbol	Limit		Unit
Drain-Source Voltage		V_{DSS}	60		V
Gate-Source Voltage		V_{GSS}	±20		V
Continuous Drain Current(tJ=150℃)	T_A=25℃	I_D	2.6		A
	T_A=70℃		1.8		
Pulsed Drain Current		I_{DM}	8		
Maximum Body-Diode Continuous Current		I_S	1.6		A
Maximum Power Dissipation	T_A=25℃	P_D	0.7		W
	T_A=70℃		0.45		
Operating Junction Temperature		T_J	150		℃
Maximum Junction-to-Ambient		R_{thJA}	T≦10 sec	150	℃/W
			Steady State	175	
Thermal Resistance-Junction to Case		$R_{\theta JC}$	120		℃/W

*The device mounted on 1in^2 FR4 board with 2 oz copper

Electrical Characteristics (T_a=25℃ Unless Otherwise Specified)

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0, I_D=250μA	60			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1		3	V
I_{GSS}	Gate Body Leakage	V_{DS}=0V, V_{GS}=±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=60V, V_{GS}=0V			1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D= 2.6A		82	100	mΩ
		V_{GS}=4.5V, I_D= 2.1A		96	130	
		V_{GS}=3.3V, I_D= 1.8A		139	200	
V_{SD}	Diode Forward Voltage	I_S=1.0A, V_{GS}=0V		0.8	1.2	V
DYNAMIC						
Qg	Total Gate Charge	V_{DS}=30V, V_{GS}=10V, I_D=2.6A		12		nC
Qg	Total Gate Charge	V_{DS}=30V, V_{GS}=4.5V, I_D=2.6A		6.5		
Qgs	Gate-Source Charge			2.2		
Qgd	Gate-Drain Charge			2.7		
Ciss	Input capacitance	V_{DS}=30V, V_{GS}=0V, f=1MHz		350		pF
Coss	Output Capacitance			40		
Crss	Reverse Transfer Capacitance			12		
Rg	Gate Resistance	V_{DS}=0V, V_{GS}=0V, f=1MHz		0.7		Ω
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=20V, R_L =20Ω I_D=1A, V_{GEN}=10V R_G=1Ω		10		ns
t_r	Turn-On Rise Time			11		
$t_{d(off)}$	Turn-Off Delay Time			29		
t_f	Turn-Off Fall Time			3		

Notes: Pulse test; pulse width≦ 300us, duty cycle≦ 2%.

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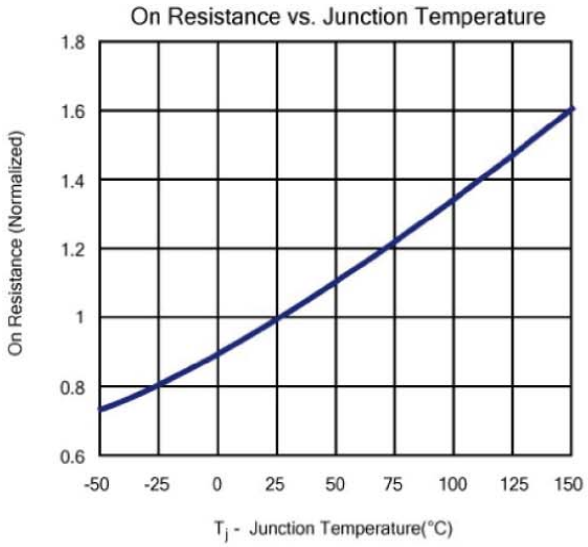
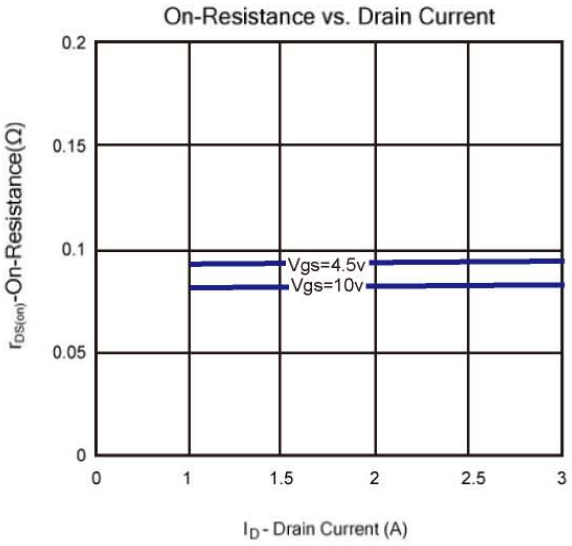
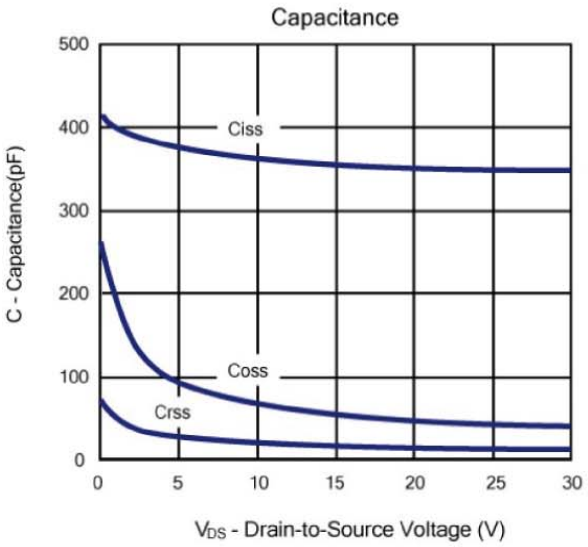
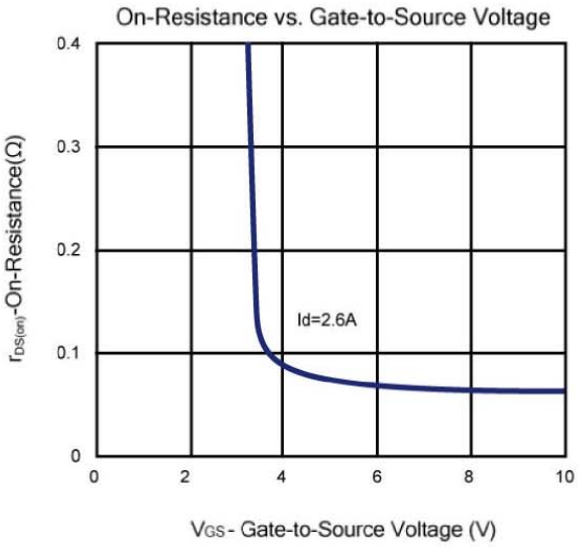
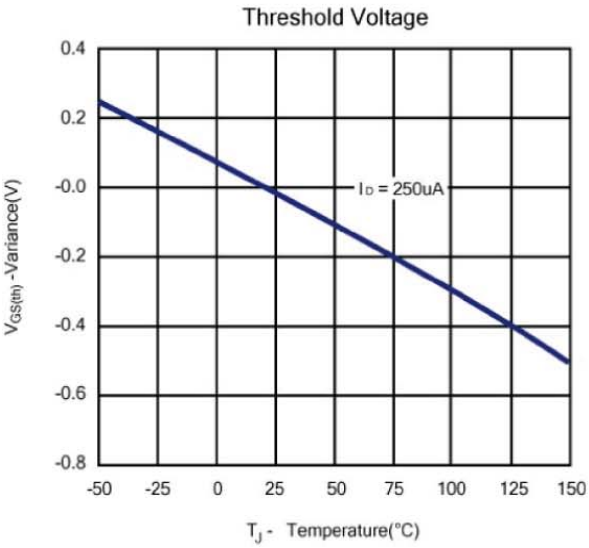
Typical Characteristics (Ta =25℃ Noted)

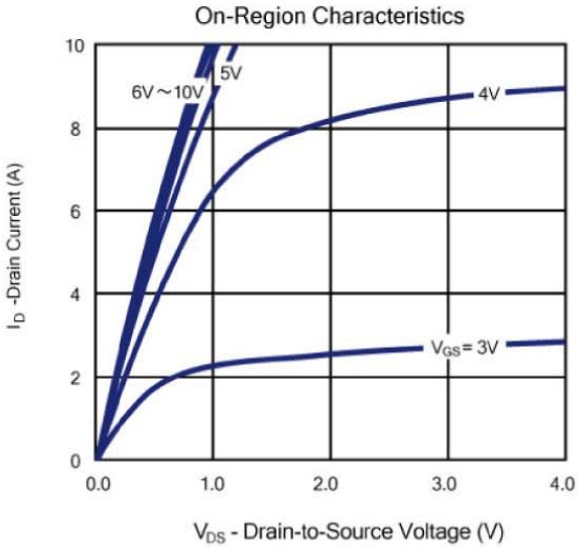












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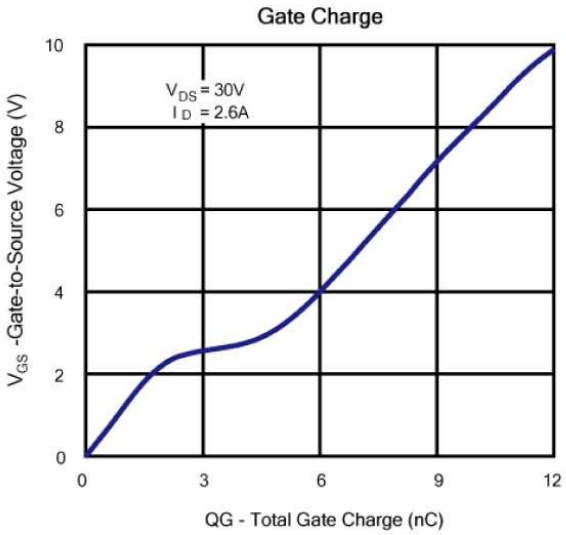

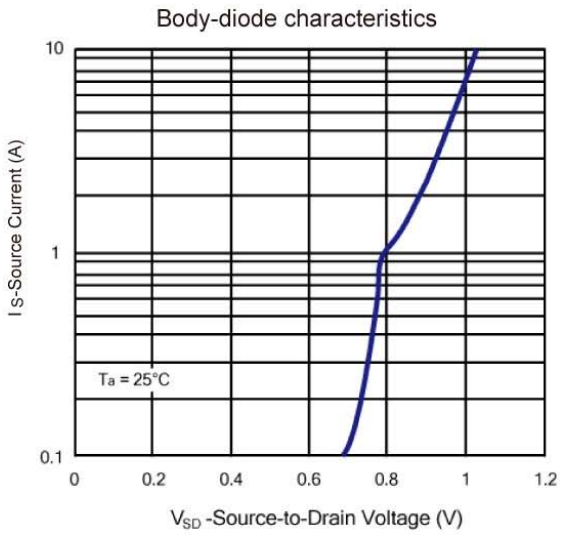

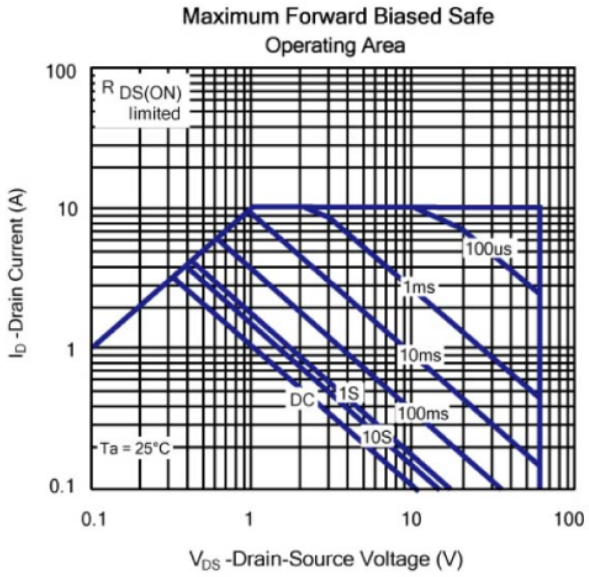

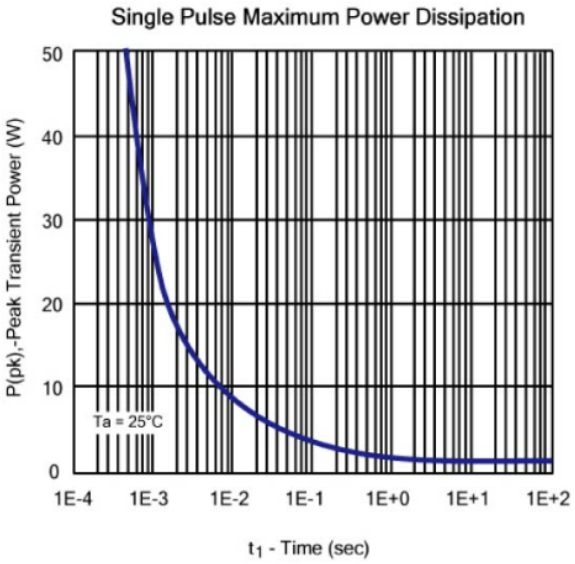

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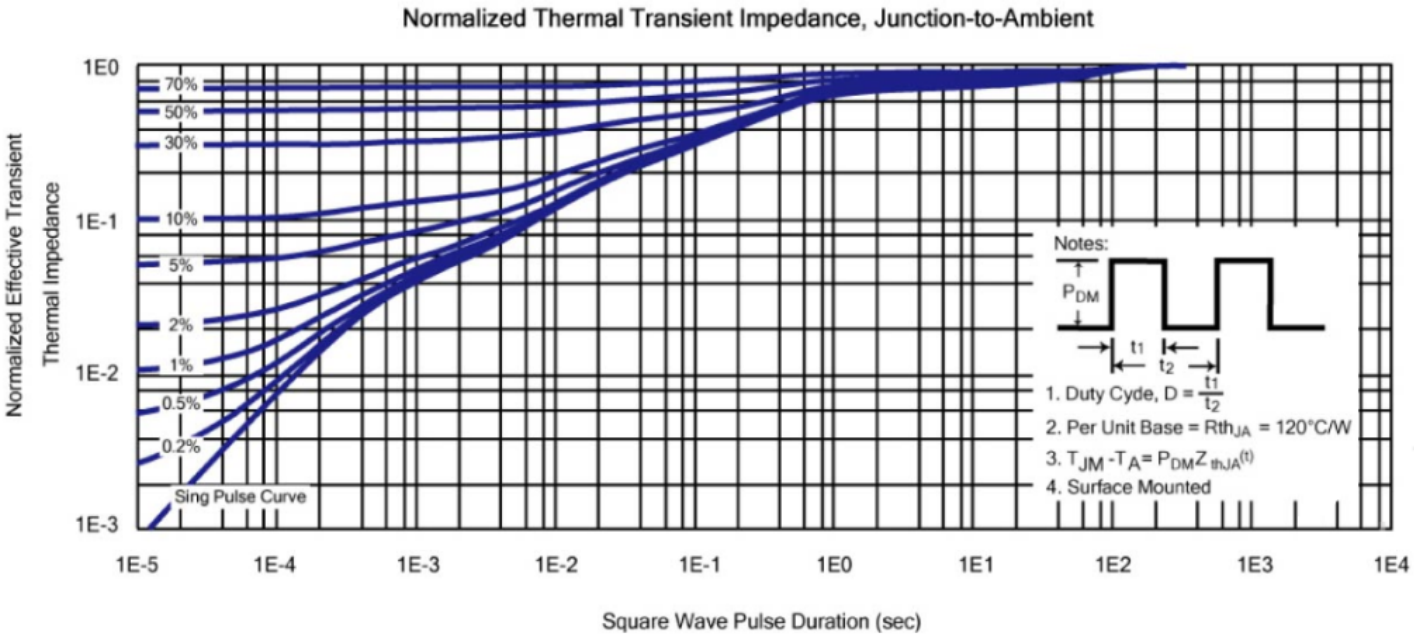

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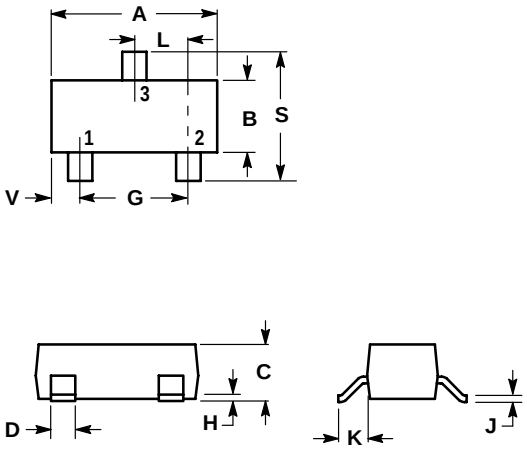

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60