

/ Descriptions

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

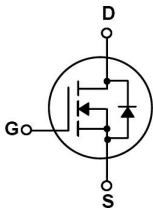
/ Features

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

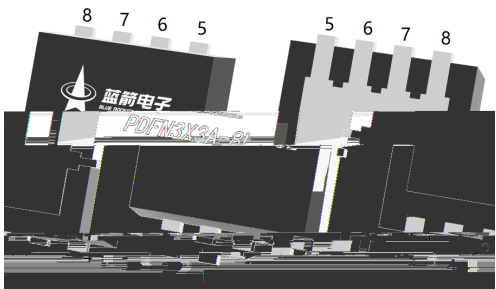
/ Applications

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($T_a=25^\circ\text{C}$)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	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		$P_D(T_c=25^\circ\text{C})$	30	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	

BRCS050N04YBQ

Rev.A Jan.-2024

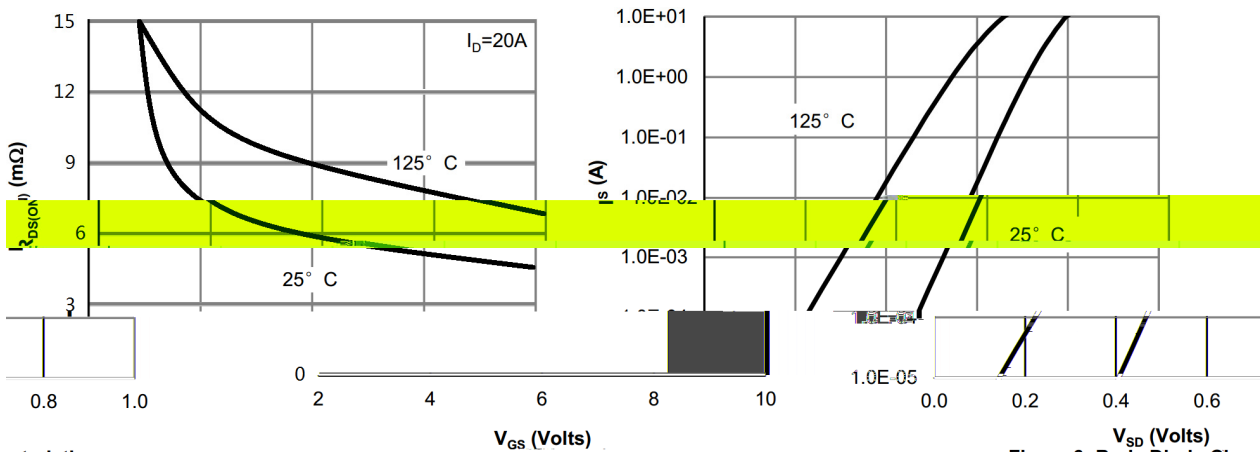
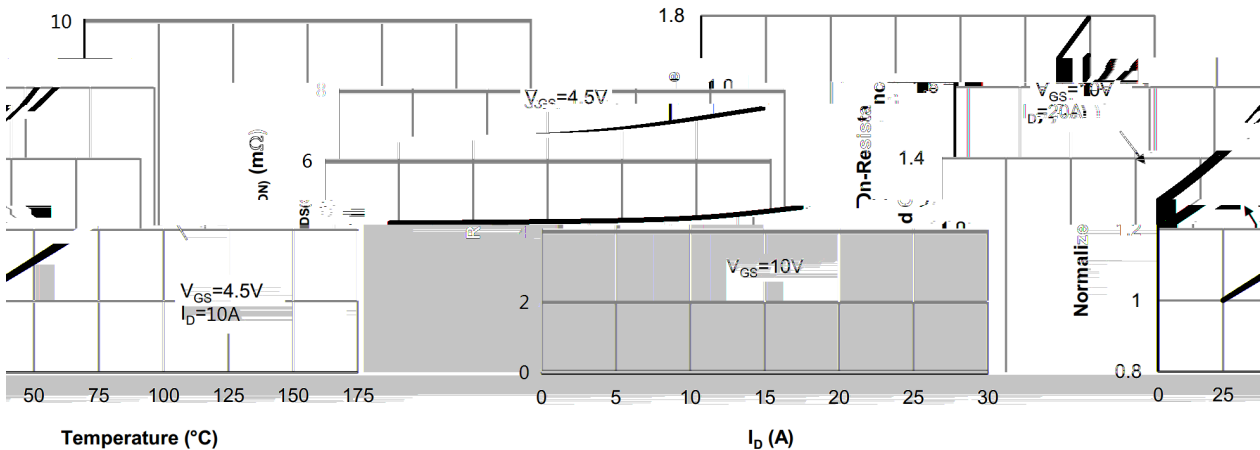
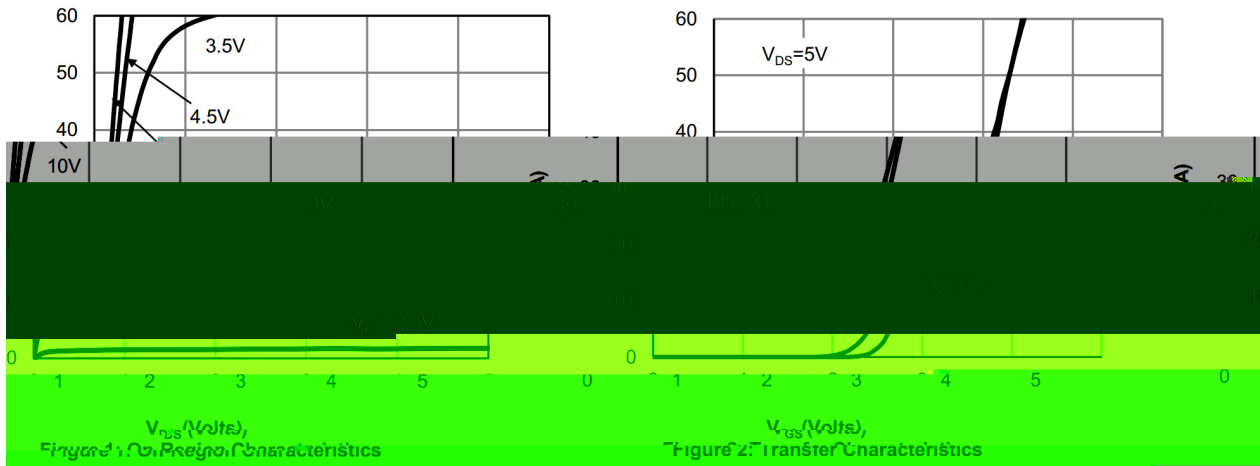


蓝箭电子
BLUE ROCKET ELECTRONICS

DATA SHEET

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	40	43		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$ $V_{GS}=0V$			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	1.7	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		4.5	5	$m\Omega$
		$V_{GS}=4.5V$ $I_D=10A$		6.2	10	$m\Omega$
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		1300		pF

/ Electrical Characteristic Curve



Characteristics

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

Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

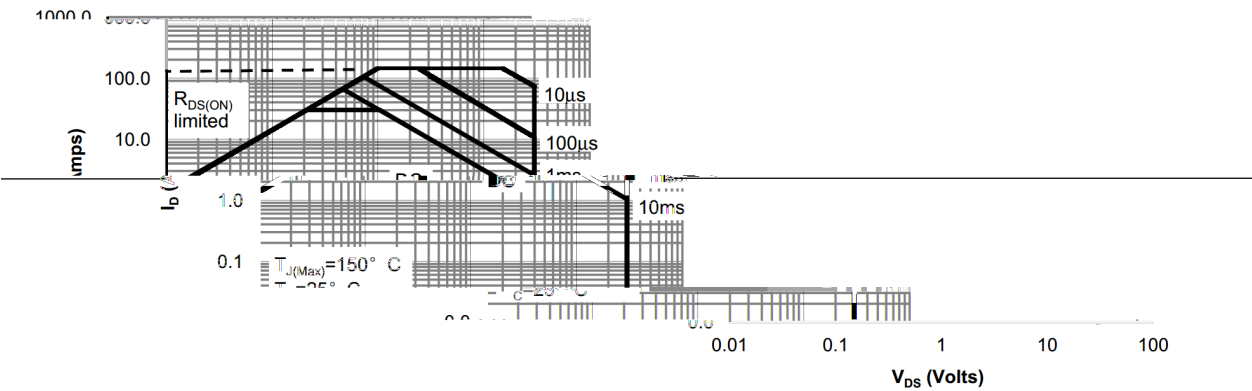
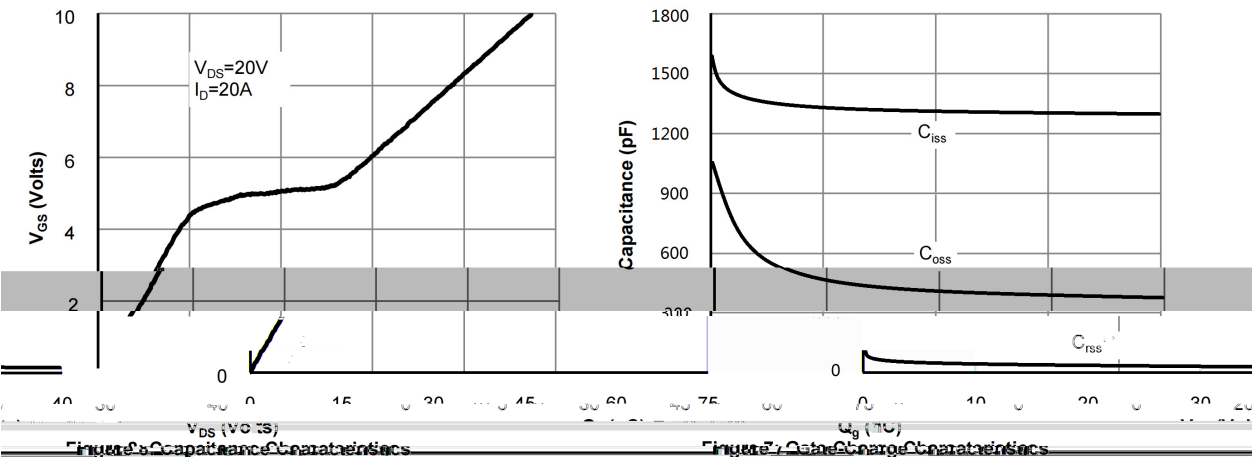


Figure 8: Maximum Forward Biased Operating Area

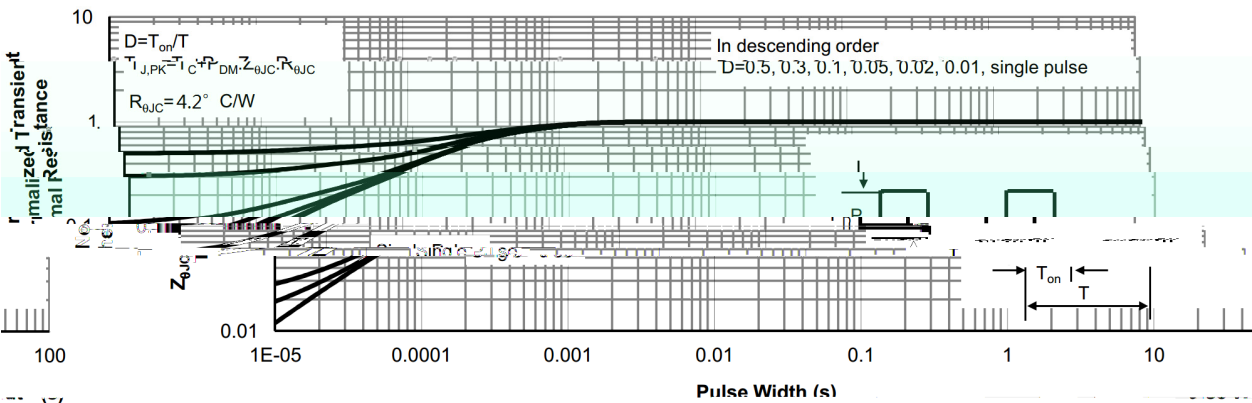
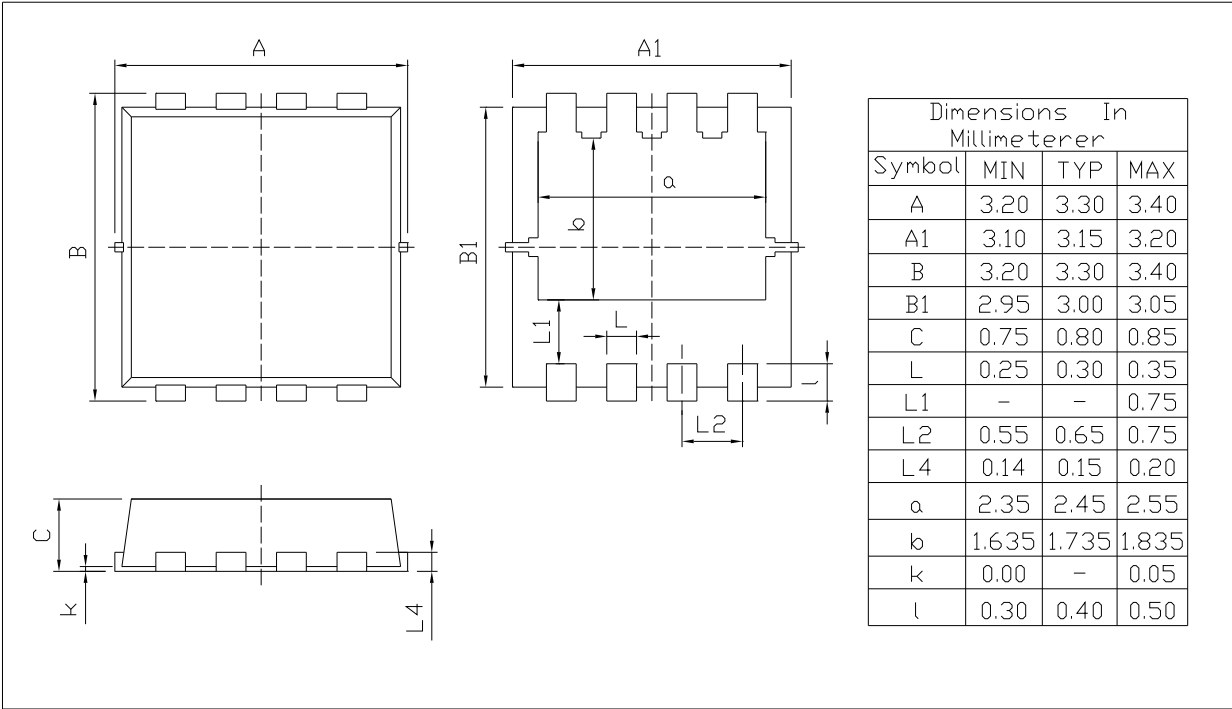


Figure 10: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions

PDFN3X3A-8L

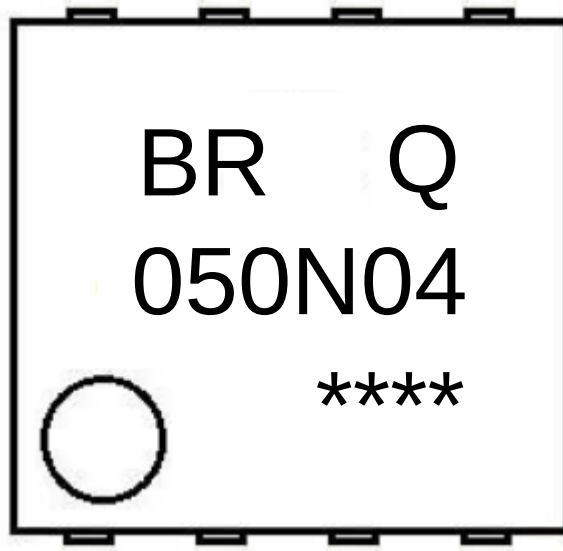
Unit:mm



Rev.00 202011



/ Marking Instructions



BR

Q

050N04

Note:

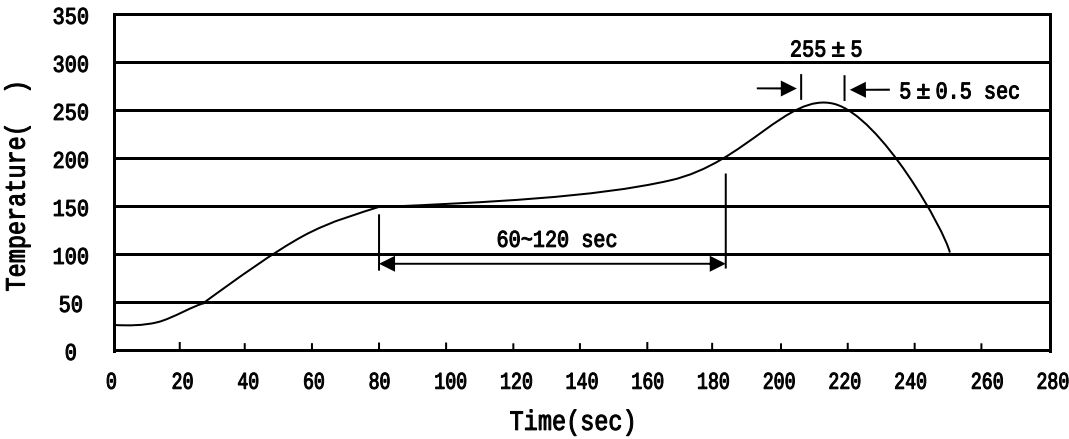
BR: Company Code

Q: Automobile halogen-free product Code

050N04: Product Type Code

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

() /



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