

/ Descriptions

DFN2×2B-6L N MOS
N-Channel Enhancement Mode Field Effect Transistor in a DFN2×2B-6L Plastic Package.

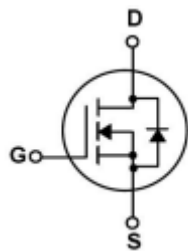
/ Features

$V_{DS} (V) = 20V$ $I_D = 8A$ ($V_{GS} = \pm 12V$)
 $R_{DS(ON)}@10V < 14m\Omega$ (Typ. $12m\Omega$)
 $R_{DS(ON)}@4.5V < 20m\Omega$ (Typ. $15m\Omega$)
HF Product.

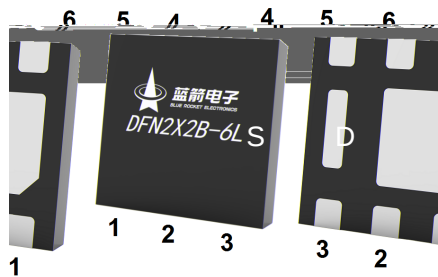
/ Applications

DC/DC
Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

/ Equivalent Circuit



/ Pinning



出脚	定义
Pin1	D
Pin2	D
Pin3	G
Pin4	S
Pin5	D
Pin6	D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Drain Current		I_D	8	A
Gate-Source Voltage		V_{GS}	± 12	V
Avalanche Current		I_{AS}	12	A
Single Pulsed Avalanche Energy		E_{AS}	115	mJ
Power Dissipation		P	2.8	W
Junction Temperature Range		T_j	150	
Storage Temperature Range		T_{stg}	-55~150	
Maximum Junction-to-Ambient	$t \leq 10s$	$R_{\theta JA}$	45	/W
	Steady-State	$R_{\theta JA}$	80	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$	$I_D=250\mu A$	20	22		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V$	$V_{GS}=0V$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 12V$	$V_{DS}=0V$			± 0.1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=8.0A$		12	14	m Ω
		$V_{GS}=4.5V$	$I_D=8.0A$		15	20	m Ω
		$V_{GS}=2.5V$	$I_D=8.0A$		20	35	m Ω
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	0.4	0.6	1.2	V
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$	$I_F=1.0A$		0.7	1.35	V
Signal Source Resistance	R_g	$F=1MHz$			3.3		Ω
Input Capacitance	C_{iss}	$V_{DS}=10V$ $f=1.0MHz$	$V_{GS}=0V$		865		pF
Output Capacitance	C_{oss}				105		
Reverse Transfer Capacitance	C_{rss}				55		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=10V$ $R_L=1.25\Omega$	$V_{GS}=4.5V$ $R_{GEN}=3\Omega$		2.7		ns
Turn-On Rise Time	t_r				3		
Turn-Off Delay Time	$t_{d(off)}$				37		
Turn-Off Fall Time	t_f				7		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	$V_{DS}=10V$ $V_{GS}=4.5V$ $I_D=8A$		12.5		nC
Gate-Source Charge	Q_{gs}			1.2		
Gate-Drain Charge	Q_{gd}			2.7		

/ Electrical Characteristic Curve

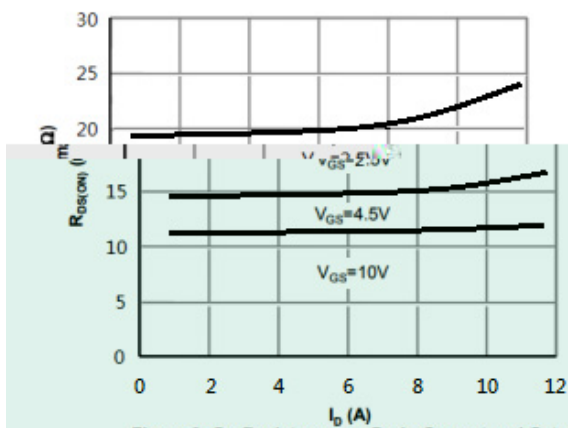
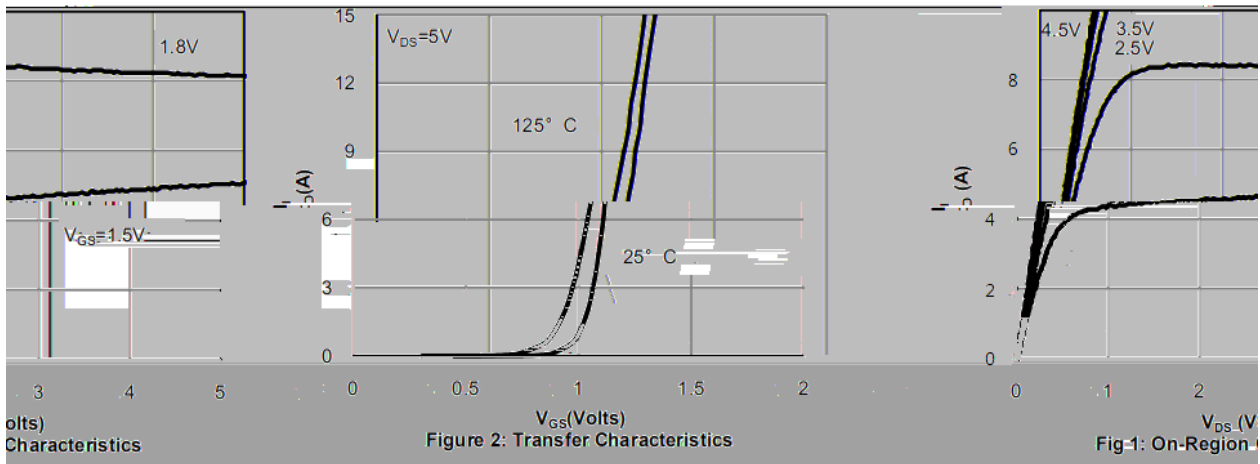


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

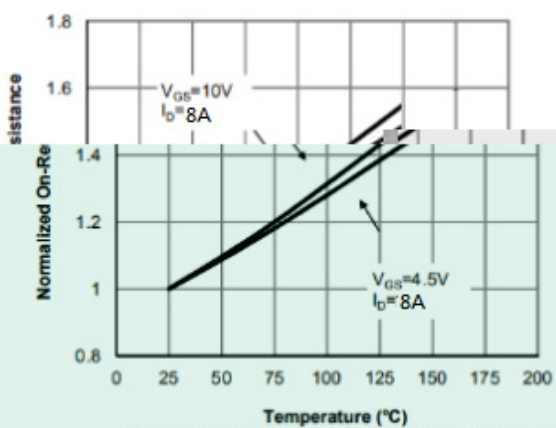
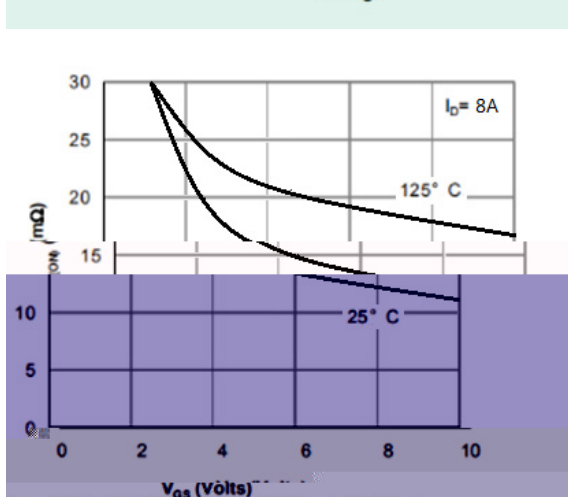


Figure 4: On-Resistance vs. Junction Temperature

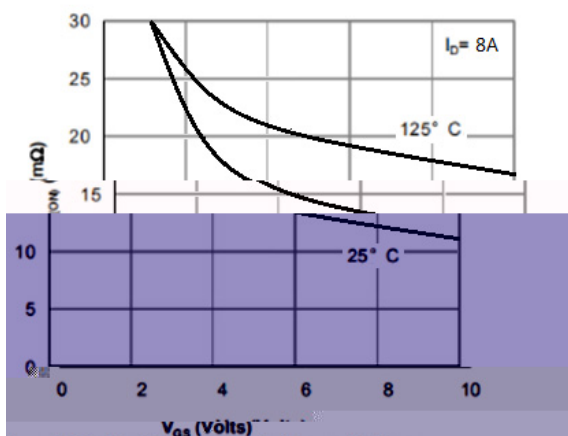


Figure 5: On-Resistance vs. Gate-Source Voltage

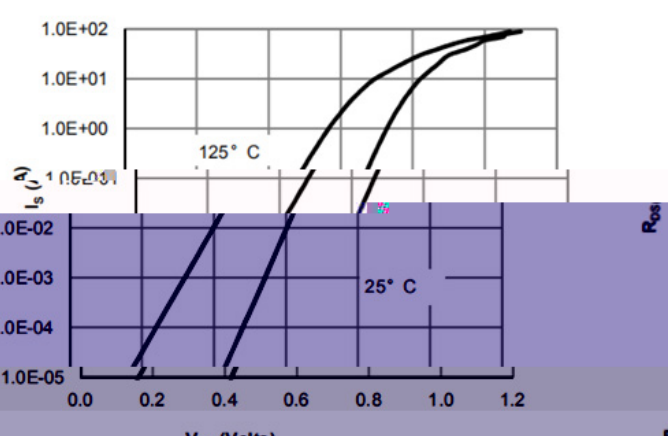


Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

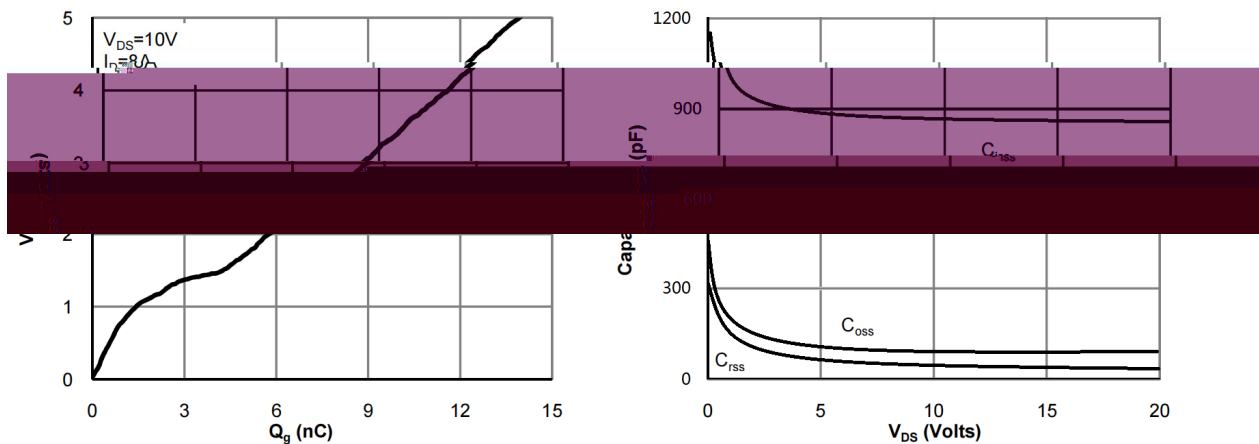


Figure 7: Gate Charge Characteristics Figure 8: Capacitance Characteristics

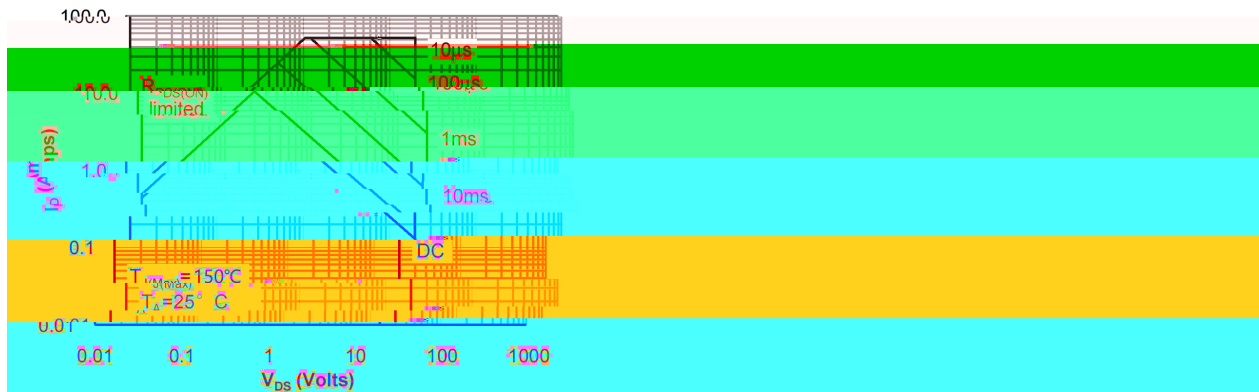


Figure 9: Maximum Forward Biased Safe Operating Area

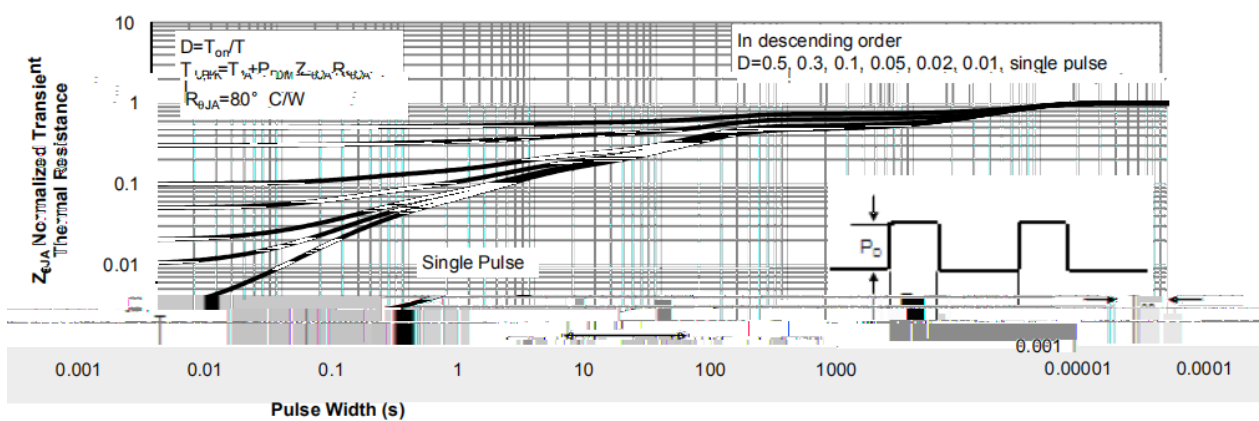
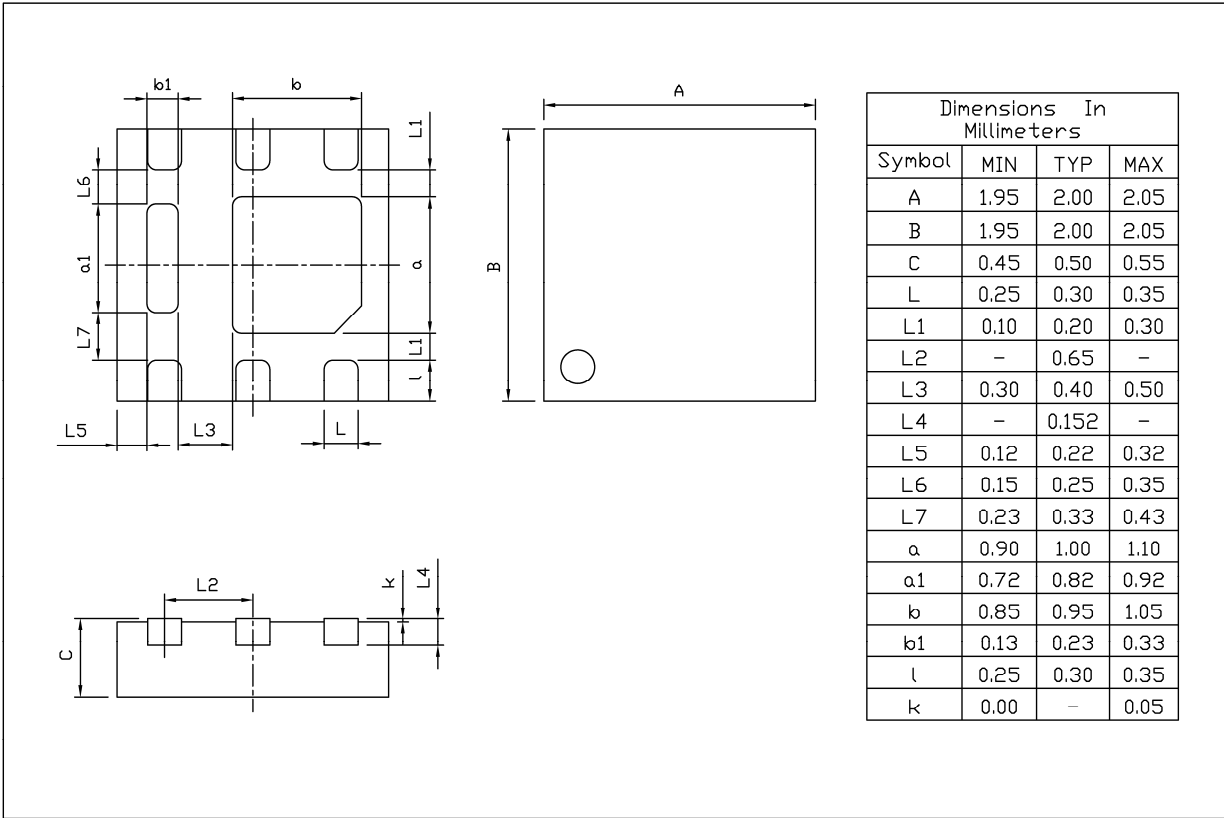


Figure 10: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions

DFN2 X2B-6L-0.5

Unit:mm



Rev.01 202006

/ Marking Instructions



BR

120N02L

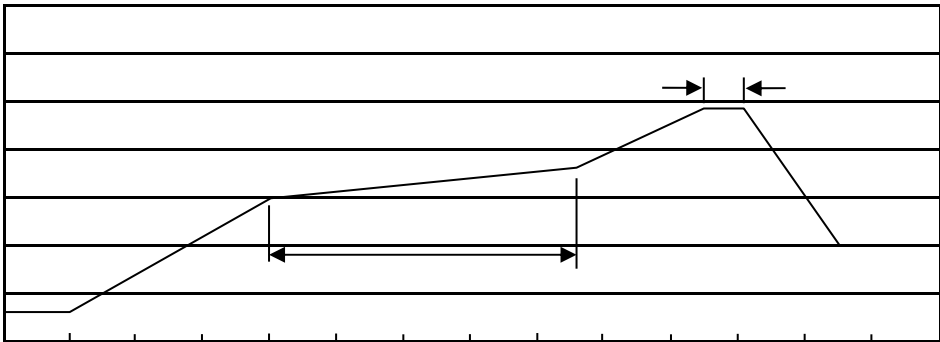
Note:

BR: Company Code

120N02L: Product Type Code

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



- 1

150 180

60 90sec;
- 2

245±5

5±0.5sec;
- 3

2 10 /sec.
- Note:

1.Preheating:150~180 , Time:60~90sec.

2.Peak Temp.:245±5 , Duration:5±0.5sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
DFN2×2B-6L	4,000	10	40,000	4	160,000	7 ×8	210×205×205	445×435×230

/ Notices

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