

## 20V N-Channel Enhancement-Mode MOSFET

### FEATURES

- $R_{DS(ON)} \leq 85m\Omega @ V_{GS}=4.5V$
- $R_{DS(ON)} \leq 115m\Omega @ V_{GS}=2.5V$
- $R_{DS(ON)} \leq 135m\Omega @ V_{GS}=1.8V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

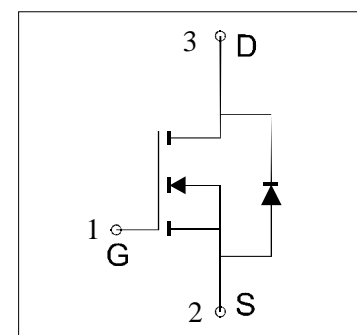
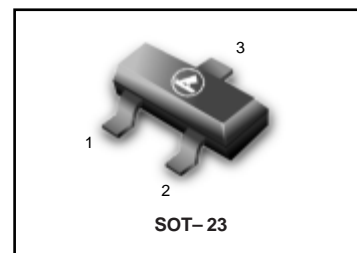
### APPLICATIONS

- Power Management in Notebook
- Portable Equipment
- Load Switch
- DSC

### Ordering Information

Device	Marking	Shipping
LN2302BLT1G S-LN2302BLT1G	02B	3000/Tape&Reel
LN2302BLT3G S-LN2302BLT3G	02B	10000/Tape&Reel

LN2302BLT1G  
S-LN2302BLT1G



### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DSS}$	20	V
Gate-Source Voltage	$V_{GSS}$	$\pm 8$	V
Continuous Drain Current ( $t_J=150^\circ\text{C}$ )	$I_D$	$T_A=25^\circ\text{C}$ 2.8	A
		$T_A=70^\circ\text{C}$ 2.2	
Pulsed Drain Current	$I_{DM}$	10	
Maximum Body-Diode Continuous Current	$I_S$	1.6	A
Maximum Power Dissipation	$P_D$	$T_A=25^\circ\text{C}$ 1.25	W
		$T_A=70^\circ\text{C}$ 0.8	
Operating Junction Temperature	$T_J$	150	$^\circ\text{C}$
Maximum Junction-to-Ambient	$R_{thJA}$	$T \leq 10 \text{ sec}$	77
		Steady State	105
Thermal Resistance-Junction to Case	$R_{\theta JC}$	70	$^\circ\text{C/W}$

\*The device mounted on  $1\text{in}^2$  FR4 board with 2 oz copper

## LN2302BLT1G , S-LN2302BLT1G

## ELECTRICAL CHARACTERISTICS

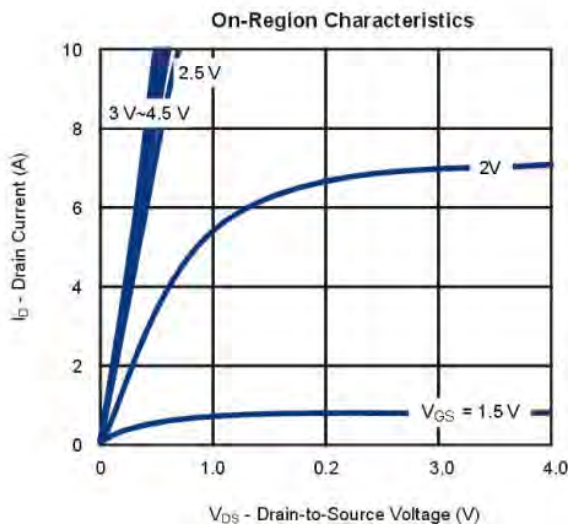
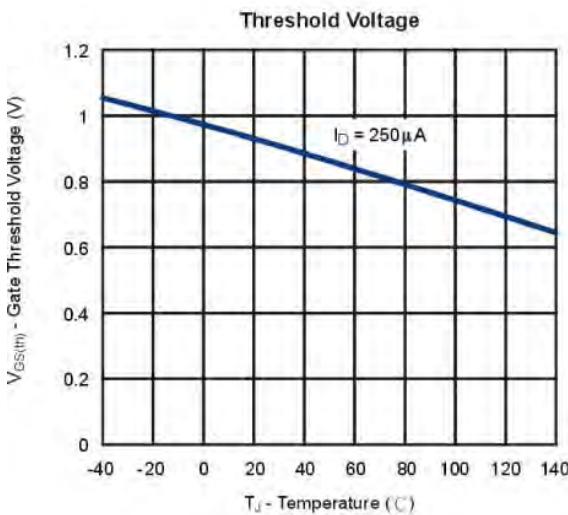
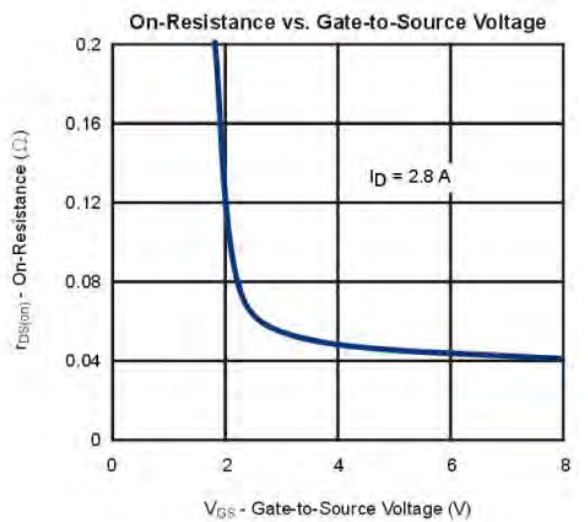
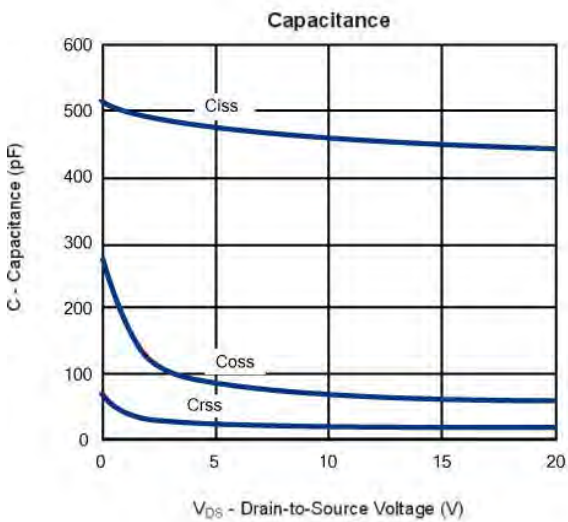
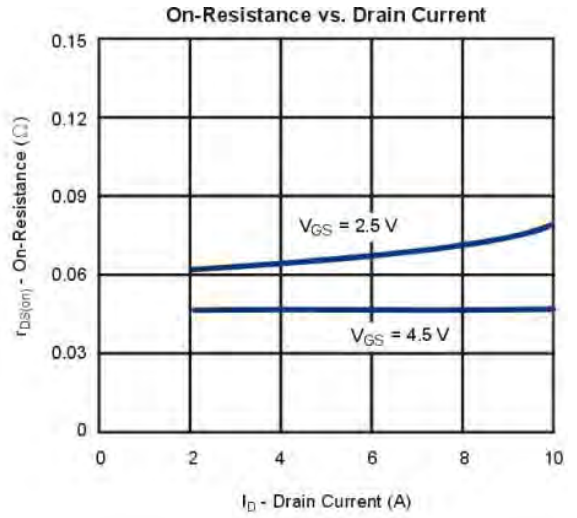
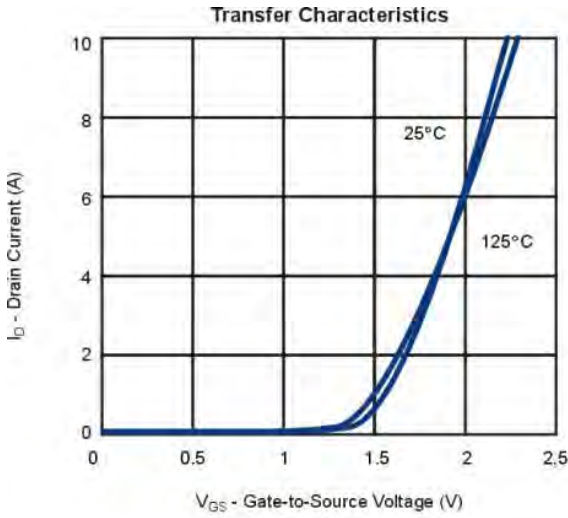
Symbol	Parameter	Limit	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250 \mu A$	20			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250 \mu A$	0.5	0.75	1.0	
$I_{GSS}$	Gate-Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 8V$			$\pm 100$	nA
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=20V, V_{GS}=0V$			1	$\mu A$
		$V_{DS}=20V, V_{GS}=0V$ $T_J=55^\circ C$			10	
$I_{D(ON)}$	On-State Drain Current <sup>a</sup>	$V_{DS} \geq 5V, V_{GS}=4.5V$	6			A
		$V_{DS} \geq 5V, V_{GS}=2.5V$	4			
$R_{DS(ON)}$	Drain-Source On-Resistance	$V_{GS}=4.5V, I_D=2.8A$		55	85	m $\Omega$
		$V_{GS}=2.5V, I_D=2.5A$		65	115	
		$V_{GS}=1.8V, I_D=2.2A$		80	130	
$V_{SD}$	Diode Forward Voltage	$I_S=1A, V_{GS}=0V$		0.75	1.2	V
<b>DYNAMIC PARAMETERS</b>						
$Q_g$	Total Gate Charge	$V_{DS}=10V, V_{GS}=4.5V, I_D=2.8A$		9		nC
$Q_{gs}$	Gate-Source Charge			2.2		
$Q_{gd}$	Gate-Drain Charge			3		
$C_{iss}$	Input Capacitance	$V_{DS}=10V, V_{GS}=0V, f=1MHz$		450		pF
$C_{oss}$	Output Capacitance			72		
$C_{rss}$	Reverse Transfer Capacitance			22		
$t_{d(on)}$	Turn-On Delay Time	$V_{DD}=10V, R_L=10\Omega$ $V_{GEN}=4.5\Omega, R_G=6\Omega$		9		ns
$t_r$	Rise Time			23		
$t_{d(off)}$	Turn-Off Delay Time			38		
$t_f$	Fall Time			3		

Notes:

 a. Pulse test; pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$

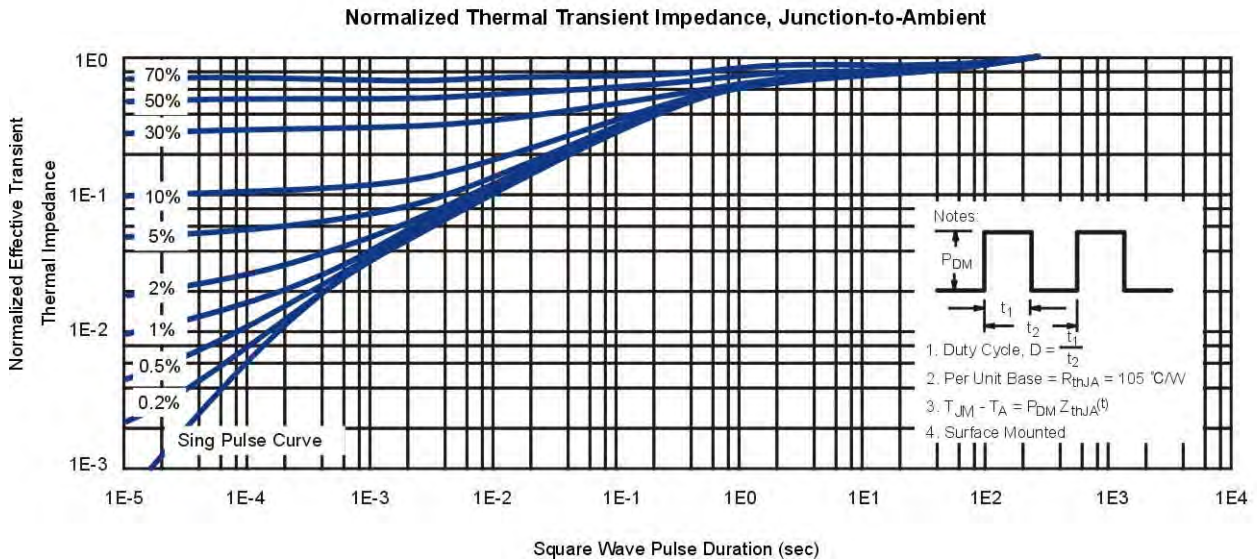
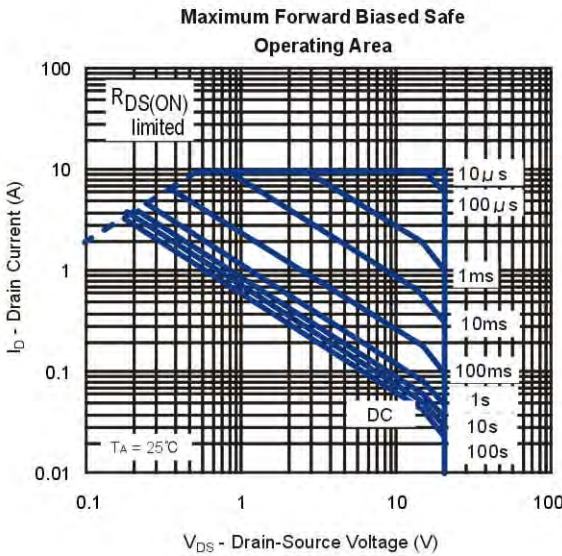
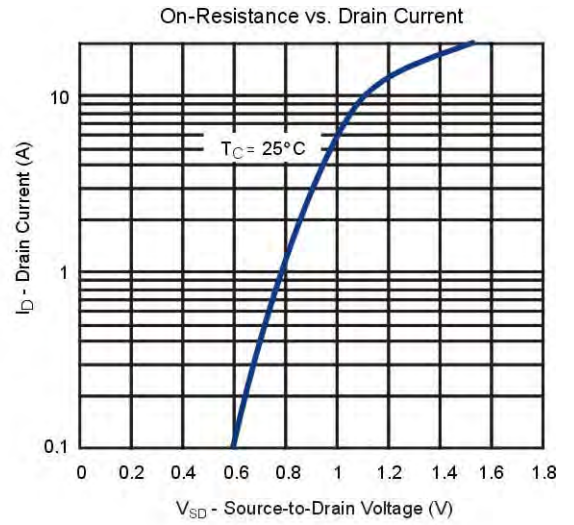
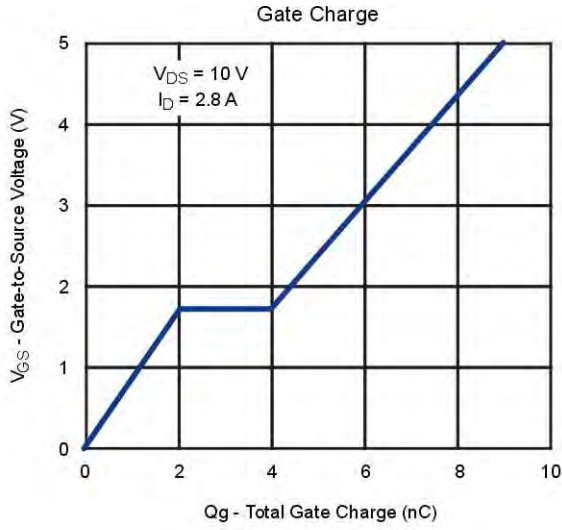
Typical Characteristics (T<sub>J</sub> =25°C Noted)

LN2302BLT1G , S-LN2302BLT1G



LN2302BLT1G , S-LN2302BLT1G

Typical Characteristics (T<sub>J</sub> = 25°C Noted)





## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [MOSFET](#) category:*

*Click to view products by [Leshan](#) manufacturer:*

Other Similar products are found below :

[614233C](#) [648584F](#) [FDPF9N50NZ](#) [IRFD120](#) [IRFF430](#) [JANTX2N5237](#) [2N7000](#) [FCA20N60\\_F109](#) [FDZ595PZ](#) [2SK2267\(Q\)](#) [2SK2545\(Q,T\)](#)  
[405094E](#) [423220D](#) [MIC4420CM-TR](#) [VN1206L](#) [614234A](#) [715780A](#) [SSM6J414TU,LF\(T](#) [751625C](#) [PSMN4R2-30MLD](#)  
[TK31J60W5,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [FCAB21350L1](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#)  
[NTE2384](#) [NTE2969](#) [NTE6400A](#) [DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [SSM6P54TU,LF](#) [DMP22D4UFO-7B](#)  
[IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#) [STF5N65M6](#) [STU5N65M6](#) [C3M0021120D](#) [DMN13M9UCA6-7](#)  
[BSS340NWH6327XTSA1](#) [MCM3400A-TP](#) [DMTH10H4M6SPS-13](#) [IPS60R1K0PFD7SAKMA1](#) [IPS60R360PFD7SAKMA1](#)  
[IPS60R600PFD7SAKMA1](#) [IPS60R210PFD7SAKMA1](#) [DMN2990UFB-7B](#)