

/ Descriptions

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

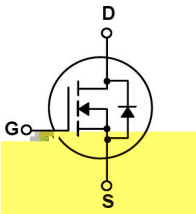
/ Features

$V_{DS} (V) = 40V$ $I_D = 57A (V_{GS} = \pm 20V)$
 $R_{DS(ON)}@10V \ 5mR(Typ.4.5mR)$
 $R_{DS(ON)}@4.5V \ 10mR(Typ.6.2mR)$
AEC-Q101 Qualified to AEC-Q101 Standards for High Reliability,
HF Product.

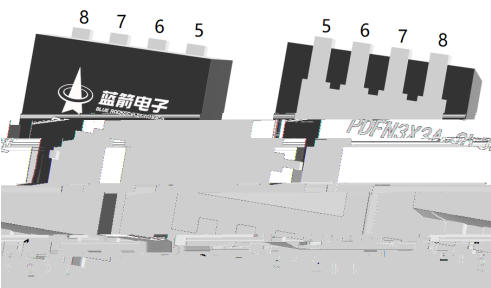
/ Applications

Load Switch Applications,Battery Power Management, 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(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Drain Current		$I_D(T_c=25)$	57	A
Drain Current - Pulsed		I_{DM}	137	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	583.2	mJ
Avalanche Current		I_{AS}	27	A
Power Dissipation		$P_D(T_c=25)$	30	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	
Junction-to-Ambient	$t \leq 10$	R_{JA}	40	/W
Junction-to-Ambient	Steady-State		75	
Junction-to-Case	Steady-State	R_{JC}	4.2	



Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$V_{GS}=0V$	$I_D=250\mu A$	40	43		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$				1	μA
Gate-Body Leakage Current Forward	I_{GB}	$V_{DS}=0V$				0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	1.0	1.7	5	V
Drain-Source On Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=20A$		4.5	5	mΩ
		$V_{GS}=10V$	$f=100kHz$		6.2	10	mΩ
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$	I_S			2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $f=1.0MHz$	$V_{GS}=0V$		1300		pF

BRCS050N04YBQ

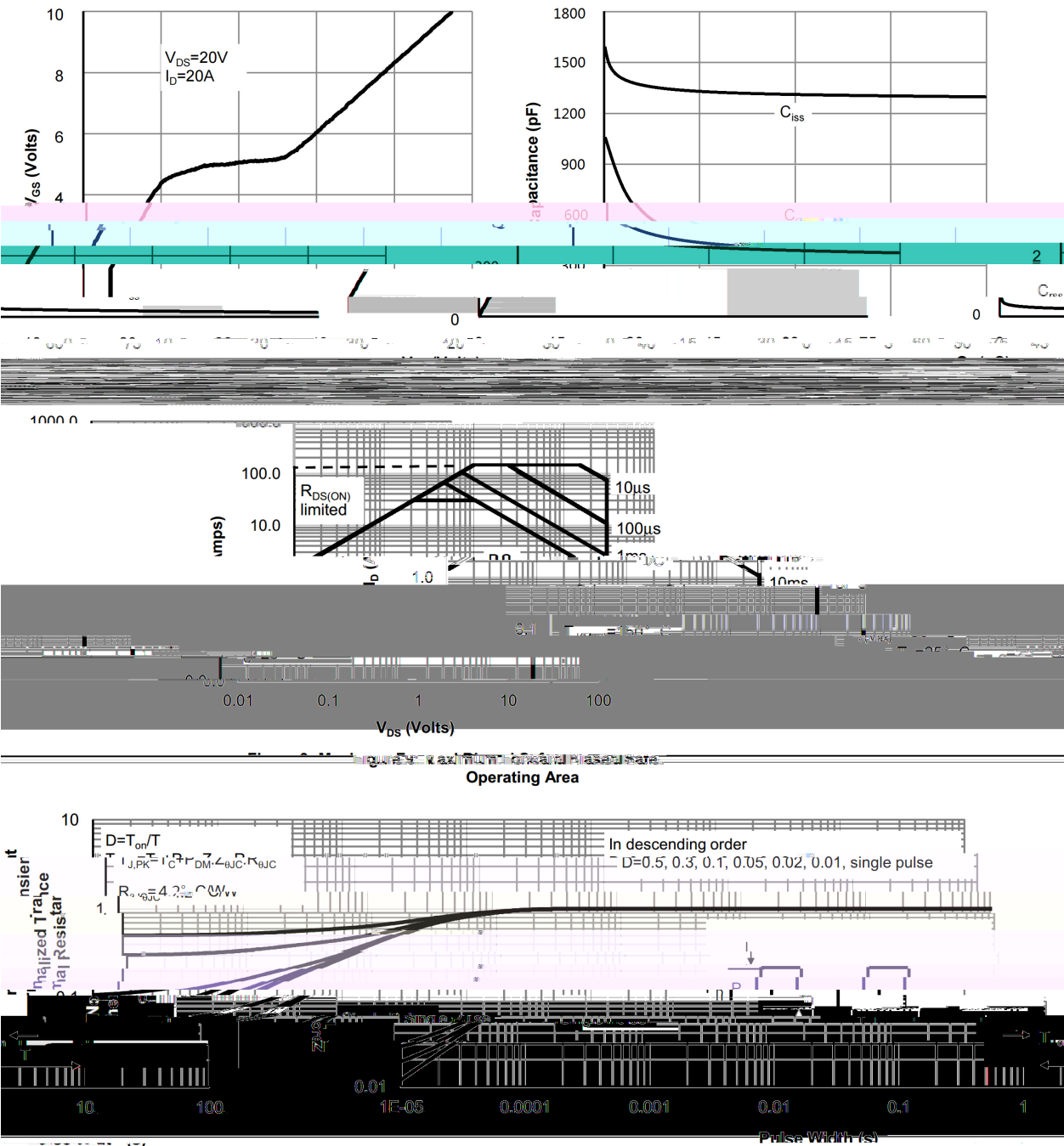
Rev.A Jan.-2024



蓝箭电子
BLUE ROCKET ELECTRONICS

DATA SHEET

Electrical Characteristic Curve



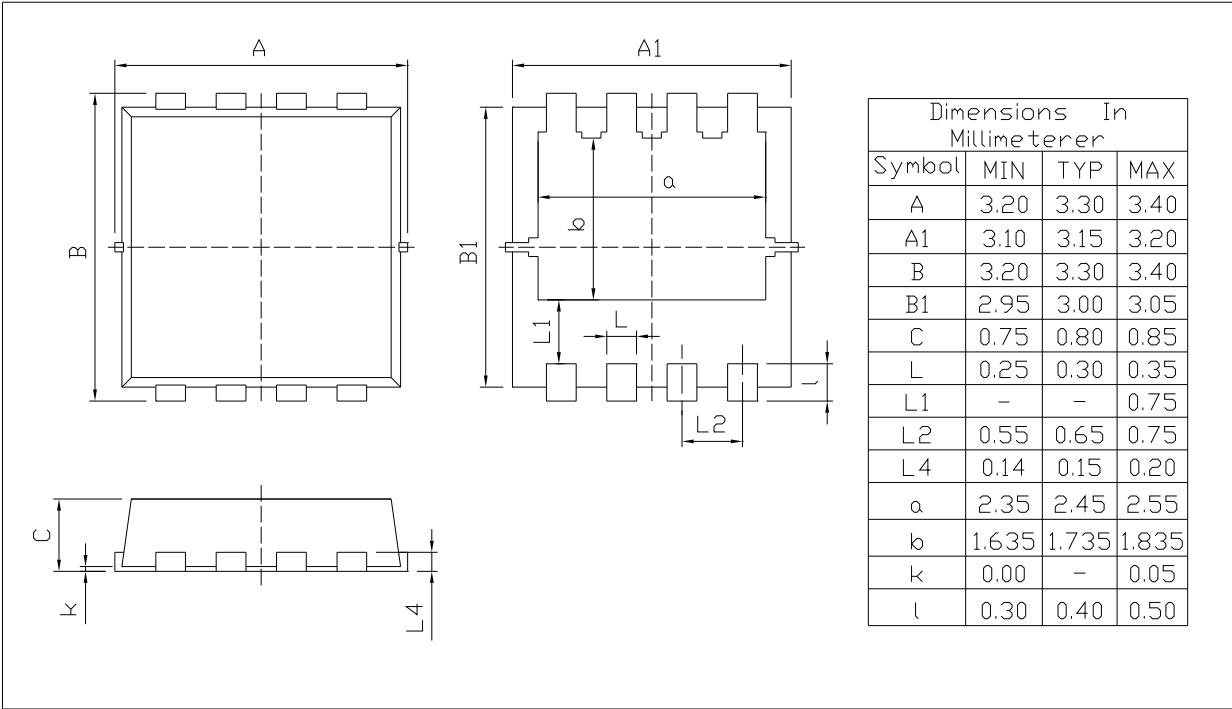
Maximum Transient Thermal Impedance

Figure 10: Normalized

/ Package Dimensions

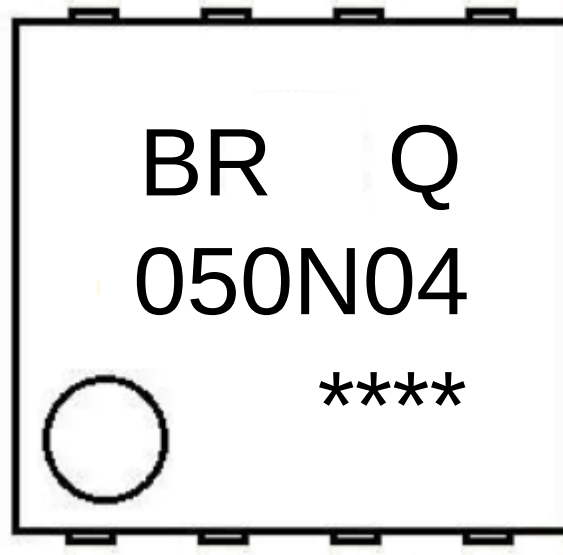
PDFN3X3A-8L

Unit:mm



Rev.00 202011

/ Marking Instructions



BR

Q

050N04

Note:

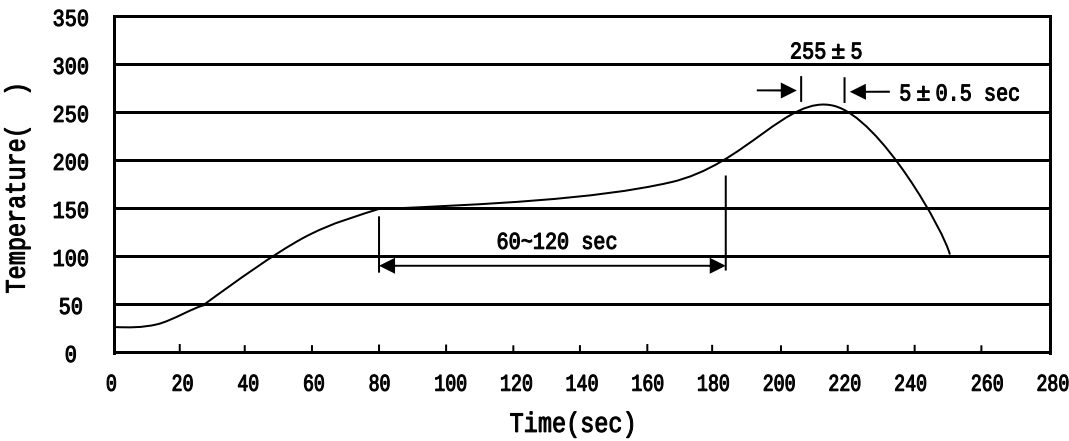
BR: Company Code

Q: Automobile halogen-free product Code

050N04: Product Type Code

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

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



Note:

- 1

150 200

60 120sec;

1.Preheating:150~200 , Time:60~120sec.
- 2

255±5

5±0.5sec;

2.Peak Temp.:255±5 , Duration:5±0.5sec.
- 3

2 10 /sec.

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)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
PDFN3×3A-8L	5,000	2	10,000	6	60,000	13 ×12	360×360×50	380×335×366

/ Notices