BRCS035N03YB

Rev.A Nov.-2023

DATA SHEET

/ Descriptions

SGIQ6Ö6D0;0 ṂṂĿ Q ڗ PRV ʆ ῼ Ẕ ٦

N-Channel Enhancement Mode Field Effect Transistor in a PDFN3Ö3A-8L Plastic Package.

/ Features

V_{DS} (V) = 30V

I_D =74A (V_{GS} = ¤ 20V)

$R_{DS(ON)}$@10VŮ3.7mR(Typ.3.5mR)

$R_{DS(ON)}$@4.5VŮ6.5mR(Typ.4.5mR)

ˠ ᵀ DHF0T434 ‰́ ܙ ˡ ˛ ǿ ˪ ∂ ˛ ῆ ғ ᵝ ÂQualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

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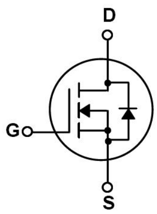
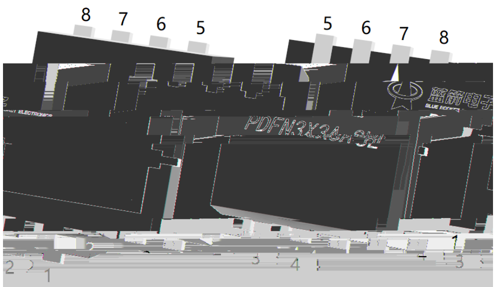
Load Switch Applications,Battery Power Management, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



出脚	定义
Pin1	S
Pin2	S
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

/ Marking

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See Marking Instructions.

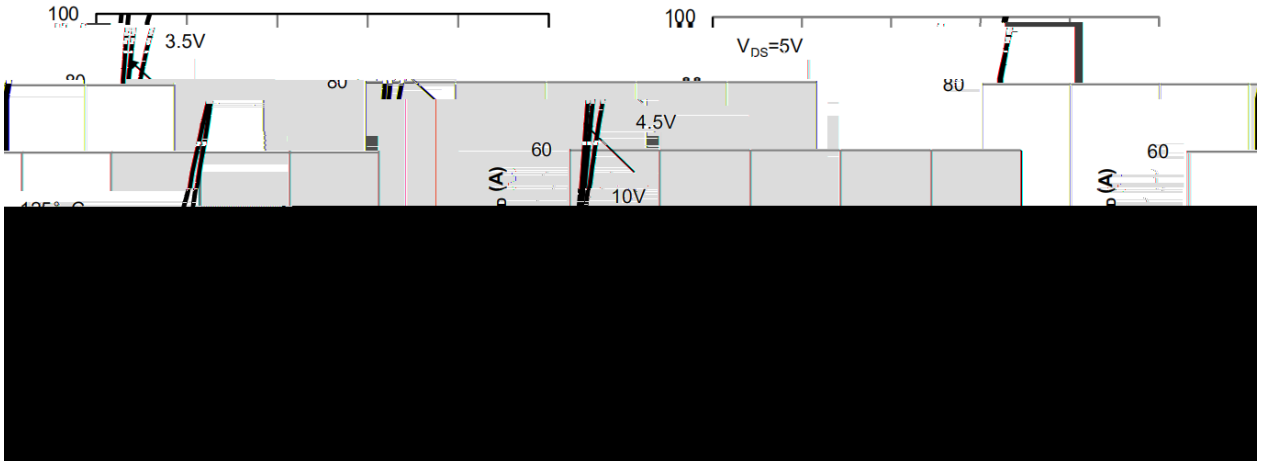
/ Absolute Maximum Ratings(Ta=25)

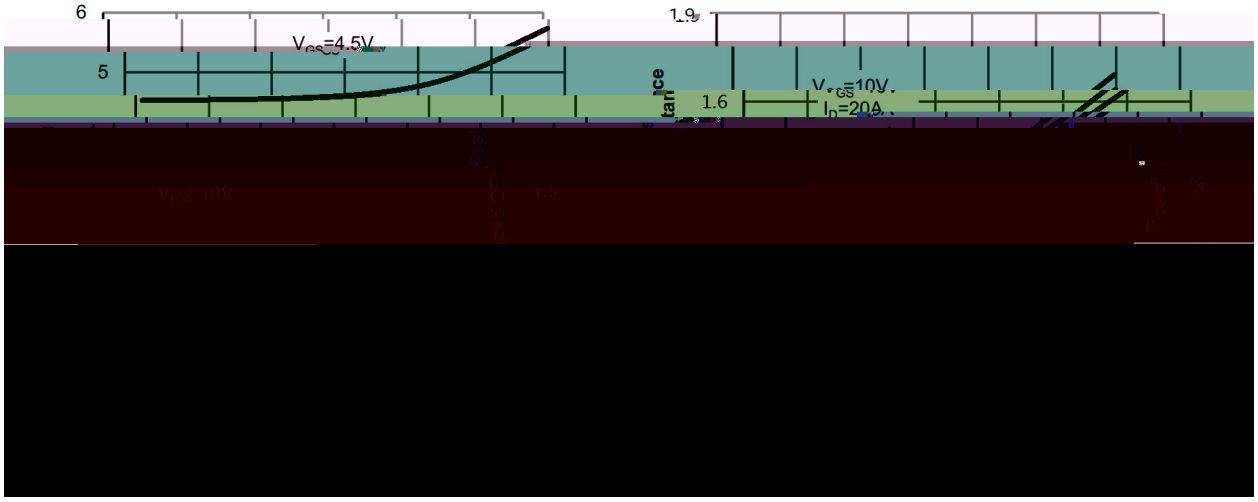
v ‴Ω Parameter		ϒ N Symbol	‴Ω Ö Rating	D Ч Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		I_D(Tc=25 Ņ)	74	A
Drain Current - Pulsed		I_{DM}	185	A
Gate-Source Voltage		V_{GSS}	±20	V
Single Pulsed Avalanche Energy		E_{AS}	449	mJ
Avalanche Current		I_{AS}	33.5	A
Power Dissipation		P_D(Tc=25 Ņ)	35	W
Operating and Storage Temperature Range		T_J,T_{stg}	-55 to 150	
Junction-to-Ambient	t Ů 10	$R_{\theta JA}$	42	Ņ/W
Junction-to-Ambient	Steady-State		78	
Junction-to-Case	Steady-State	$R_{\theta JC}$	3.6	

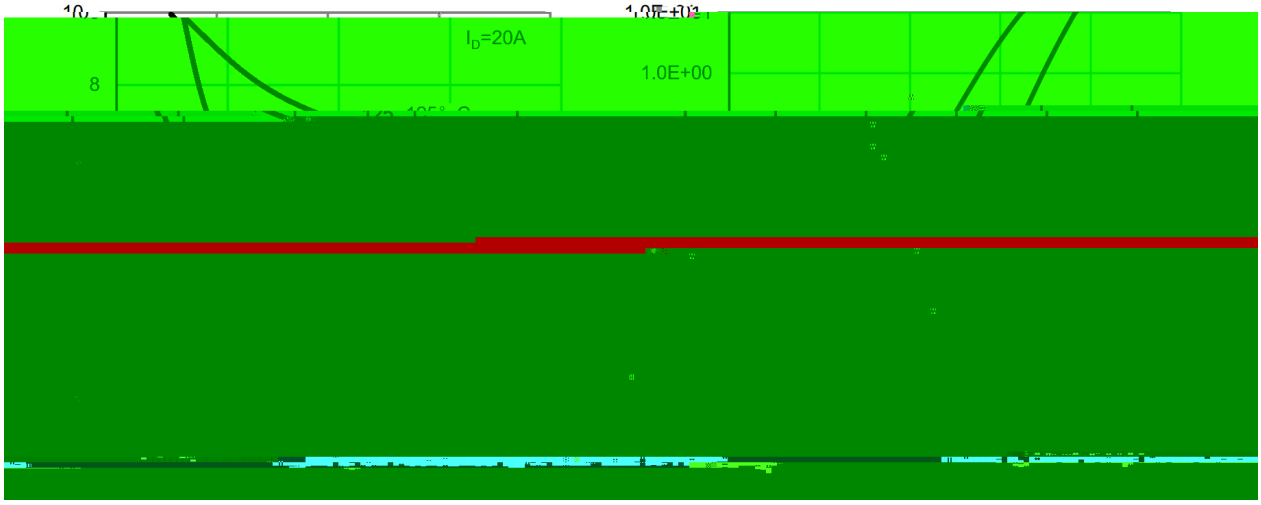
/ Electrical Characteristics(Ta=25)

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	1.5	3.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=20A		3.5	3.7	mΩ
		V_{GS}=4.5V I_D=10A		4.5	6.5	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		2750		pF
Output Capacitance	C_{oss}			380		
Reverse Transfer Capacitance	C_{rss}			240		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		2.6		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V V_{DS}=15V I_D=20A		80		nC
Total Gate Charge	$Q_{g(4.5V)}$			35		
Gate Source Charge	Q_{gs}			13		
Gate Drain Charge	Q_{gd}			13		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=15V R_L=0.75Ω R_{GEN}=3.0Ω		6.7		ns
Turn-On Rise Time	t_r			3.8		
Turn-Off Delay Time	$t_{d(off)}$			32		
Turn-Off Fall Time	t_f			5.2		

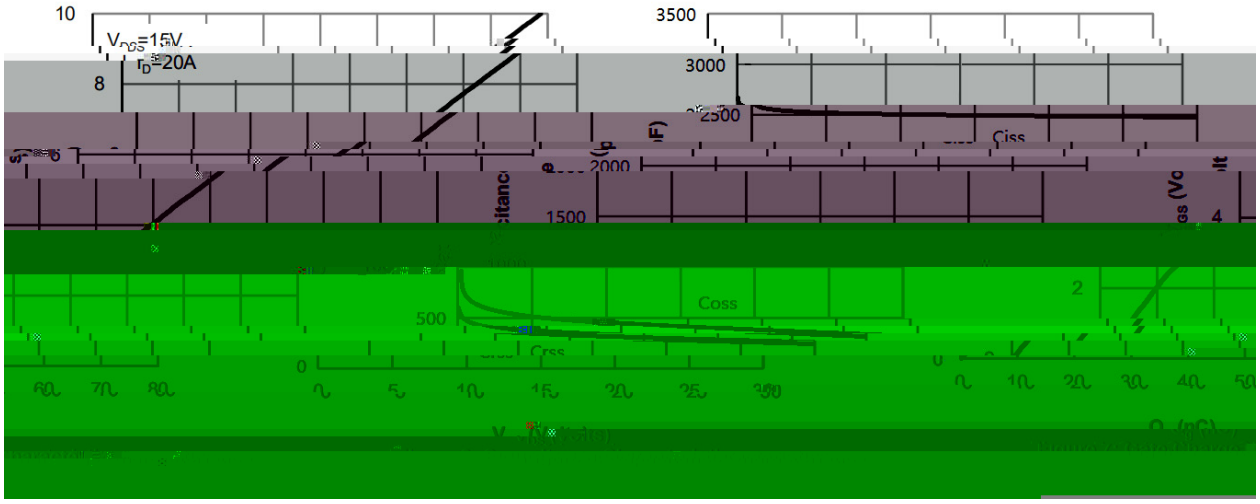
/ Electrical Characteristic Curve

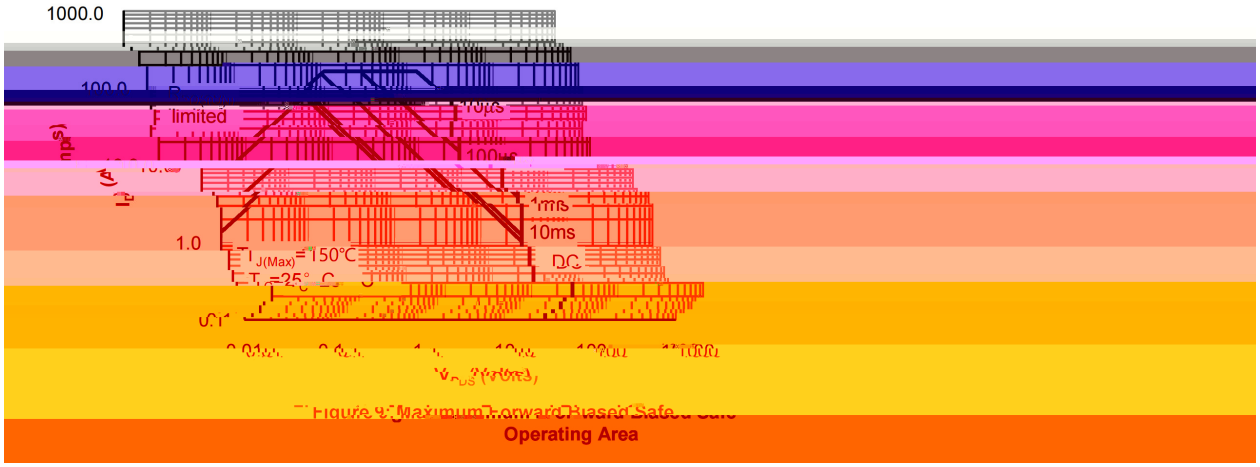


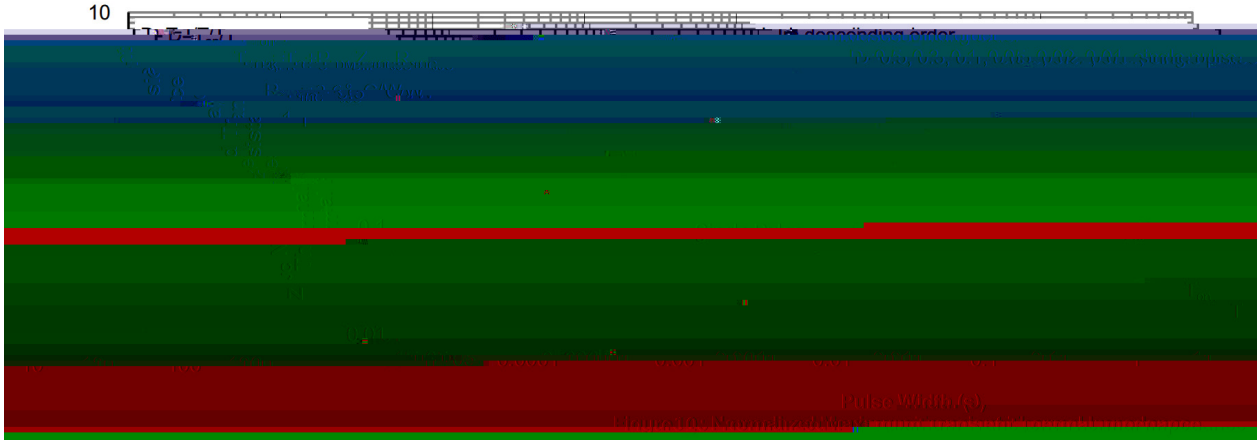




/ Electrical Characteristic Curve



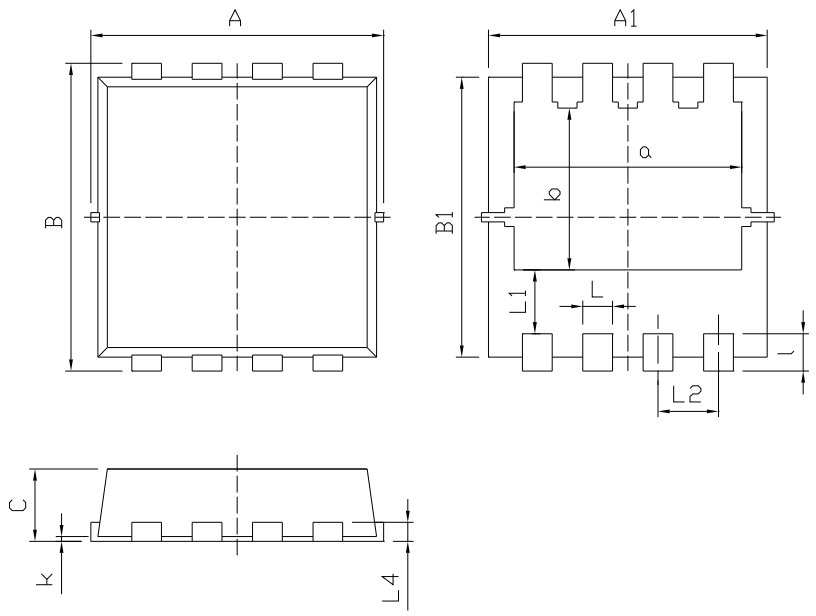




/ Package Dimensions

PDFN3X3A-8L

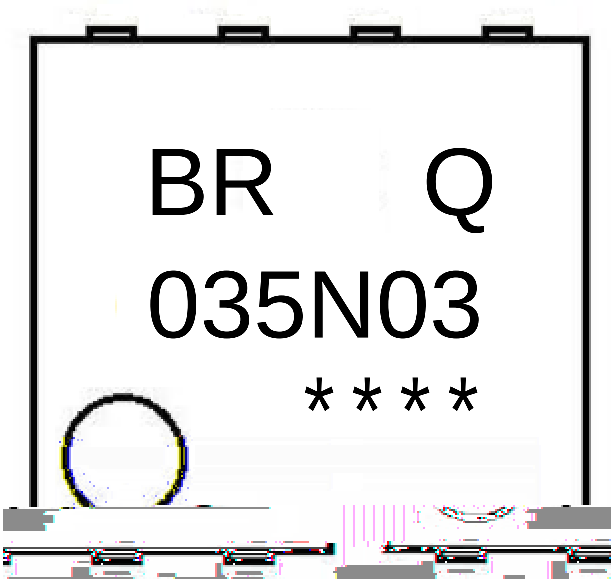
Unit:mm



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

Rev.00 202011

/ Marking Instructions



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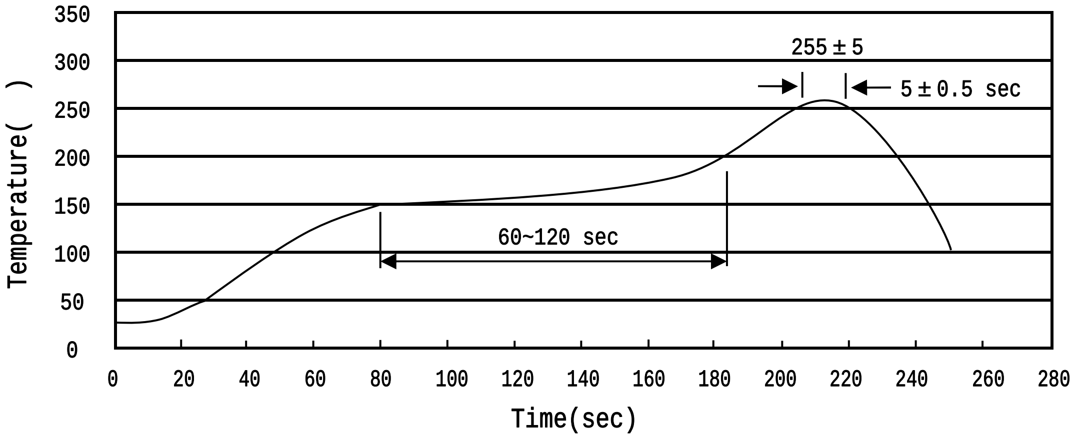
Note:

BR:	Company Code
Q:	Automobile halogen-free product Code
035N03:	Product Type Code
****:	Lot No. Code, code change with Lot No

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



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Note:

1 ί ♬ □ ŷ 150 Ḱ 200 ɫ ı `H ڗ 60 Ḱ 120sec;

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

2 Ŝ Ɵ □ ŷ 255 ° 5 ɫ ı `H ڗ `Y ᛵ 焃 5 ° 0.5sec;

2.Peak Temp.:255 ° 5 ɫ , Duration:5 ° 0.5sec.

3 ì ˙ ˥ ˛ ɔ ඣ ŷ 焃 2 Ḱ 10 ɫ /sec.

3. Cooling Speed: 2~10 ɫ /sec.

/ Resistance to Soldering Heat Test Conditions

□ ŷ χ 260 ° 5 ɫ `H ڗ χ 10 ° 1 sec.

Temp.:260 ° 5 ɫ Time:10 ° 1 sec

/ Packaging SPEC.

ᴖ ` γ Ŀ / REEL

Package Type	Units					Dimension (unit mm³)		
	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 ρ ×12	360×360×50	380×335×366

/ Notices