/ Descriptions

PDFN3×3A-8L N MOS

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

/ Features

V_{DS} (V) = 30V

I_D =55 A (V_{GS} = 20V)

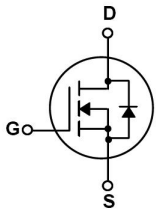
$R_{DS(ON)}$@10V 5mR(Typ.4.3mR)

AEC-Q101 Qualified to AEC-Q101 Standards for High Reliability, HF Product.

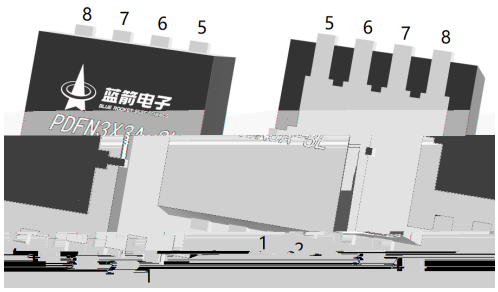
/ Applications

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

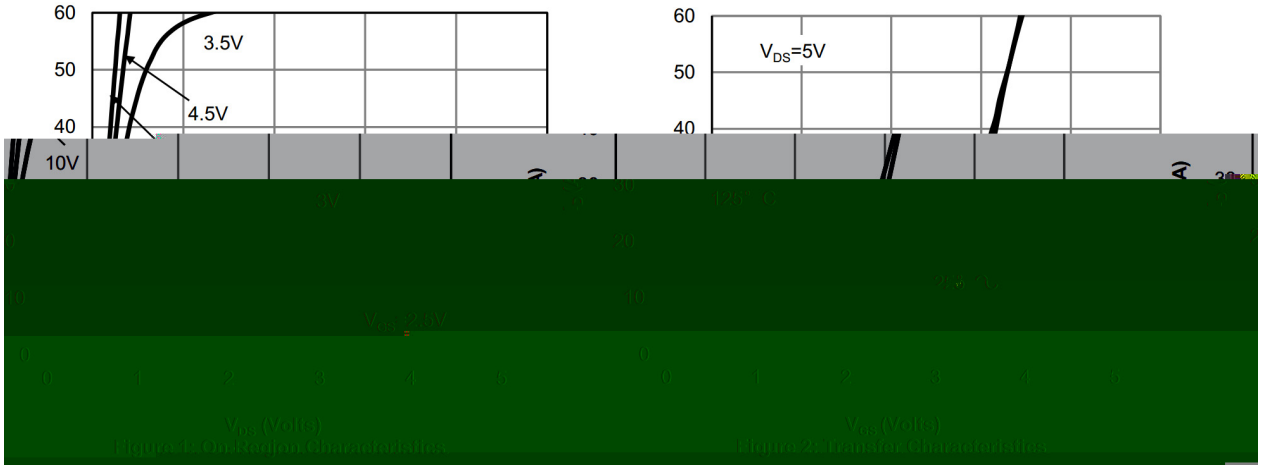
See Marking Instructions.

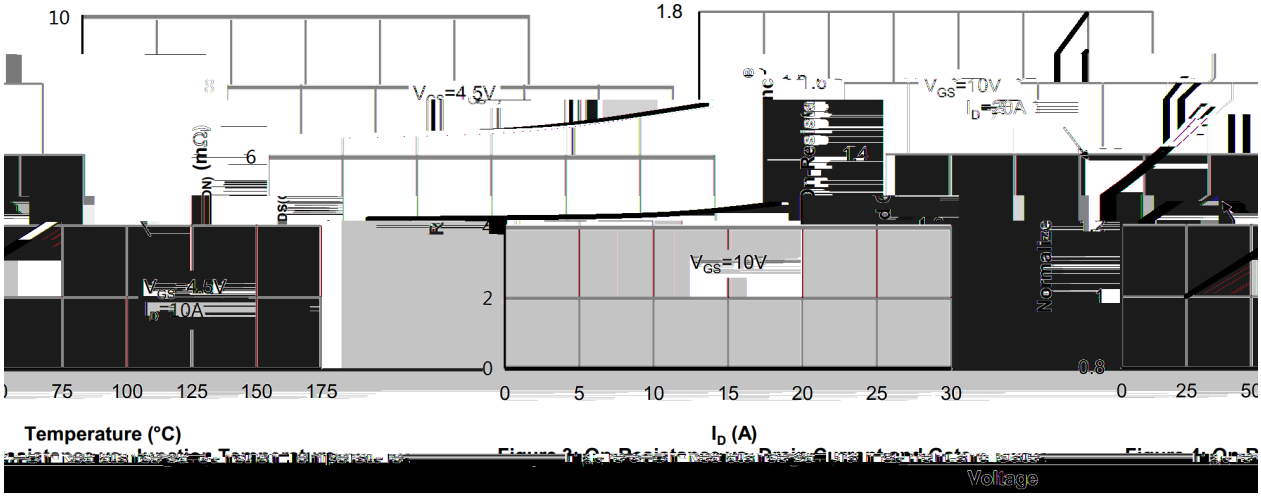
/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		I_D(Tc=25)	55	A
Drain Current - Pulsed		I_{DM}	145	A
Gate-Source Voltage		V_{GSS}	±20	V
Single Pulsed Avalanche Energy		E_{AS}	220.9	mJ
Avalanche Current		I_{AS}	23.5	A
Power Dissipation		P_D(Tc=25)	30	W
Operating and Storage Temperature Range		T_J,T_{stg}	-55 to 150	
Junction-to-Ambient	t 10	$R_{\theta JA}$	40	/W
Junction-to-Ambient	Steady-State		75	
Junction-to-Case	Steady-State	$R_{\theta JC}$	4	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	30	35		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}=±20V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.0	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=20A		4.3	5	mΩ
		V_{GS}=4.5V I_D=10A		6.7	8	mΩ
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		2030		pF
Output Capacitance	C_{oss}			168		
Reverse Transfer Capacitance	C_{rss}			163		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		3.1		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V V_{DS}=15V I_D=20A		40		nC
Total Gate Charge	$Q_{g(4.5V)}$			22		
Gate Source Charge	Q_{gs}			11		
Gate Drain Charge	Q_{gd}			5		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=15V R_L=0.75Ω R_{GEN}=3.0Ω		11		ns

/ Electrical Characteristic Curve





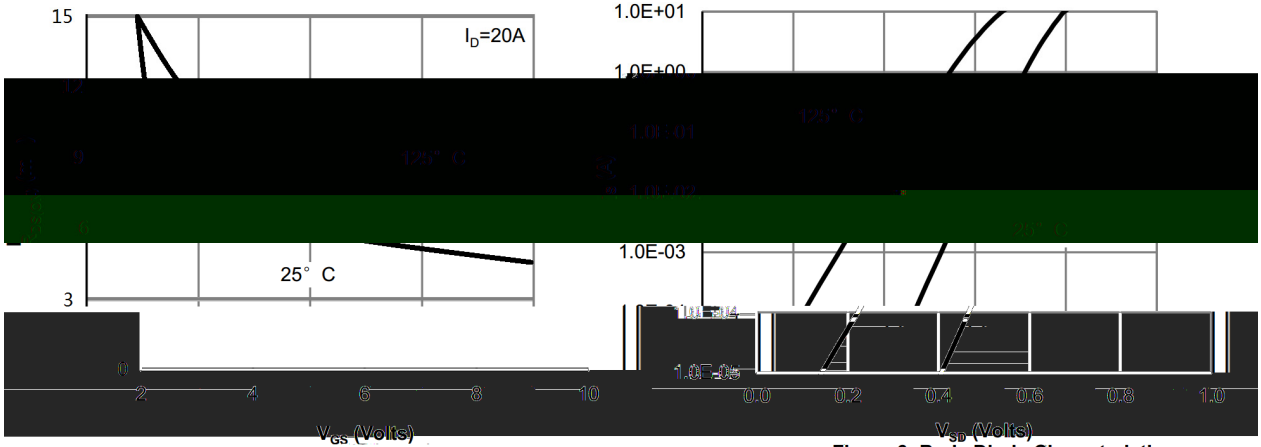


Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

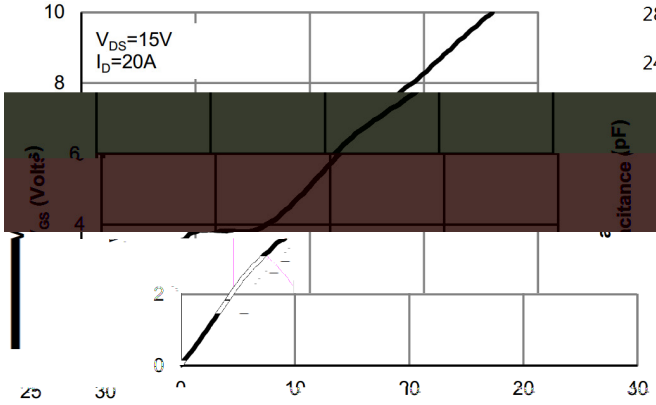


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Figure 7: Gate-Charge Characteristics

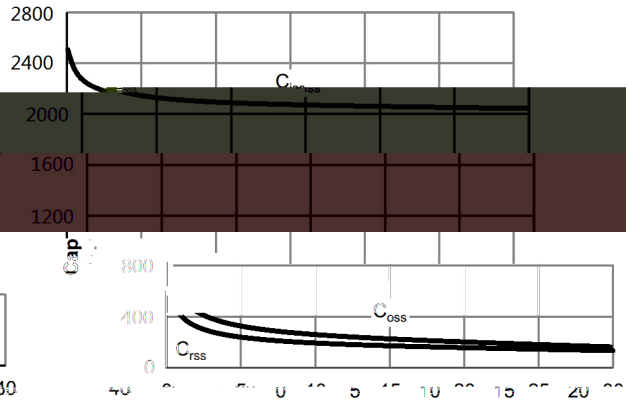


Figure 8: Capacitance Characte

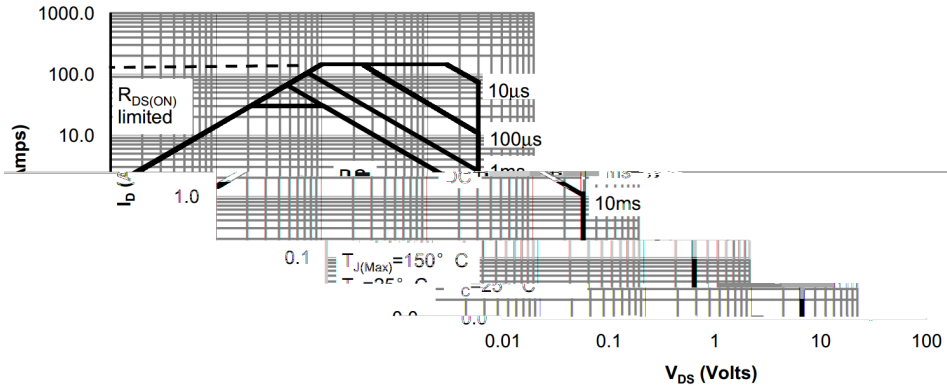
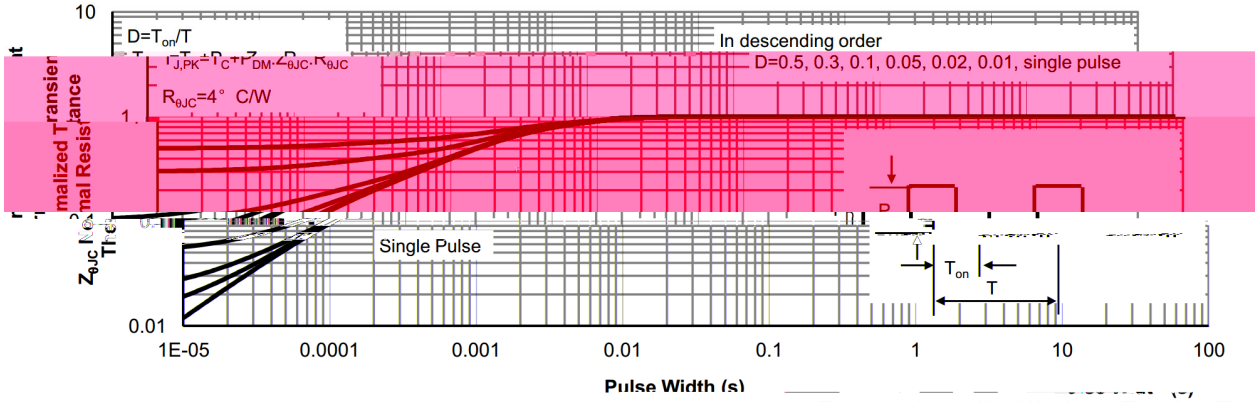


Figure 9: Maximum Forward Biased Safe Operating Area



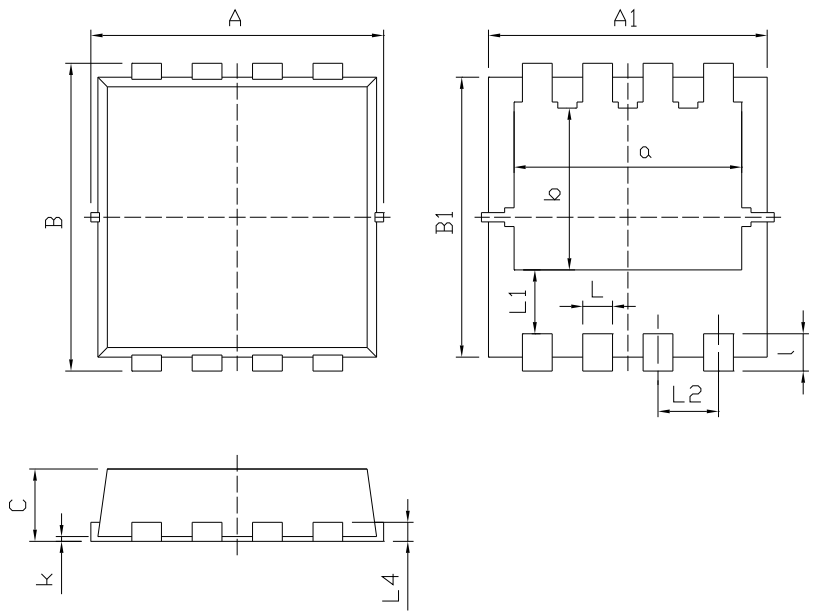
mal Impedance

Figure 10: Normalized Maximum Transient Ther

/ Package Dimensions

PDFN3X3A-8L

Unit:mm



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	3.20	3.30	3.40
A1	3.10	3.15	3.20
B	3.20	3.30	3.40
B1	2.95	3.00	3.05
C	0.75	0.80	0.85
L	0.25	0.30	0.35
L1	-	-	0.75
L2	0.55	0.65	0.75
L4	0.14	0.15	0.20
a	2.35	2.45	2.55
b	1.635	1.735	1.835
k	0.00	-	0.05
l	0.30	0.40	0.50

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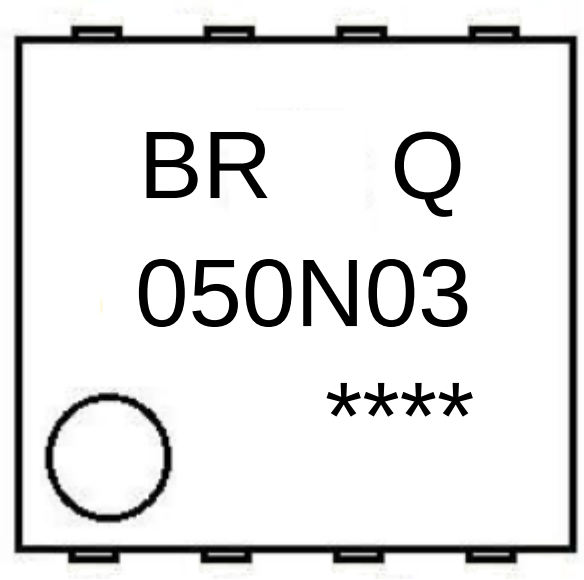
/ Marking Instructions



BR

Q

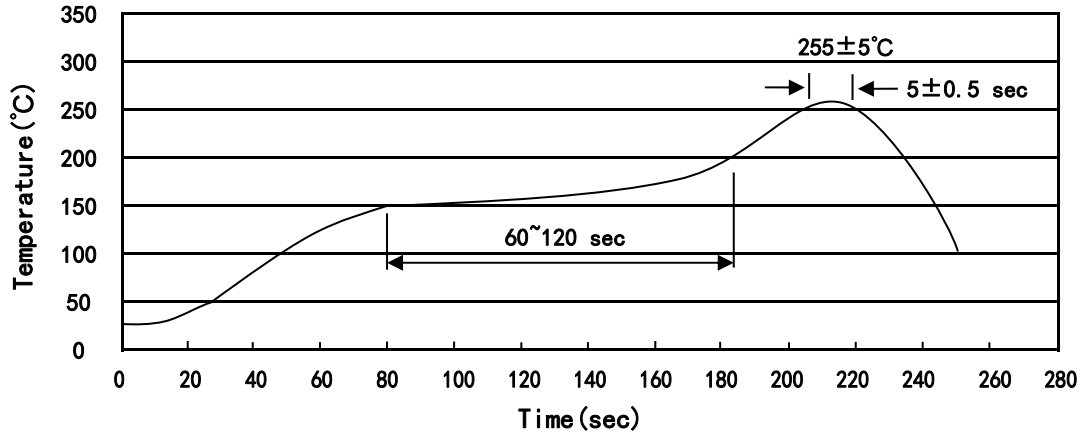
050N03

****

Note:

BR:	Company Code
Q:	Automobile halogen-free product Code
050N03:	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 封装形式	Units 包装数量					Dimension 包装尺寸 (unit：mm³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
PDFN3×3A-8L	5,000	2	10,000	6	60,000	13 ×12	360×360×50	380×335×366

/ Notices