

Rev.A May.-2023

PDFN3×3A-8L N MOS

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

$V_{DS} (V) = 40V$

$I_D = 45 A (V_{GS} = 20V)$

$R_{DS(ON)} @ 10V \ 8mR (Typ. 6.4mR)$

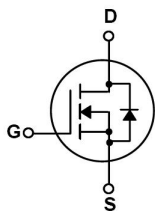
AEC-Q101

Qualified to AEC-Q101 Standards for High Reliability,

HF Product.

DC/DC

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



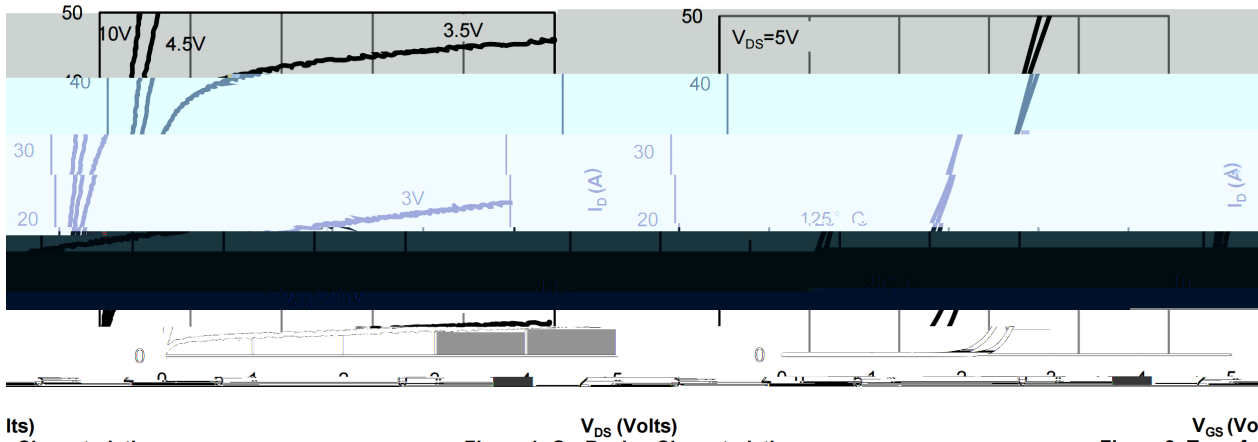
出脚	定义
Pin1	S
Pin2	S
Pin3	S
Pin4	G
Pin5	D
Pin6	D
Pin7	D
Pin8	D

See Marking Instructions.



Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	45	A
Drain Current - Pulsed		I_{DM}	105	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	67.6	mJ
Avalanche Current		I_{AS}	13	A
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	27	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	25	/W
Junction-to-Ambient	Steady-State		55	
Junction-to-Case	Steady-State	$R_{\theta JC}$	4.6	

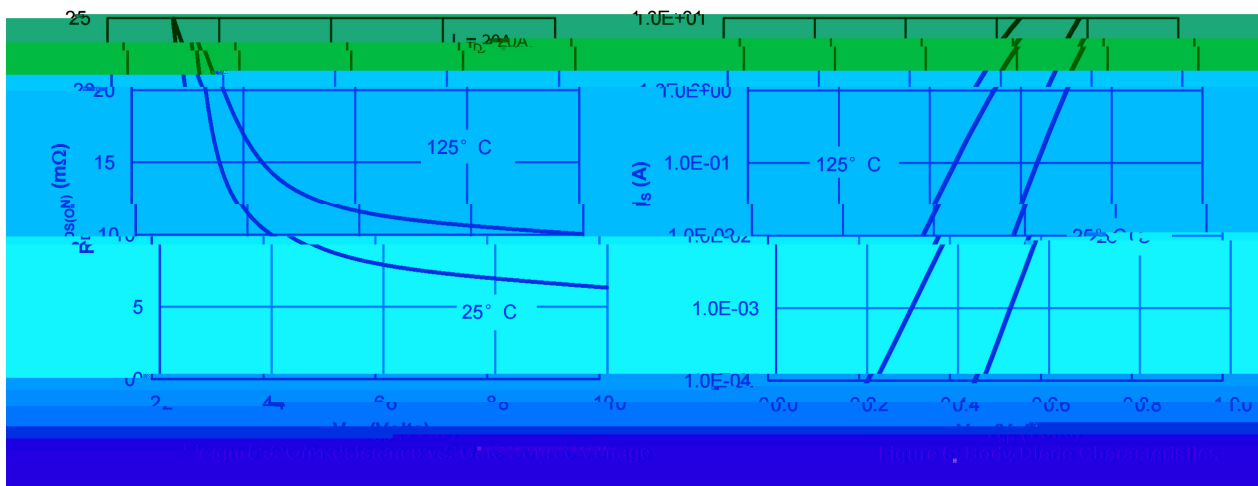
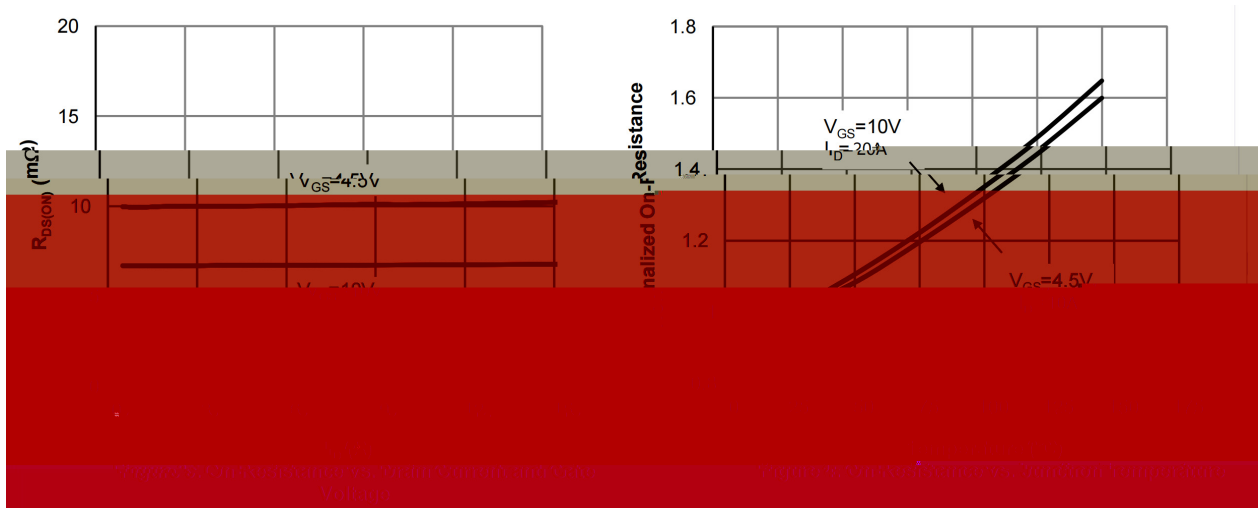
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	40	47		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		6.4	8	m Ω
		$V_{GS}=4.5V$ $I_D=10A$		10	13	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		850		pF
Output Capacitance	C_{oss}			115		
Reverse Transfer Capacitance	C_{rss}			30		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		2.4		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=20V$ $I_D=15A$		21		nC
Total Gate Charge	$Q_{g(4.5V)}$			8.6		
Gate Source Charge	Q_{gs}			5.7		
Gate Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1.18\Omega$ $R_{GEN}=3.0\Omega$		7.5		ns
Turn-On Rise Time	t_r			2.1		
Turn-Off Delay Time	$t_{d(off)}$			23		
Turn-Off Fall Time	t_f			3		

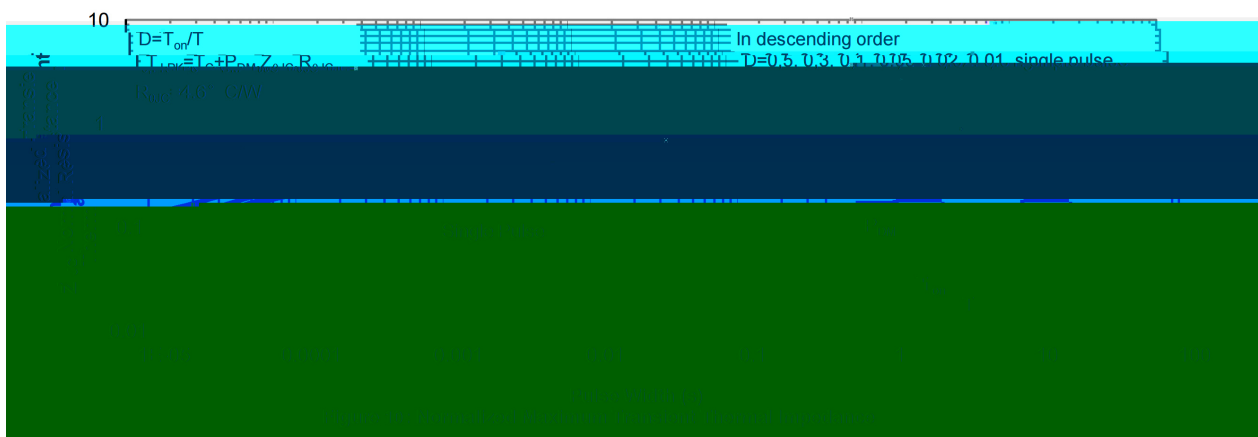
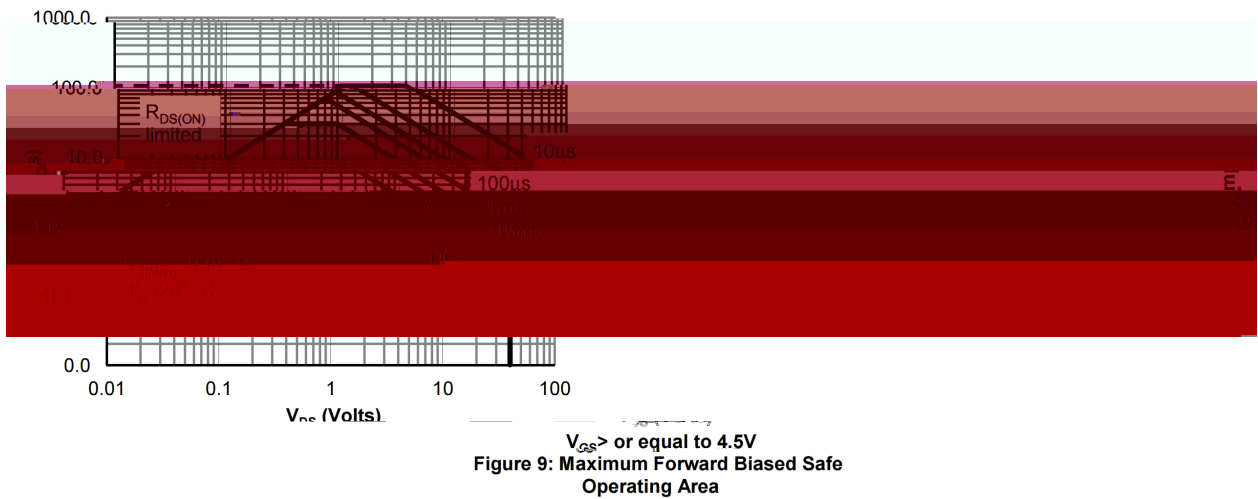
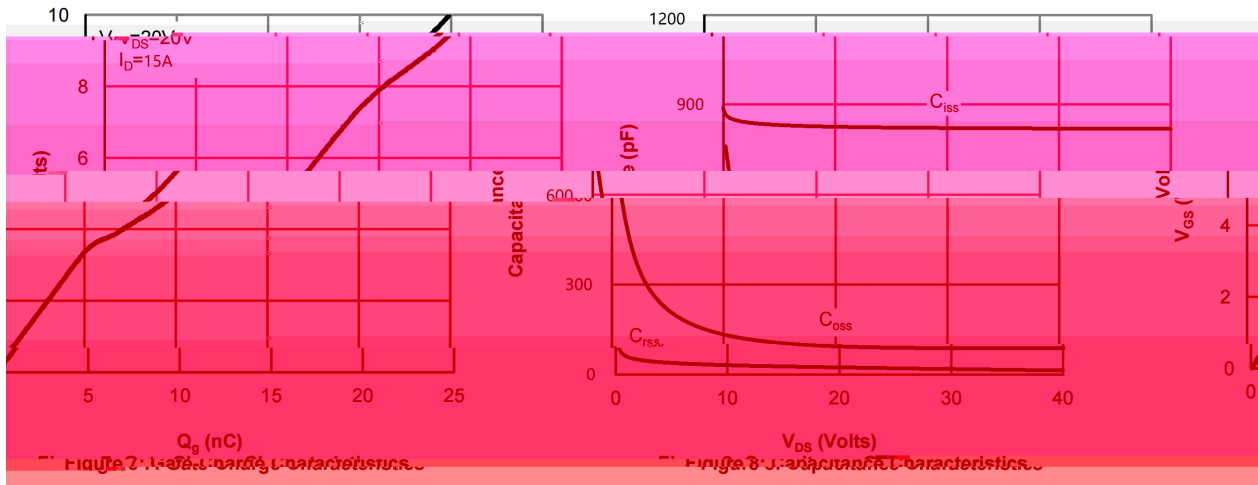


Its
r Characteristics

Figure 1: On-Region Characteristics

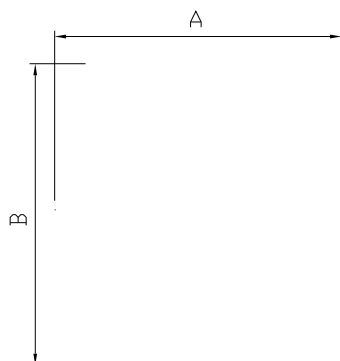
Figure 2: Transfer





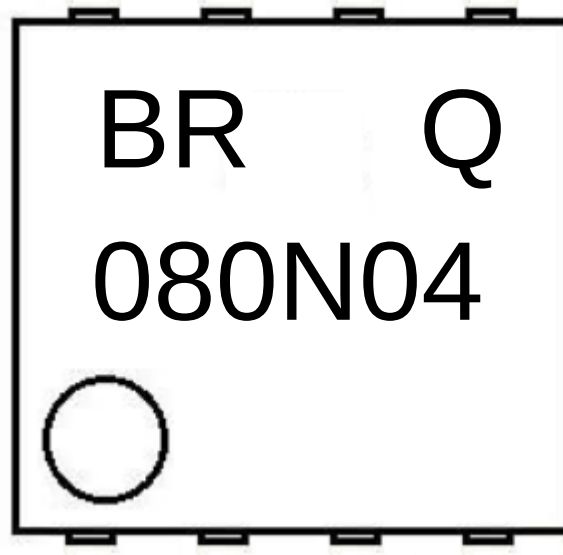
PDFN3X3A-8L

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

Rev.00 202011



BR

Q

080N04

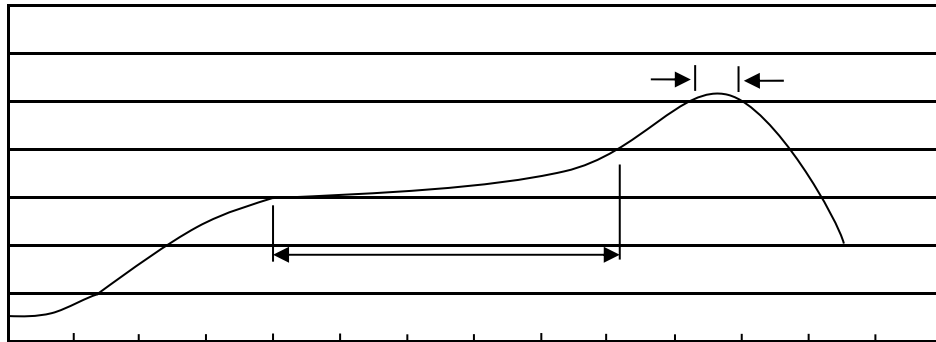
Note:

BR: Company Code

Q: Automobile halogen-free product Code

080N04: 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. |

260±5

10±1 sec.

Temp.:260±5

Time:10±1 sec

/ 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
PDFN 3×3A-8L	5,000	2	10,000	6	60,000	13 ×12	360×360×50	380×335×366