

BRCS085P02YB

Rev.A Apr.-2024

DATA SHEET

描述 / Descriptions

PDFN3×3A-8L 塑封封装 P 沟道 MOS 场效应管。

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

特征 / Features

$V_{DS} (V) = -20V$ $I_D = -45A (V_{GS} = \pm 12V)$

$R_{DS(ON)} @ -4.5V \leq 8.5m\Omega$ (Typ.5.7m Ω)

$R_{DS(ON)} @ -2.5V \leq 12m\Omega$ (Typ.7.8m Ω)

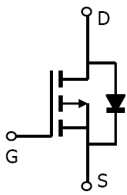
无卤产品。HF Product.

用途 / Applications

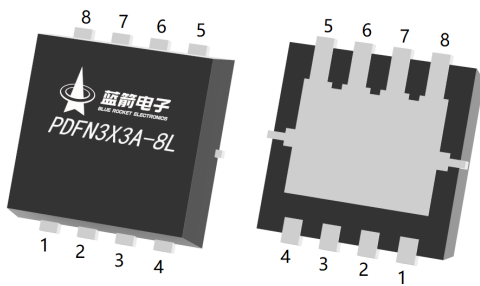
笔记本交流输入负载开关，电池保护充电/放电。

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

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



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

印章代码 / Marking

见印章说明。

See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V _{DS}	-20	V
Drain Current - Continuous	I _D (T _c =25°C)	-45	A
Drain Current – Pulsed	I _{DM}	-121	A
Gate-Source Voltage	V _{GS}	± 12	V
Power Dissipation	P _D (T _c =25°C)	28	W
Single Pulse Avalanche Energy(L=0.1mH)	E _{AS}	62.5	mJ
Avalanche Current(L=0.1mH)	I _{AS}	25	A
Junction and Storage Temperature Range	T _j , T _{stg}	-55 to 150	°C
Thermal resistance, junction - ambient	t ≤ 10s	25	°C / W
	Steady-State	58	
Thermal resistance, junction - case	Steady-State	4.46	

电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =-250μA V _{GS} =0V	-20	-25.8		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V V _{GS} =0V			-1	μA
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} = ±12V			± 100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250μA	-0.35	-0.85	-1.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-15A		5.7	8.5	mΩ
		V _{GS} =-2.5V, I _D =-10A		7.8	12	
		V _{GS} =-1.8V, I _D =-5A		13.5	25	
Diode Forward Voltage	V _{SD}	I _S =-1A, V _{GS} =0V			-1.2	V
Input Capacitance	C _{iss}	V _{DS} =-10V V _{GS} =0V f=1.0MHz		3500		pF
Output Capacitance	C _{oss}			530		
Reverse Transfer Capacitance	C _{rss}			430		
Gate resistance	R _g	V _{GS} =0V V _{DS} =0V f=1MHz		8.5		Ω
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-14A		45		nC
Gate Source Charge	Q _{gs}			11		
Gate Drain Charge	Q _{gd}			11.5		

电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-4.5V$ $V_{DS}=-10V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		18.7		ns
Turn-On Rise Time	t_r			34		
Turn-Off Delay Time	$t_{d(off)}$			140		
Turn-Off Fall Time	t_f			62		

电参数曲线图 / Electrical Characteristic Curve

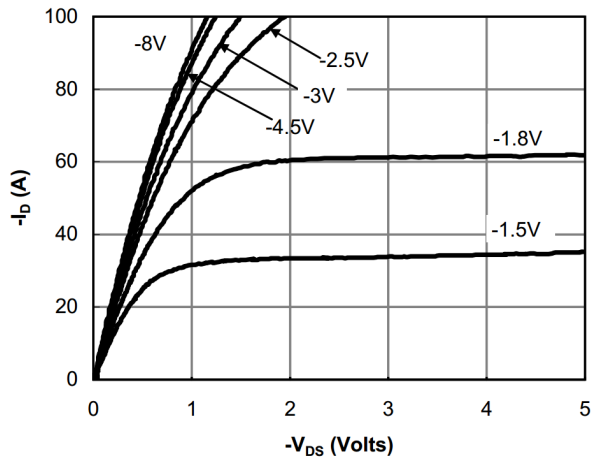


Fig 1: On-Region Characteristics

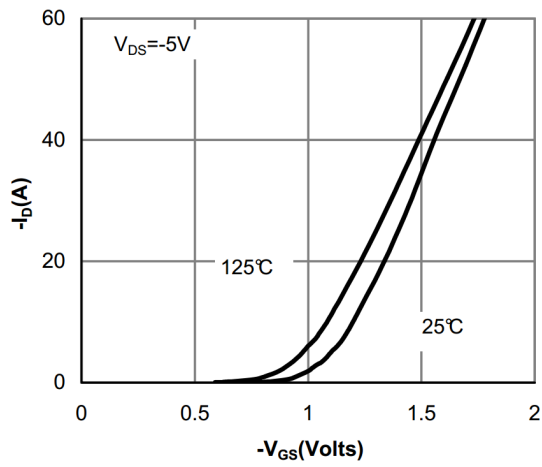


Figure 2: Transfer Characteristics

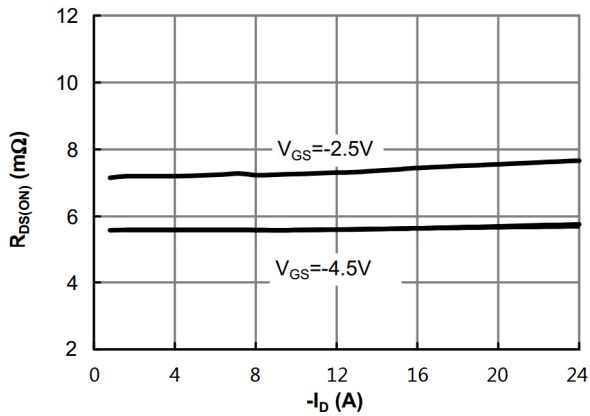


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

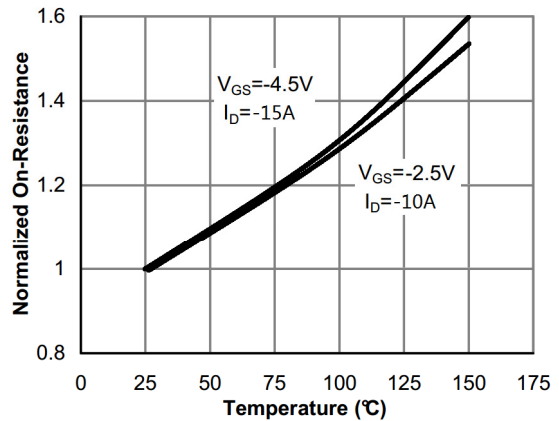


Figure 4: On-Resistance vs. Junction Temperature

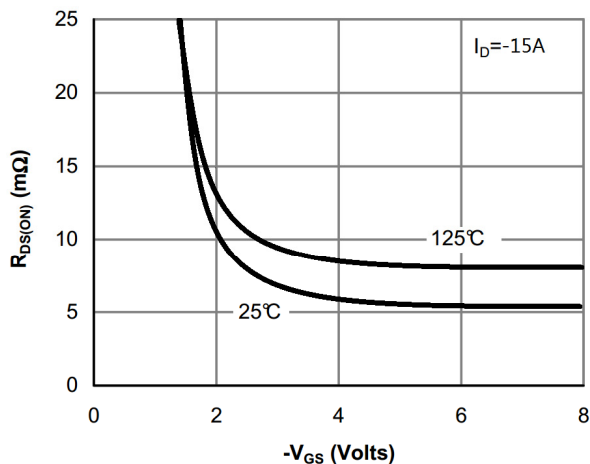


Figure 5: On-Resistance vs. Gate-Source Voltage

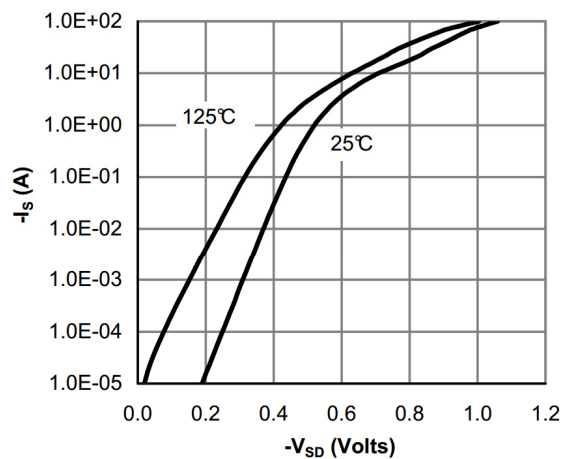


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

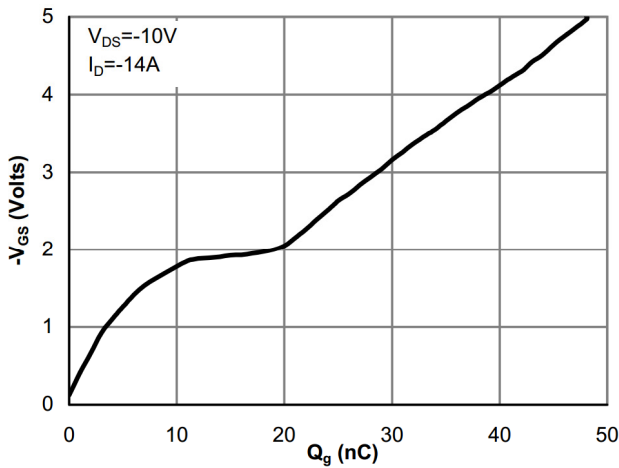


Figure 7: Gate-Charge Characteristics

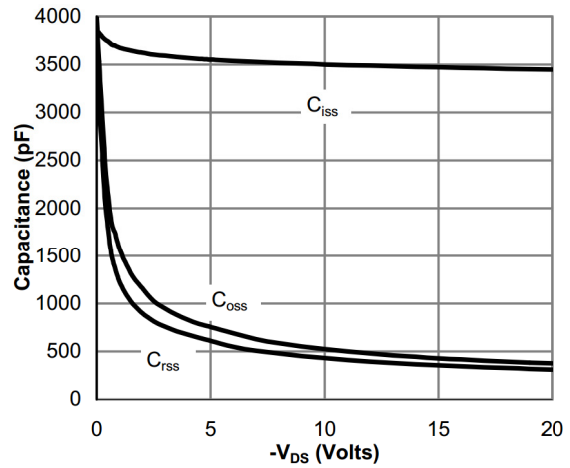


Figure 8: Capacitance Characteristics

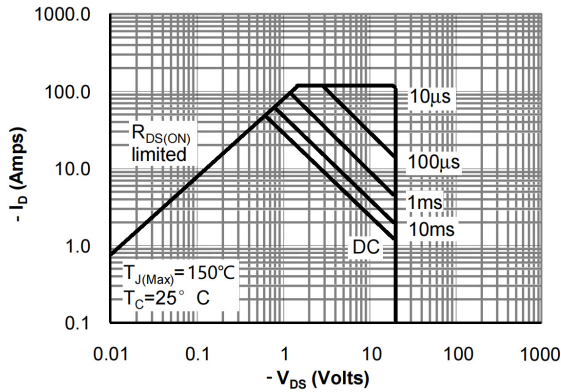


Figure 9: Maximum Forward Biased Safe Operating Area

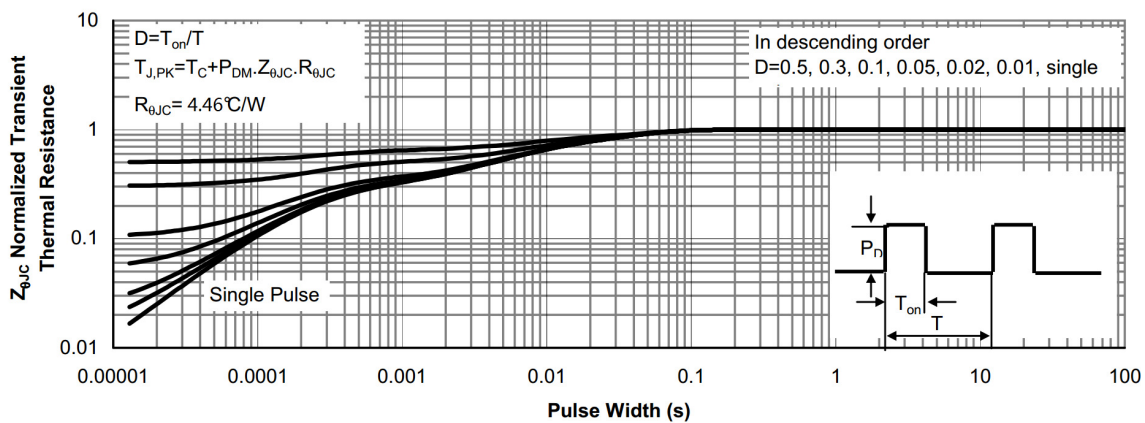
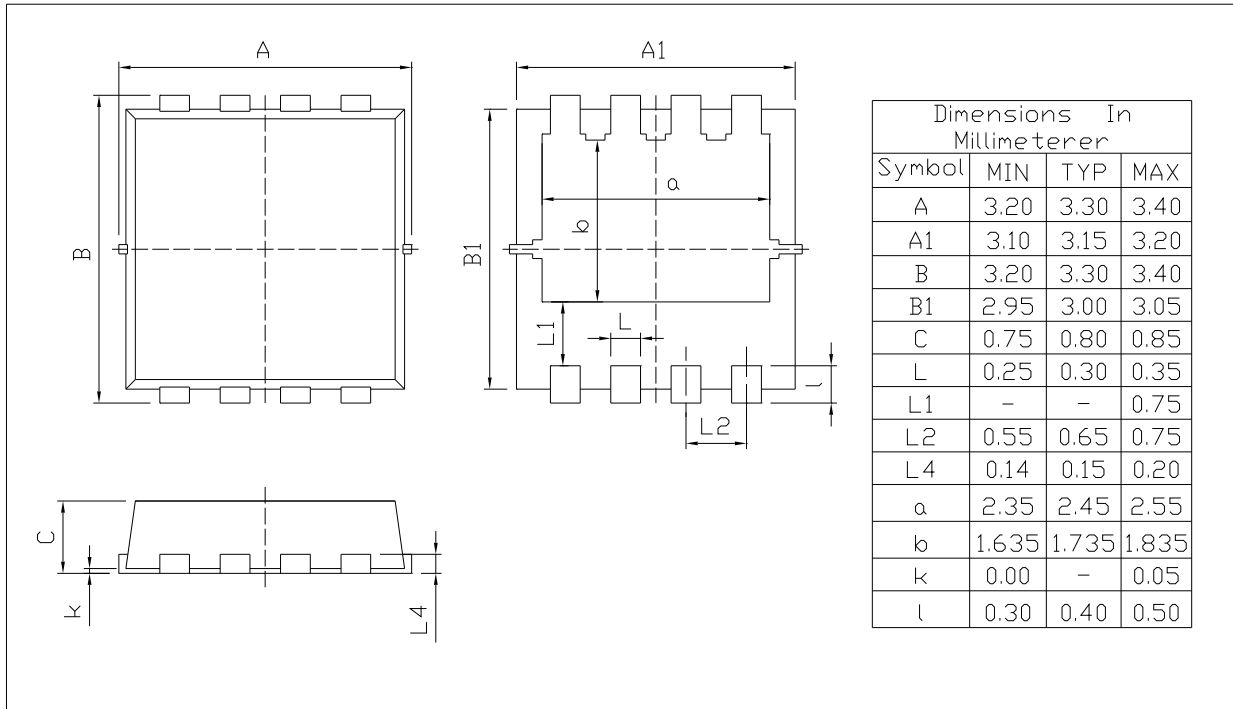


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

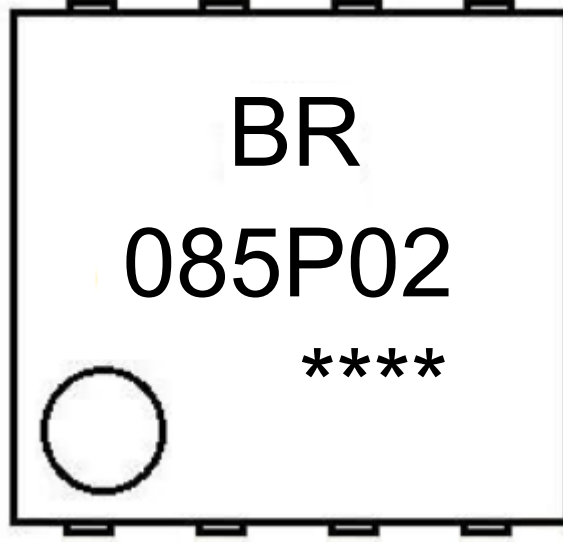
PDFN3X3A-8L

Unit:mm



Rev.00 202011

印章说明 / Marking Instructions



说明：

BR： 为公司代码

085P02： 为型号代码

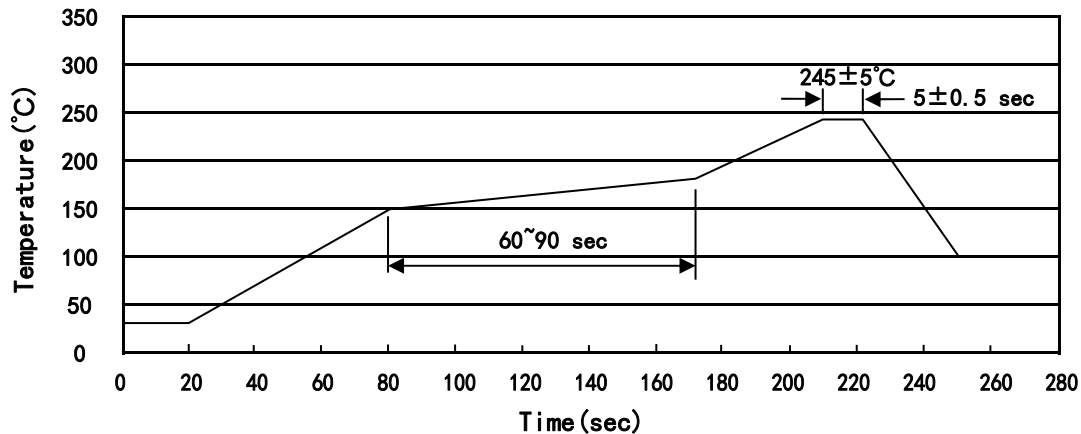
****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

085P02: Product Type Code

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

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)


说明：

- 1、预热温度 150~180°C，时间 60~90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

- 1.Preheating:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	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

使用说明 / Notices