

BRCS080P016YB

Rev.A Aug.-2025

PDFN3×3A-8L P MOS

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

$V_{DS} (V) = -16V$ $I_D = -49.5A$ ($V_{GS} = \pm 12V$)

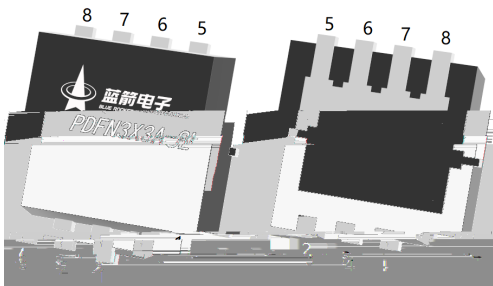
$R_{DS(ON)} @ -4.5V \leq 8m\Omega$ (Typ. $6.6m\Omega$)

$R_{DS(ON)} @ -2.5V \leq 15m\Omega$ (Typ. $9.8m\Omega$)

HF Product.

/

Notebook AC-in load switch, Battery protection charge/discharge.



/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-16	V
Drain Current - Continuous		$I_D(T_c=25)$	-49.5	A
Drain Current - Continuous		$I_D(T_c=100)$	-33	A
Drain Current – Pulsed		I_{DM}	-132	A
Gate-Source Voltage		V_{GS}	± 12	V
Power Dissipation		$P_D(T_c=25)$	27.5	W
Power Dissipation		$P_D(T_c=100)$	11	W
Single Pulse Avalanche Energy(L=0.5mH)		E_{AS}	160	mJ
Avalanche Current		I_{AS}	-15.5	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	
Thermal resistance, junction - ambient	$t \leq 10s$	$R_{\theta JA}$	27	/ W
	Steady-State		60	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	4.55	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu A$ $V_{GS}=0V$	-16	-18.5		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-12.8V$ $V_{GS}=0V$			-1	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 12V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.5	-0.76	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V$, $I_D=-15A$		6.6	8	m Ω
		$V_{GS}=-2.5V$, $I_D=-10A$		9.8	15	
		$V_{GS}=-1.8V$, $I_D=-5A$		18		
Diode Forward Voltage	V_{SD}	$I_S=-1A$, $V_{GS}=0V$			-1.2	V
Reverse Recovery Time	t_{rr}	$V_{DS}=-10V$, $I_D=-14A$		2.9		ns
Reverse Recovery Charge	Q_{rr}	$dI_{SD}/dt = 100 A/\mu s$		8		nC
Input Capacitance	C_{iss}	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1.0MHz$		2620		pF
Output Capacitance	C_{oss}			440		
Reverse Transfer Capacitance	C_{rss}			375		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		7.8		Ω

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	$V_{GS}=-4.5V, \quad V_{DS}=-10V,$ $I_D=-14A$		26.5		nC
Gate Source Charge	Q_{gs}			2.4		
Gate Drain Charge	Q_{gd}			9.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-4.5V \quad V_{DS}=-10V$ $I_D=-14A \quad R_G=3\Omega$		15.7		ns
Turn-On Rise Time	t_r			116		
Turn-Off Delay Time	$t_{d(off)}$			86.1		
Turn-Off Fall Time	t_f			121		

/ Electrical Characteristic Curve

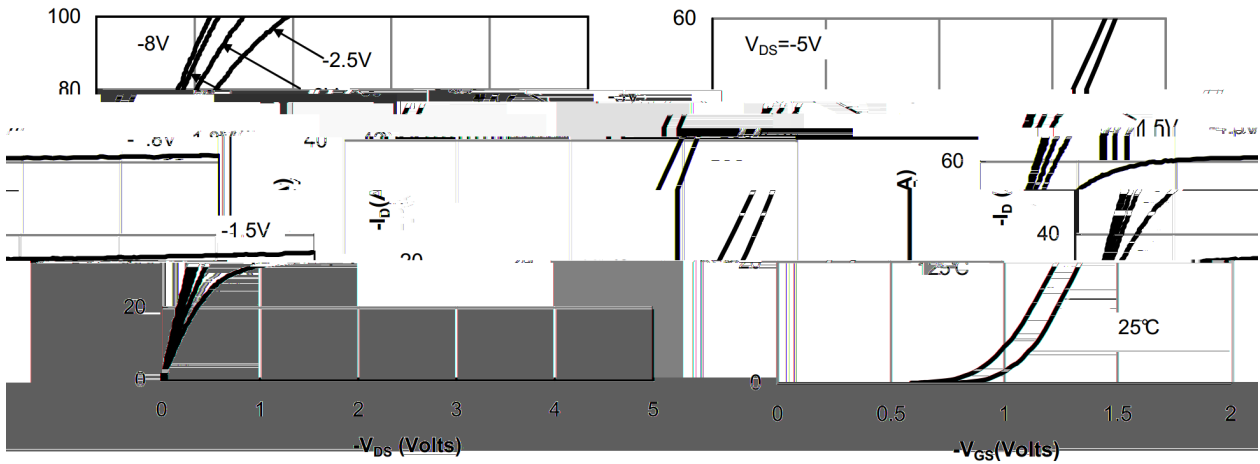


Figure 1: Ohmic region Characteristics

Figure 2: Transfer Characteristics

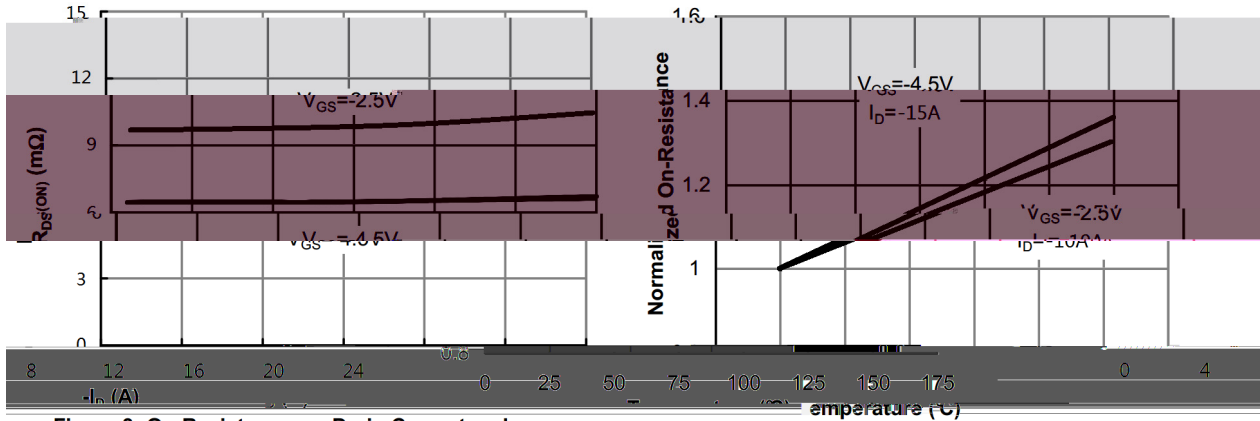


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

Figure 4: On-Resistance vs. Junction Temperature

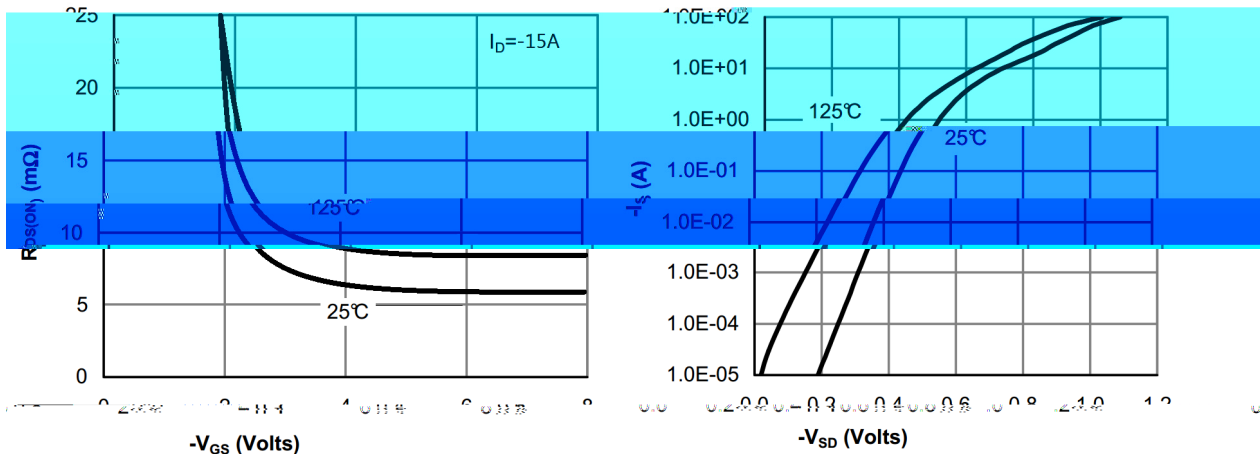
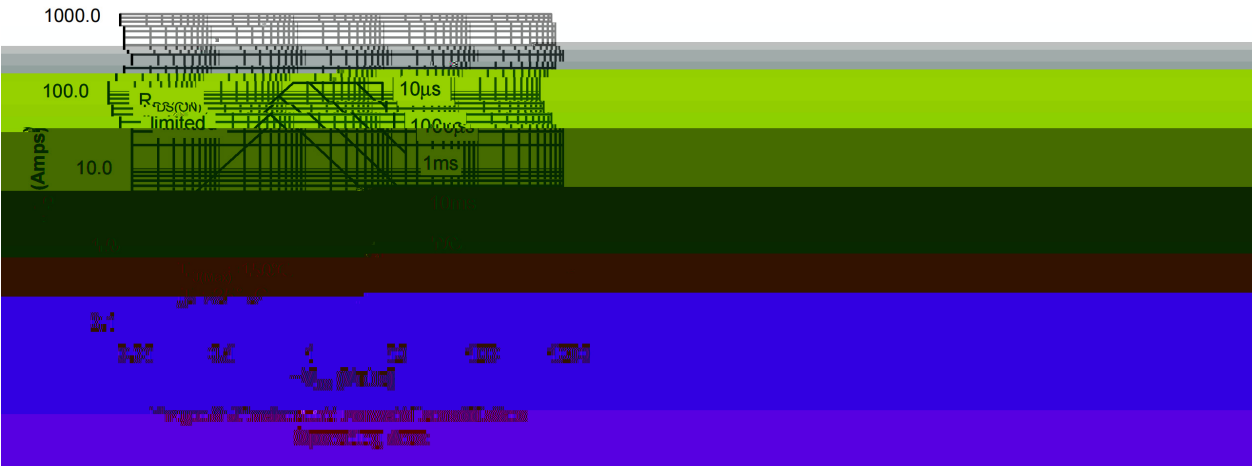
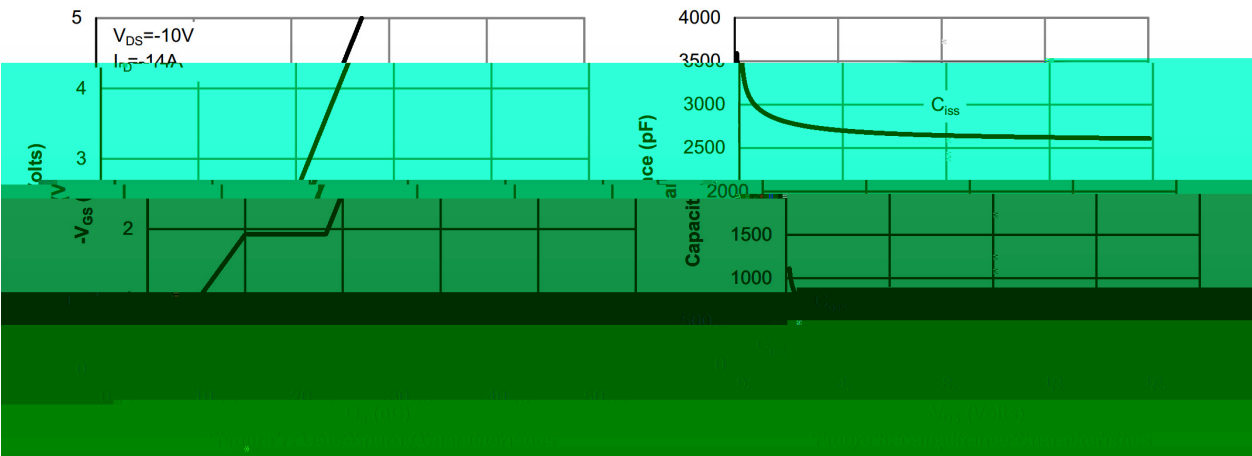


Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Pulsed Drain Current Characteristics

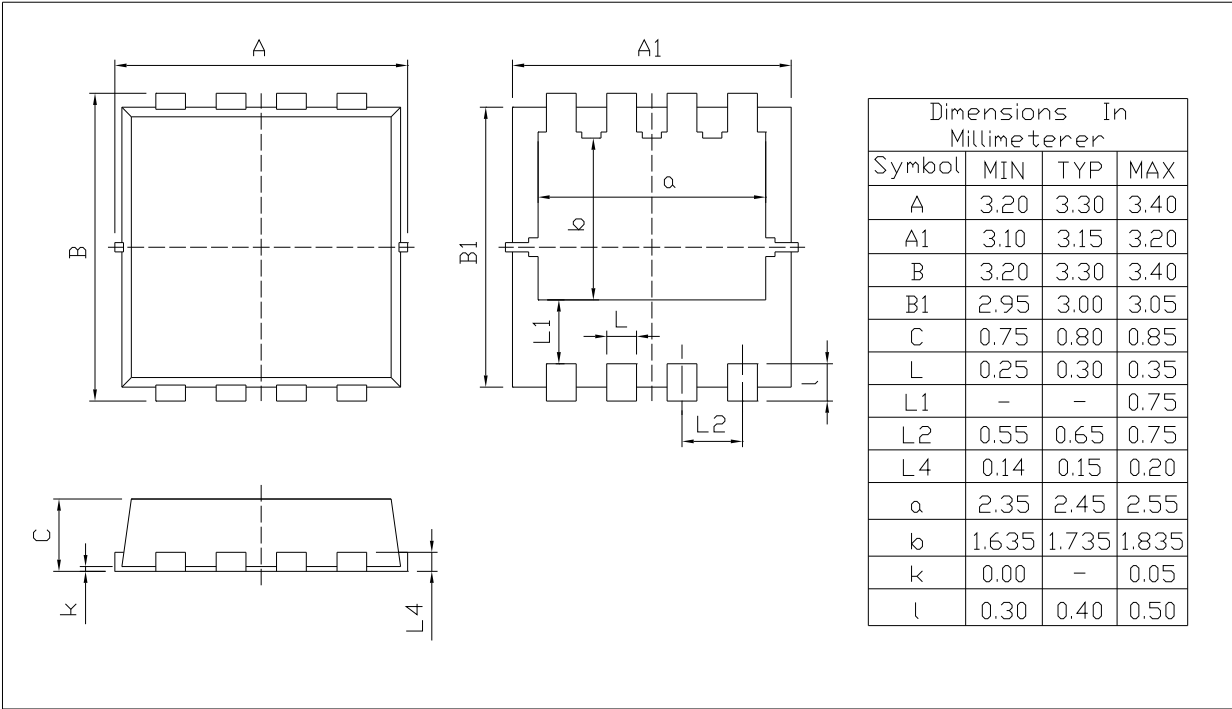
/ Electrical Characteristic Curve



/ Package Dimensions

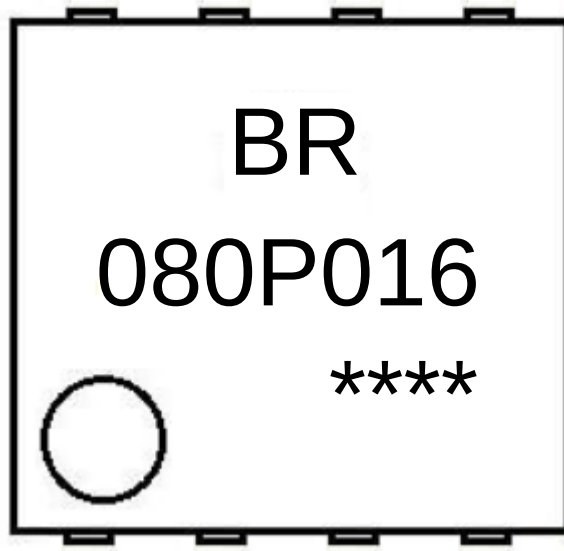
PDFN3X3A-8L

Unit:mm



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/ Marking Instructions



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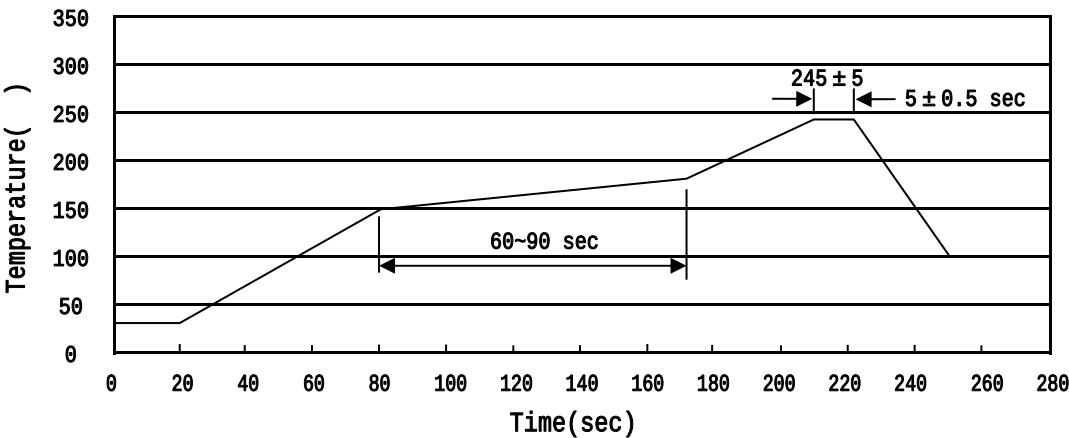
Note:

BR: Company Code

080P016: Product Type Code

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

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



Note:

- 1

150 180

60 90sec;

1.Preheating:150~180 , Time:60~90sec.
- 2

245±5

5±0.5sec;

2.Peak Temp.:245±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

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