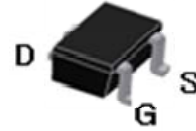


N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV_{DSS}	20V
$R_{DS(on)} (MAX.)$	11.5m Ω
I_D	8A



Pb-Free Lead Plating & Halogen Free



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	8	A
	$T_A = 70\text{ }^{\circ}\text{C}$		6	
Pulsed Drain Current ¹		I_{DM}	32	
Power Dissipation	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	1.25	W
	$T_A = 70\text{ }^{\circ}\text{C}$		0.8	
Operating Junction & Storage Temperature Range		T_{j}, T_{stg}	-55 to 150	$^{\circ}\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNIT
Junction-to-Ambient	$R_{\theta JA}$		100	$^{\circ}\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

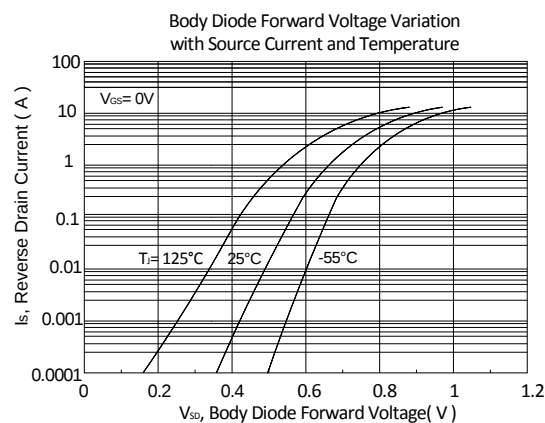
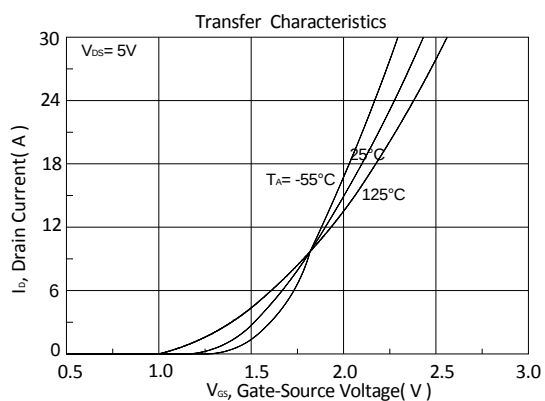
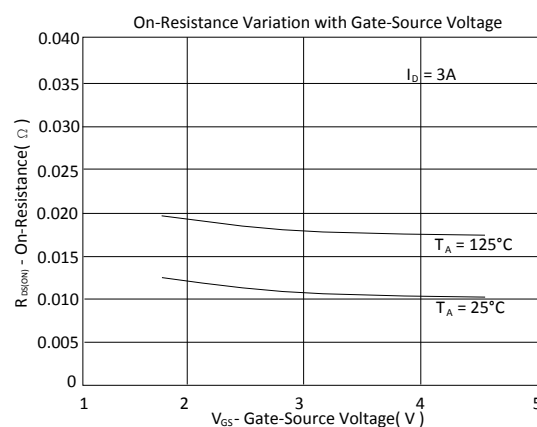
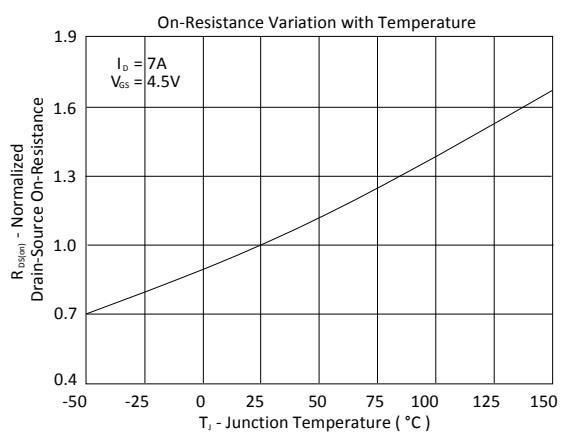
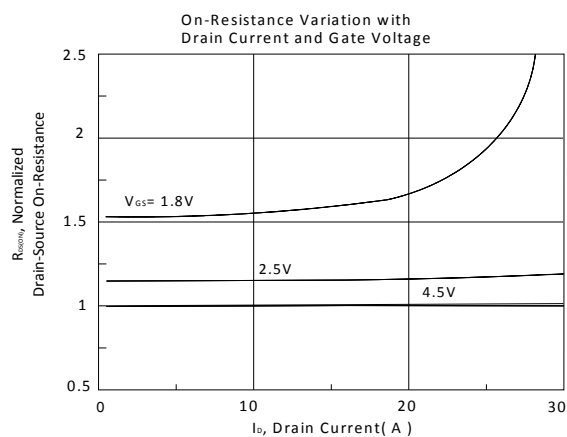
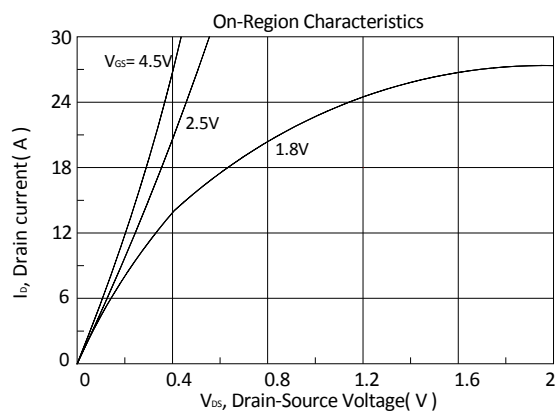
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.4	0.75	1.2	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±12V			±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16V, V _{GS} = 0V			1	μA
		V _{DS} = 16V, V _{GS} = 0V, T _J = 125 °C			10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 5V, V _{GS} = 4.5V	8			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 7A		10.1	11.5	mΩ
		V _{GS} = 2.5V, I _D = 6A		11.8	13.5	
		V _{GS} = 1.8V, I _D = 3A		15	18	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 7A		10		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 10V, f = 1MHz		1297		pF
Output Capacitance	C _{oss}			190		
Reverse Transfer Capacitance	C _{rss}			172		
Gate Resistance	R _g	V _{GS} = 15mV, V _{DS} = 0V, f = 1MHz		1.5		Ω
Total Gate Charge ^{1,2}	Q _g	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 7A		17.1		nC
Gate-Source Charge ^{1,2}	Q _{gs}			2.1		
Gate-Drain Charge ^{1,2}	Q _{gd}			5.1		
Turn-On Delay Time ^{1,2}	t _{d(on)}	V _{DS} = 10V, I _D = 1A, V _{GS} = 4.5V, R _{GS} = 6Ω		15		nS
Rise Time ^{1,2}	t _r			20		
Turn-Off Delay Time ^{1,2}	t _{d(off)}			35		
Fall Time ^{1,2}	t _f			22		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _c = 25 °C)						
Continuous Current	I _S				2	A
Pulsed Current ³	I _{SM}				8	
Forward Voltage ¹	V _{SD}	I _F = I _S , V _{GS} = 0V			1.2	V

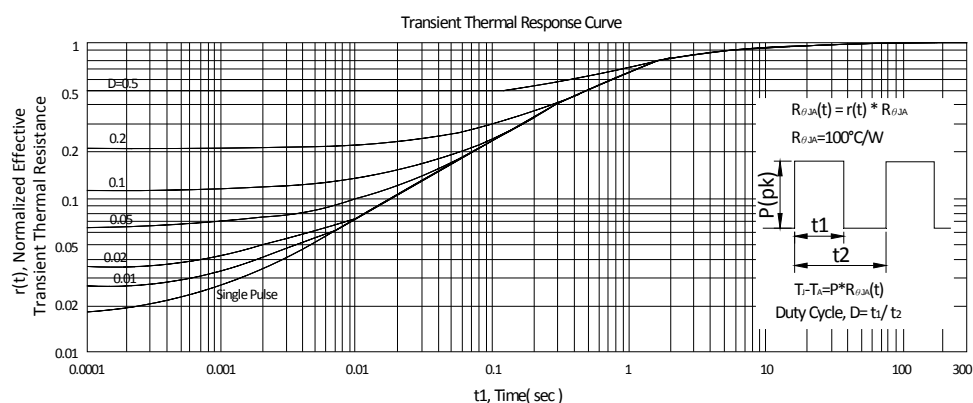
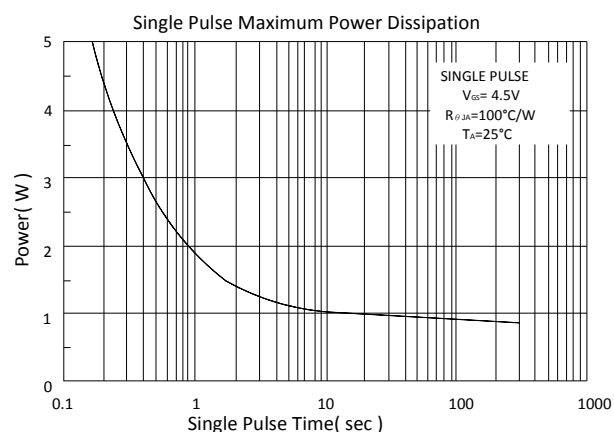
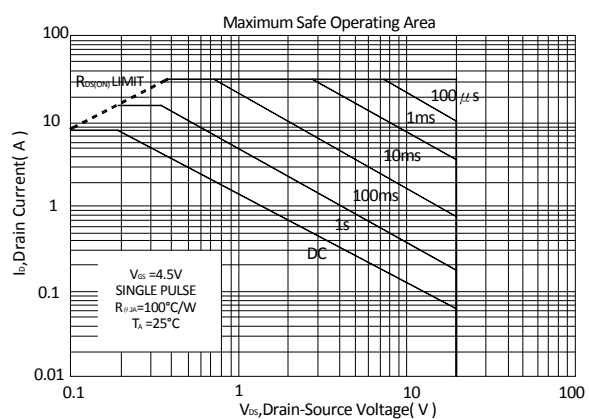
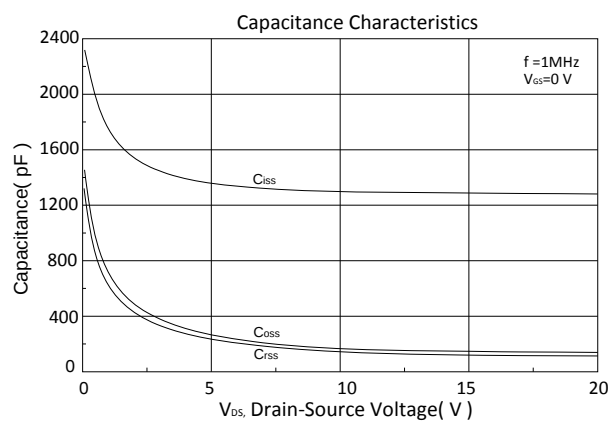
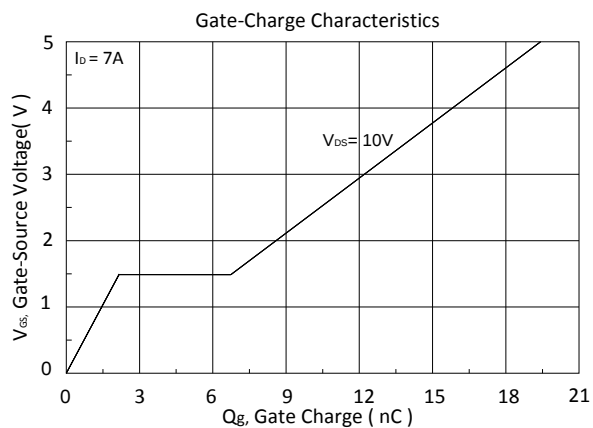
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

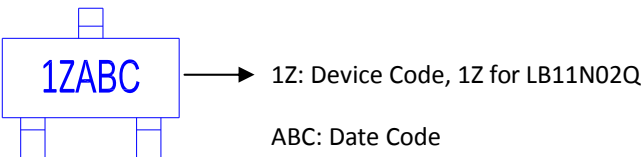
TYPICAL CHARACTERISTICS



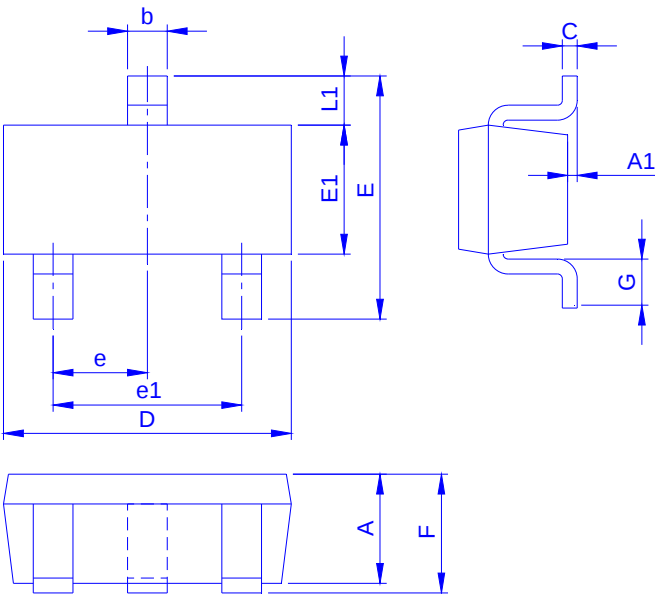


Ordering & Marking
Information:

Device Name: LB11N02Q for SOT-23



Outline Drawing



Dimension in mm

Dimension	A	A1	A2	b	C	D	E	E1	e	e1	F	G	L1
Min.	0.7	0		0.35	0.1	2.8	2.6	1.5	0.9		0.8	0.3	0.55
Typ.						2.9	2.8	1.6	0.95	1.9			
Max.	1.12	0.1		0.5	0.2	3	3	1.7	1		1.2	0.6	0.65

Footprint

