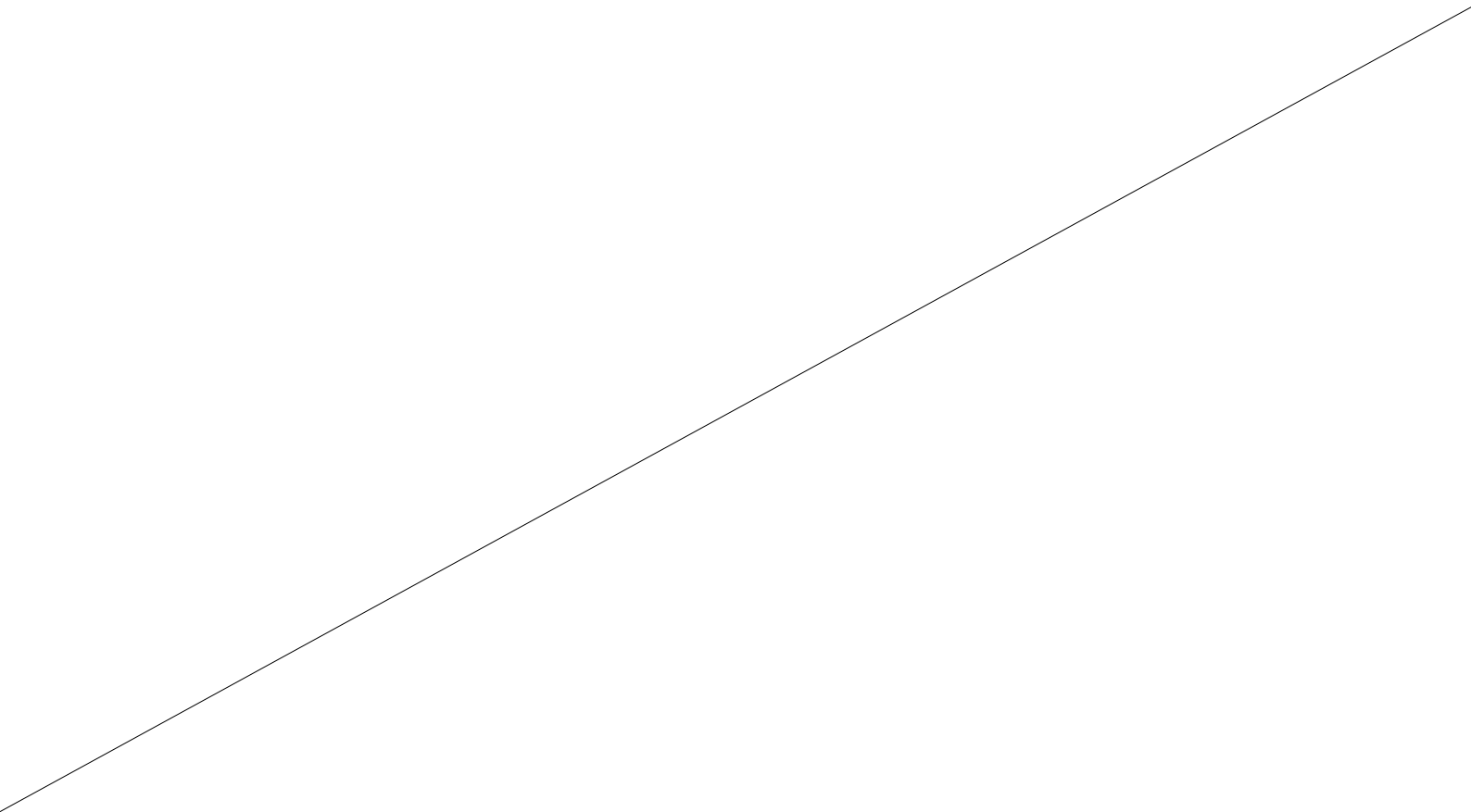


BRCS120N06YBQ

Rev.A Jul.-2022

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/ Descriptions

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

/ Features

$V_{DS} (V) = 60V$

$I_D = 24 A (V_{GS} = \pm 20V)$

$R_{DS(ON)} @ 10V \leq 13mR (Typ. 11.5mR)$

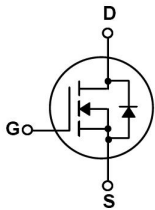
HF Product.

。 Qualified to AEC-Q101 Standards for High Reliability,

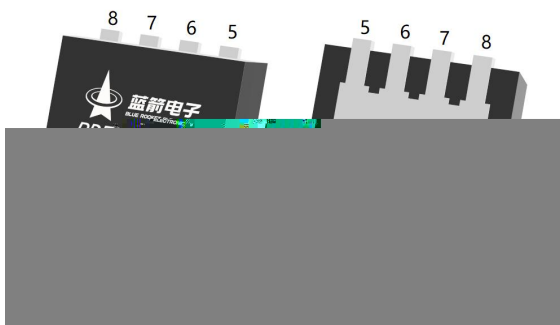
/ Applications

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies, Meet the stringent requirements of automotive applications.

/ 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($T_a=25$)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	60	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	24	A
Drain Current - Pulsed		I_{DM}	90	A
Gate-Source Voltage		V_{GSS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	70	mJ
Avalanche Current		I_{AS}	20	A
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	24	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Junction-to-Ambient	$t \leq 10$	R_{JA}	30	$^\circ\text{C/W}$
Junction-to-Ambient	Steady-State		55	
Junction-to-Case	Steady-State	R_{JC}	5.2	



Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$	$I_D=250\mu A$	60	64		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$	$V_{GS}=0V$			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	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=20A$		11.5	13	m
		$V_{GS}=4.5V$	$I_D=10A$		15.5	18	m
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$	$I_S=1A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $f=1.0MHz$	$V_{GS}=0V$		1010		pF
Output Capacitance	C_{oss}				250		
Reverse Transfer Capacitance	C_{rss}				280		
Gate resistance	R_g	$V_{GS}=0V$ $f=1MHz$	$V_{DS}=0V$		1.5		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $I_D=13A$	$V_{DS}=30V$		13.5		nC
Total Gate Charge	$Q_{g(4.5V)}$				6.5		
Gate Source Charge	Q_{gs}				2.5		
Gate Drain Charge	Q_{gd}				3.0		

Turn-On Det

/ Electrical Characteristic Curve

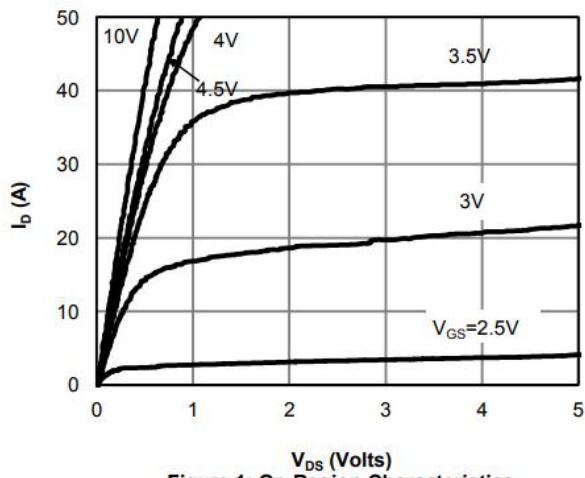


Figure 1: On-Region Characteristics

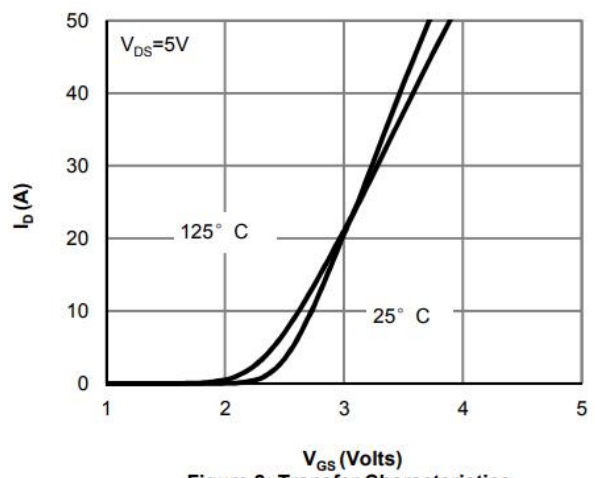
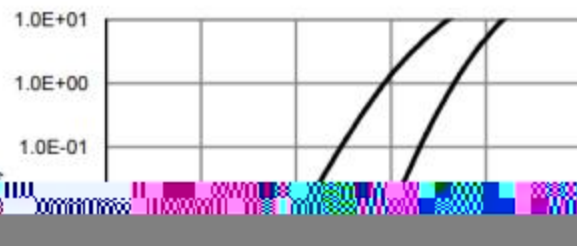
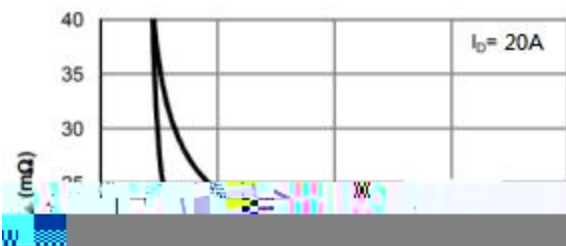
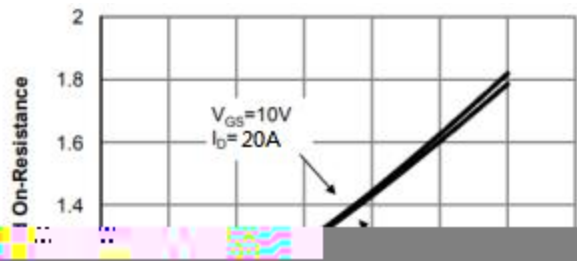
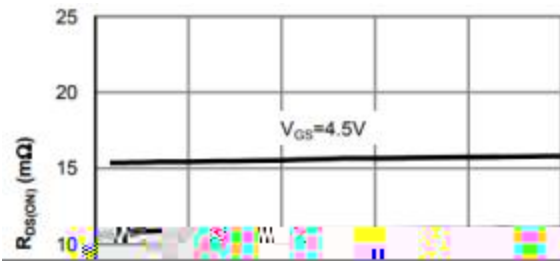
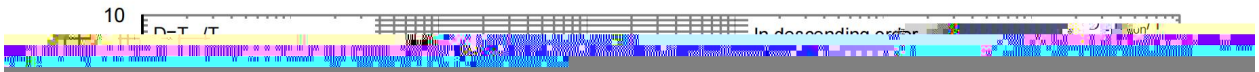
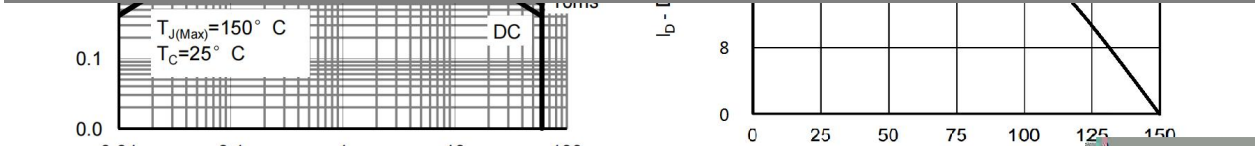
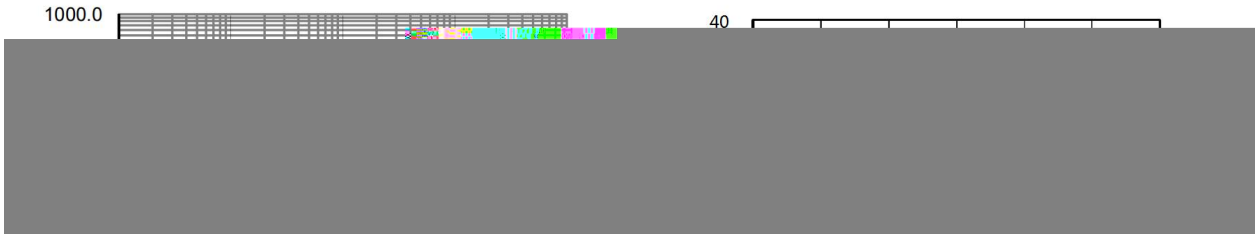


Figure 2: Transfer Characteristics





/ Electrical Characteristic Curve

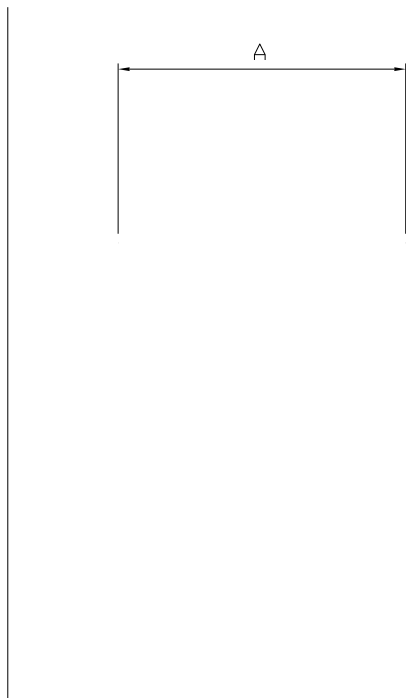




/ Package Dimensions

PDFN3X3A-8L

Unit:mm



Rev.00 20201



/ Marking Instructions

BR Q
120N06

BR

Q

120N06

Note:

BR: Company Code

Q: Automobile halogen-free product Code

120N06: Product Type Code

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



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

说明： **热** **热**

Note:

1、预热温度 150~200℃，时间 60~120sec;

1.Preheating:150~200℃, Time:60~120sec.

2、峰值温度 255±5℃，时