

/ Descriptions

N-Channel Enhancement Mode Field Effect Transistor in a PDFN3 3A-8L Plastic Package.

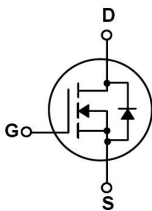
/ Features

$V_{DS} (V) = 30V$
 $I_D = 40 A (V_{GS} = \pm 20V)$
 $R_{DS(ON)}@10V \leq 6mR(Typ.4.7mR)$
HF Product.

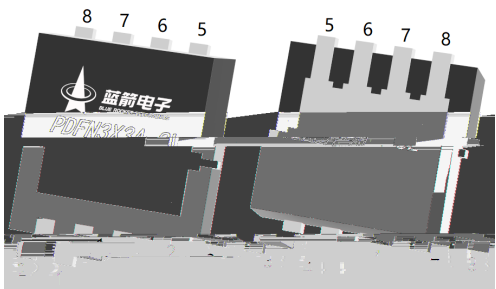
/ Applications

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

/ Equivalent Circuit



/ Pinning



出脚	定义
Pin1	S
Pin2	S
Pin3	S
Pin4	G
Pin5	D
Pin6	D
Pin7	D
Pin8	D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Drain Current		$I_D(T_C=25)$	40	A
Drain Current - Pulsed		I_{DM}	130	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	211	mJ
Avalanche Current		I_{AS}	23	A
Power Dissipation		$P_D(T_C=25)$	29	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	40	/W
Junction-to-Ambient	Steady-State		75	
Junction-to-Case	Steady-State	$R_{\theta JC}$	4.2	

BRCS060N03YB

Rev.B Oct.-2024



DATA SHEET

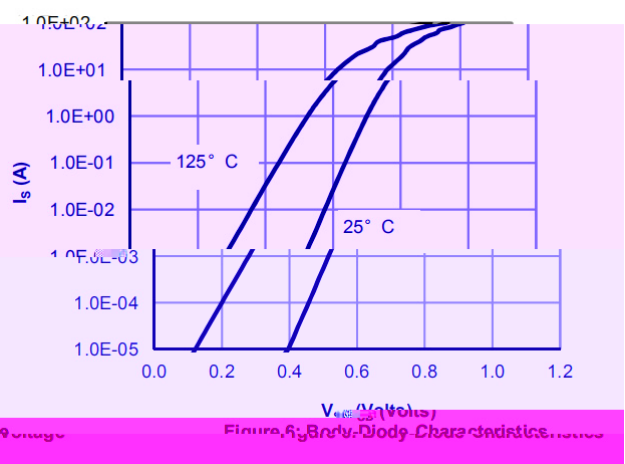
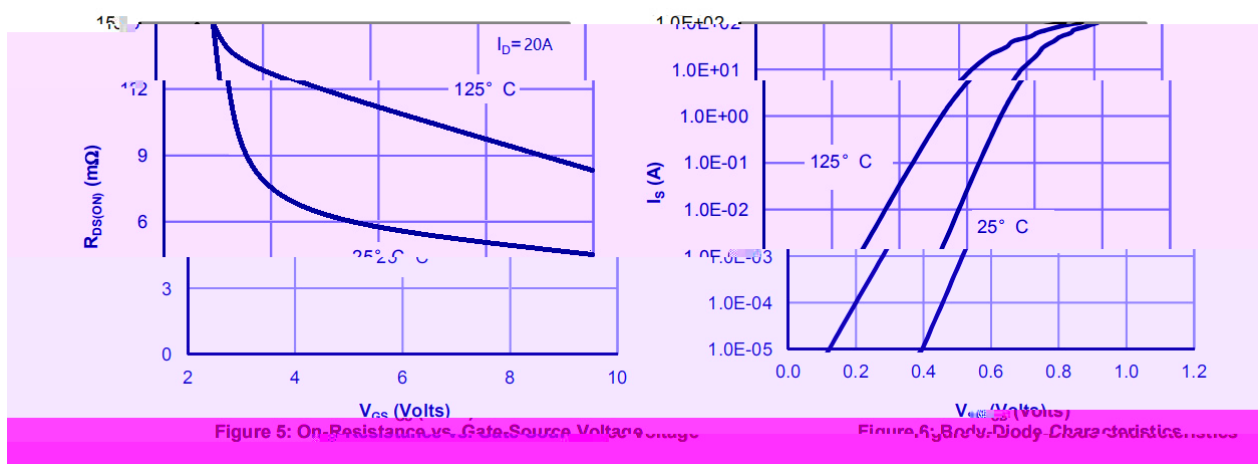
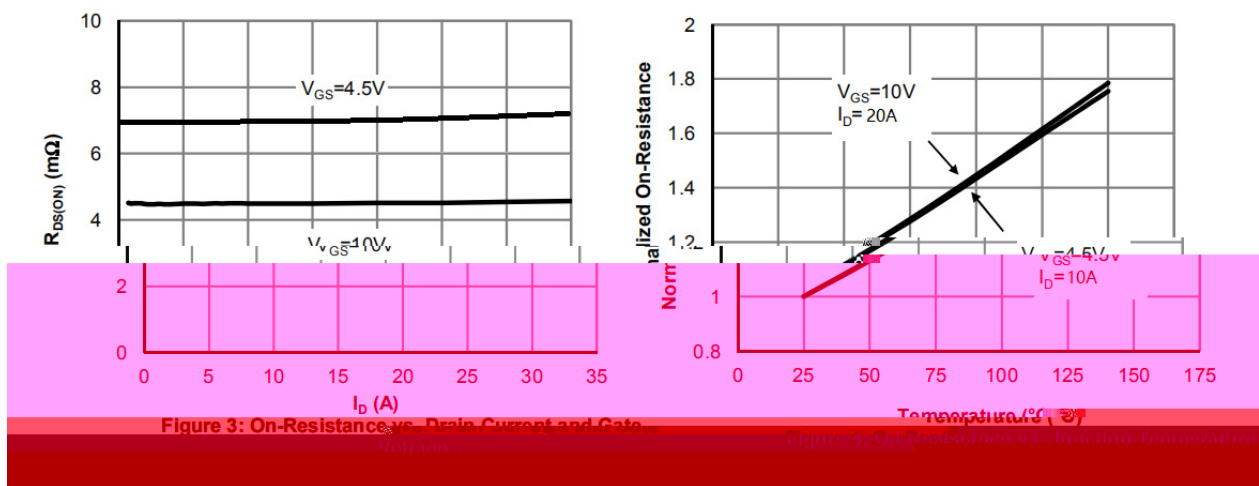
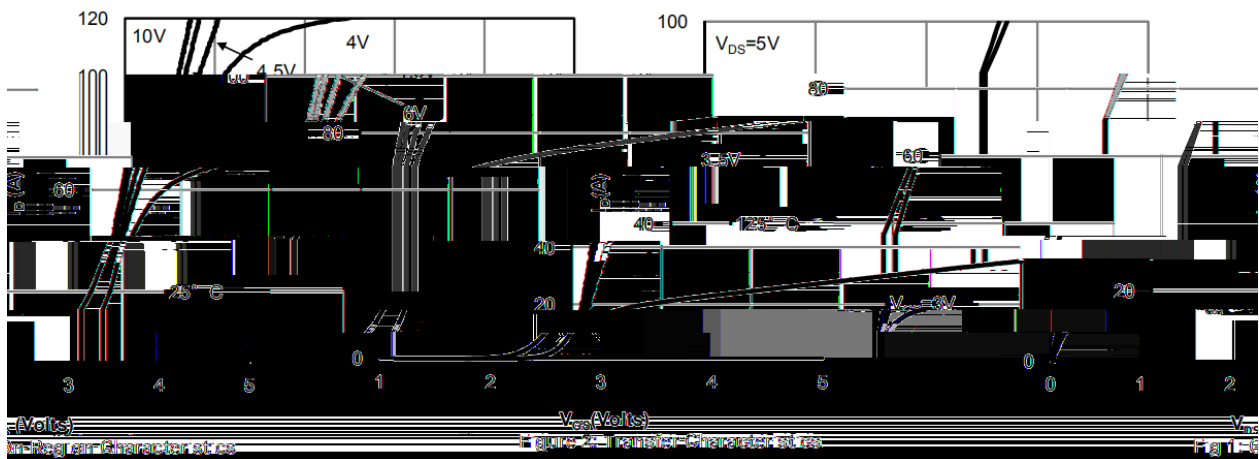
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$	$I_D=250\mu A$	30	32		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$	$V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$	$V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	1.0	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=20A$		4.7	6	m Ω
		$V_{GS}=4.5V$	$I_D=10A$		7.1	9	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$	$I_S=10A$		0.75	1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $f=1.0MHz$	$V_{GS}=0V$		2090		pF
Output Capacitance	C_{oss}				790		
Reverse Transfer Capacitance	C_{rss}				634		
Gate resistance	R_g	$V_{GS}=0V$ $f=1MHz$	$V_{DS}=0V$		1.9		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $I_D=18A$	$V_{DS}=15V$		33		nC
Total Gate Charge	$Q_{g(4.5V)}$				16		
Gate Source Charge	Q_{gs}				5.2		
Gate Drain Charge	Q_{gd}				6.2		

Turn-On Delay Time

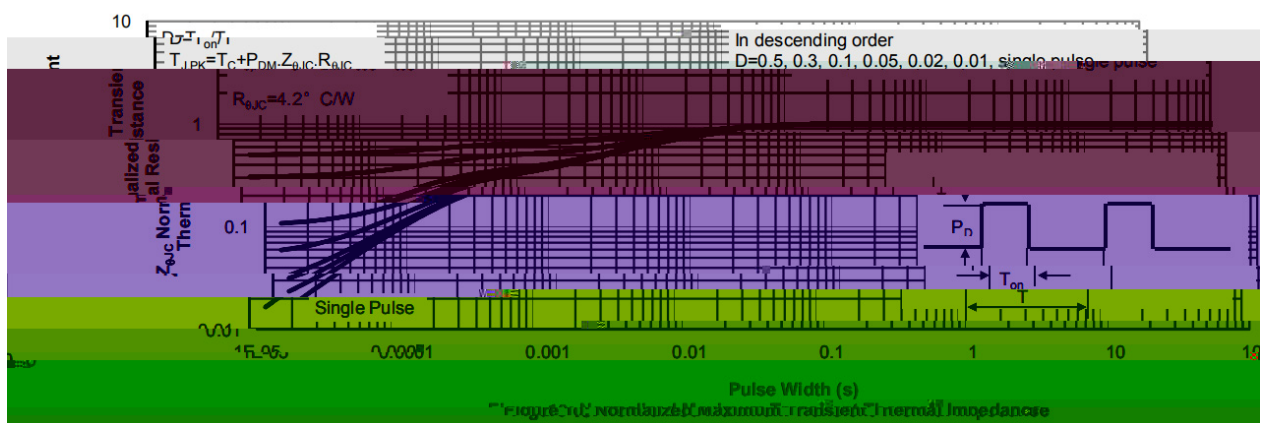
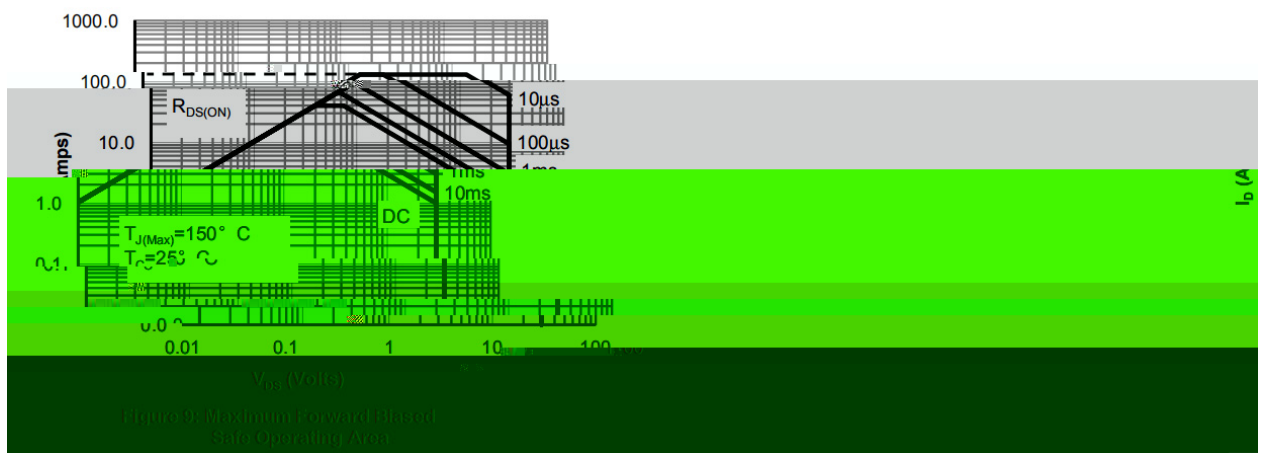
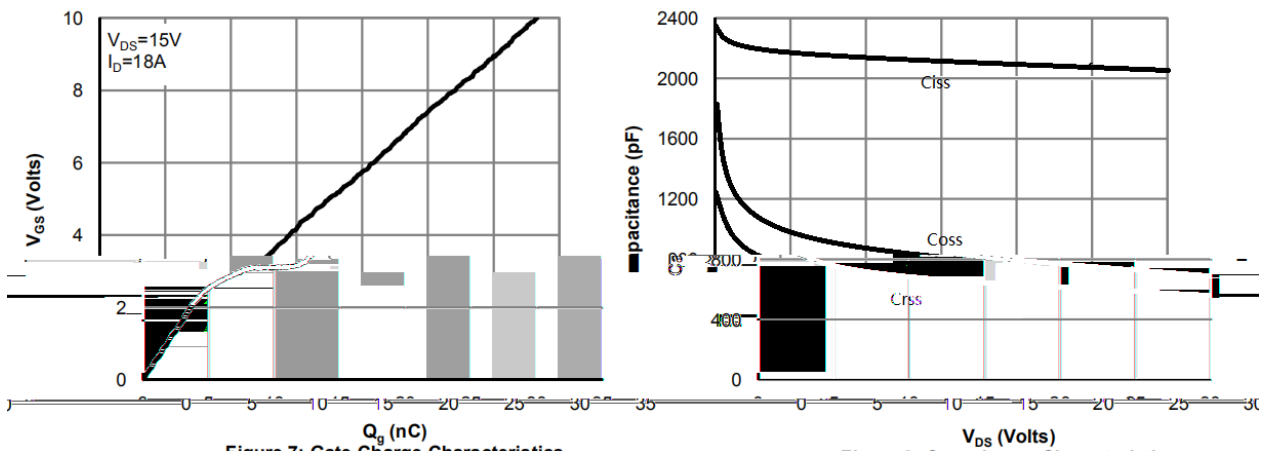
$t_{d(on)}$

V_{DD}

/ Electrical Characteristic Curve



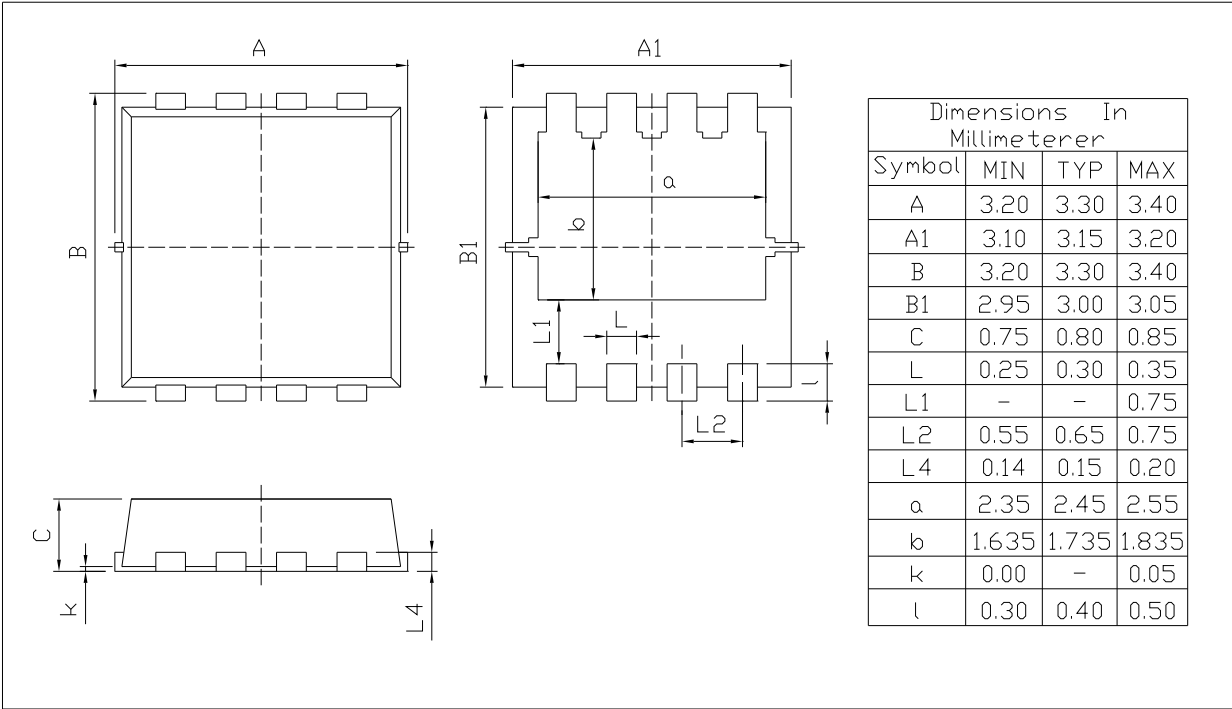
/ Electrical Characteristic Curve



/ Package Dimensions

PDFN3X3A-8L

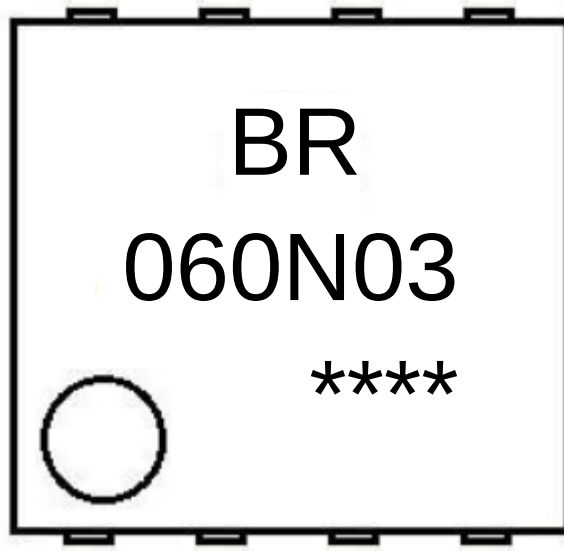
Unit:mm



Rev.00 202011



/ Marking Instructions



BR

060N03

Note:

BR: Company Code

060N03: Product Type Code

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

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



Note:

- 1

150 180

60 90sec;

1.Preheating:150~180 °C , Time:60~90sec.
- 2

245 5

5 0.5sec;

2.Peak Temp.:245 ± 5 °C , Duration:5 ± 0.5sec.
- 3

2 10

/sec.

3. Cooling Speed: 2~10 °C /sec.

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
PDFN3×3A-8L	5,000	2	10,000	6	60,000	13 ×12	360×360×50	380×335×366

/ Notices