

/ Descriptions

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

/ Features

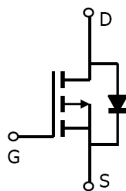
- $V_{DS} (V) = -60V$
 $R_{DS(ON)}@-10V \leq 40m\Omega$ (Typ.36m Ω)
 $R_{DS(ON)}@-4.5V \leq 50m\Omega$ (Typ.44m Ω)
- $I_D = -23A$ ($V_{GS} = \pm 20V$)

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

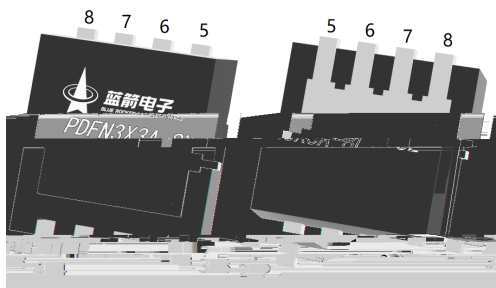
/ Applications

Notebook AC-in load switch,Battery protection charge/discharge, 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}	-60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	$I_D (T_c=25^\circ\text{C})$	-23	A
Pulsed Drain Current	I_{DM}	-73	A
Avalanche Current	I_{AS}	17.5	A
Avalanche energy L=0.5mH	E_{AS}	320	mJ
Power Dissipation for Single Operation	$P_D (T_c=25^\circ\text{C})$	35	W
Maximum Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	65	/W
Thermal Resistance- Junction-to-Case	$R_{\theta JC}$	3.6	/W

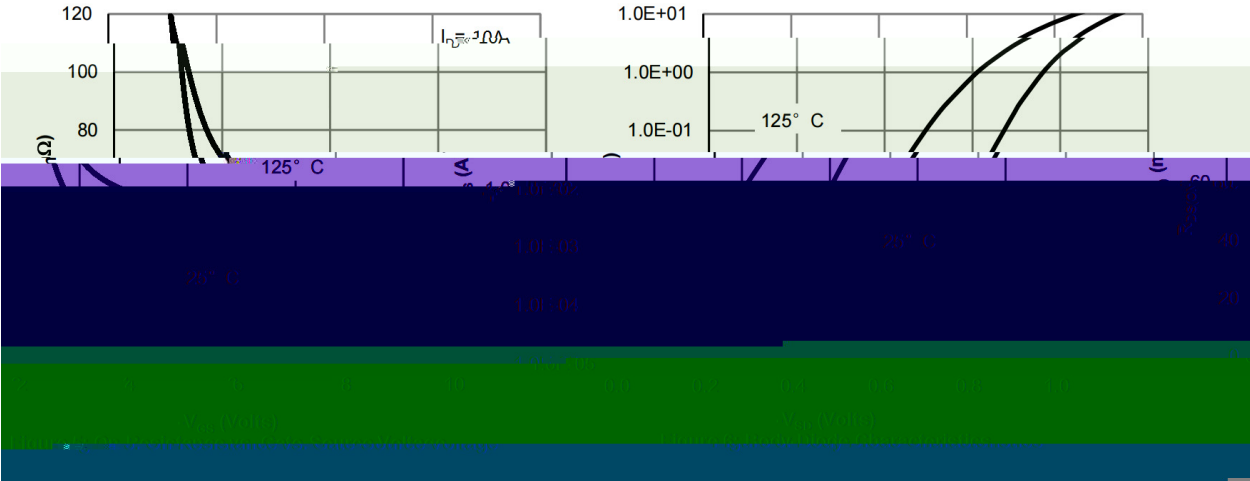
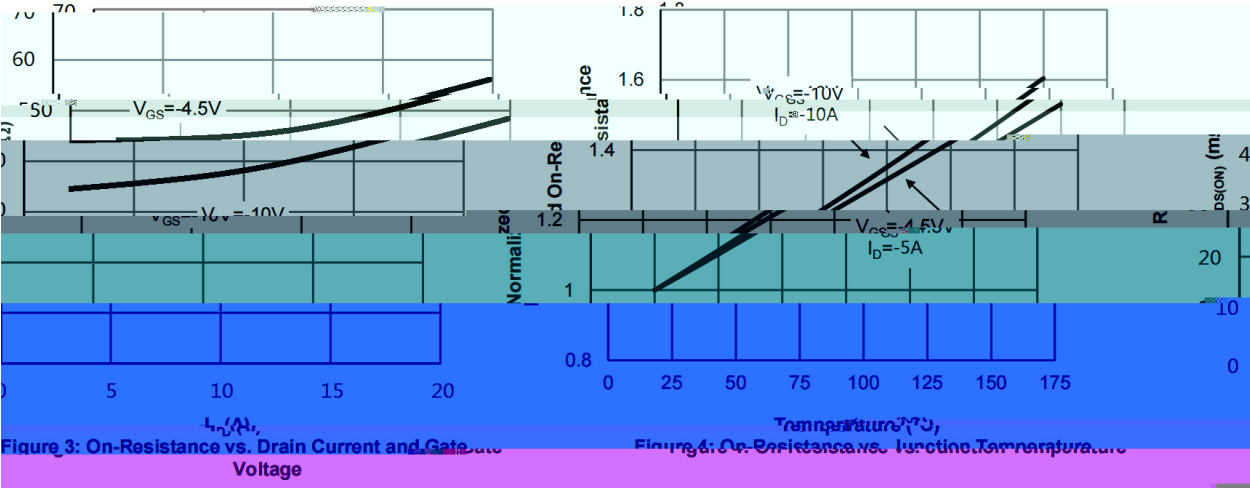
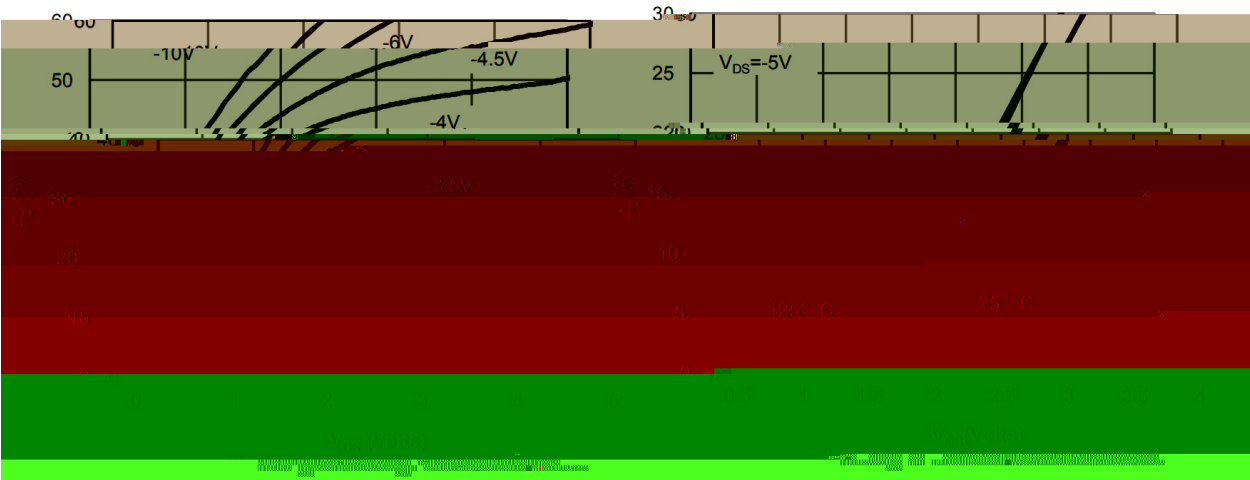
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu\text{A}$ $V_{GS}=0\text{V}$	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60\text{V}$ $V_{GS}=0\text{V}$			-1.0	
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}$ $V_{GS}=\pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu\text{A}$	-1.0	-	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10\text{V}$ $I_D=-10\text{A}$		36	40	m Ω
		$V_{GS}=-4.5\text{V}$ $I_D=-5\text{A}$		44	50	
Diode Forward Voltage	V_{SD}	$I_S=-1\text{A}$ $V_{GS}=0\text{V}$			-1.0	V
Gate Resistance	R_g	$V_{GS}=0\text{V}$ $V_{DS}=0\text{V}$ $f=1\text{MHz}$		5.0		Ω
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$ $V_{DS}=-15\text{V}$ $f=1\text{MHz}$		2500		pF
Output Capacitance	C_{oss}			180		
Reverse Transfer Capacitance	C_{rss}			120		

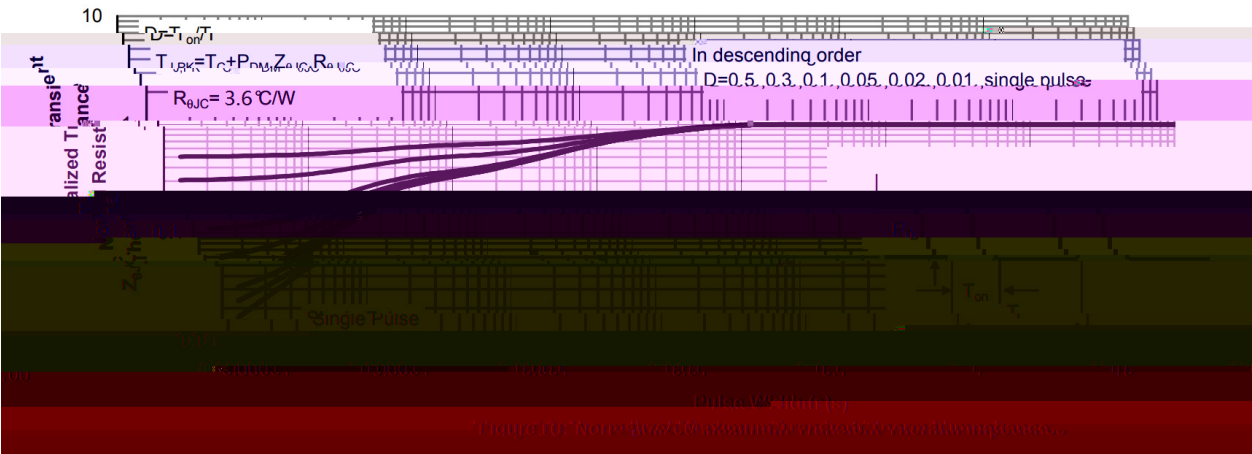
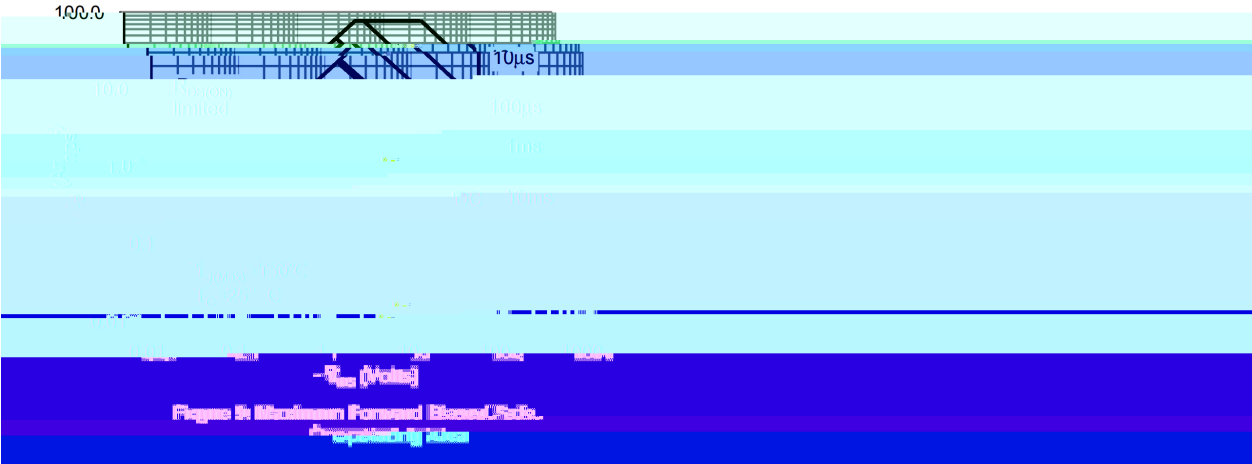
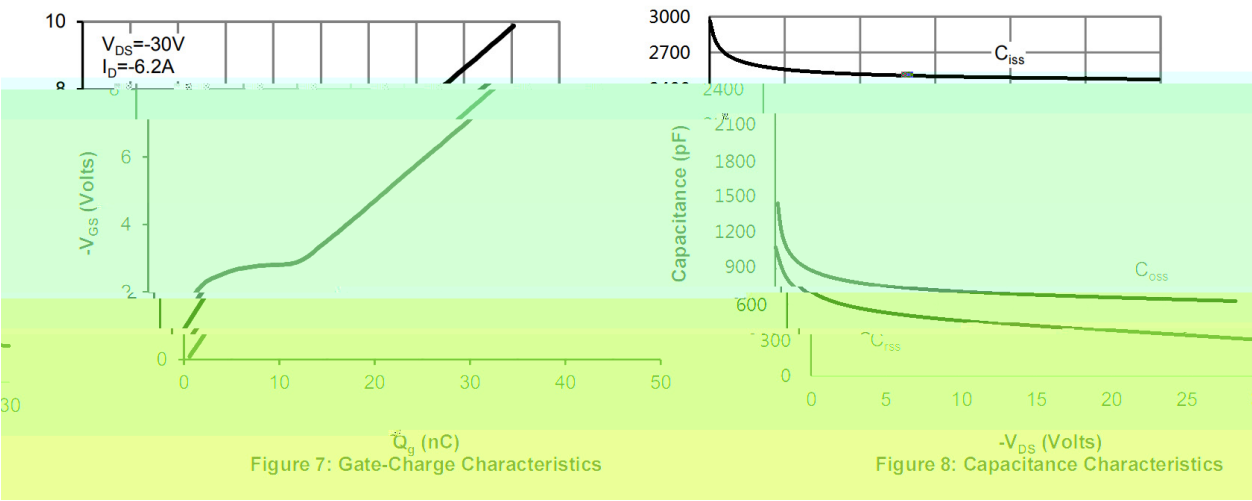
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=-10V$ $V_{DS}=-30V$ $I_D=-6.2A$		46.5		nC
Total Gate Charge	$Q_{g(4.5V)}$			22.7		
Gate-Source Charge	Q_{gs}			9.1		
Gate-Drain Charge	Q_{gd}			9.2		
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-10V$ $V_{DS}=-30V$ $R_L=4.7\Omega$ $R_{GEN}=3\Omega$		9.8		ns
Turn-on Rise Time	t_r			6.1		
Turn-off Delay Time	$t_{d(OFF)}$			44		
Turn-off Fall Time	t_f			12.7		

/ Electrical Characteristic Curve



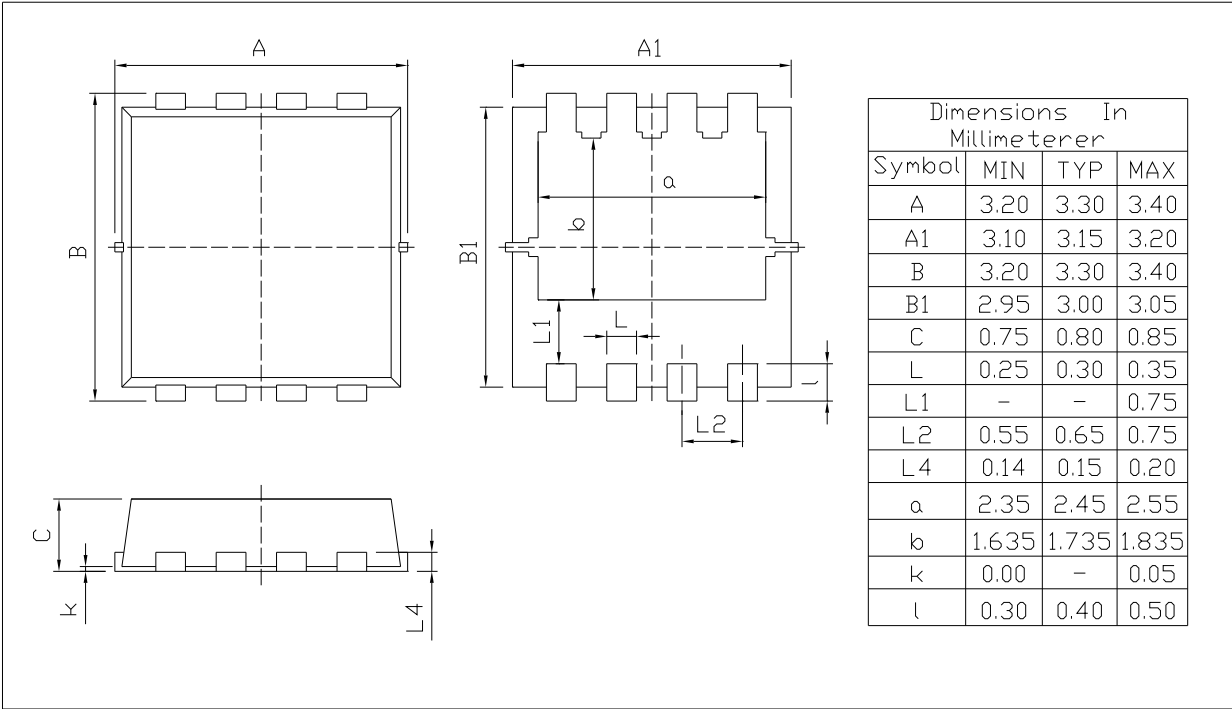
/ Electrical Characteristic Curve



/ Package Dimensions

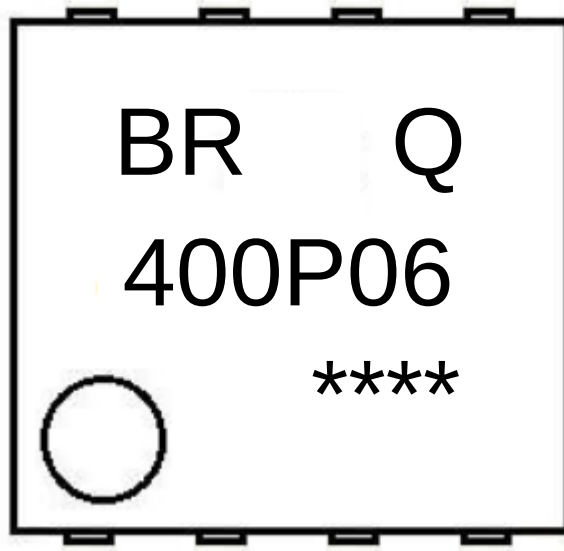
PDFN3X3A-8L

Unit:mm



Rev.00 202011

/ Marking Instructions



BR

Q

400P06

Note:

BR: Company Code

Q: Automobile halogen-free product Code

400P06: Product Type Code

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

BRCS400P06YBQ

Rev.A Aug.-2024