

BRCS140P03YB

Rev.B Oct.-2024

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

$V_{DS} (V) = -30V$

$I_D = -34 A (V_{GS} = \pm 20V)$

$R_{DS(ON)}@10V \leq 14mR (Typ. 12.8mR)$

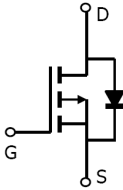
无卤产品。HF Product.

用途 / Applications

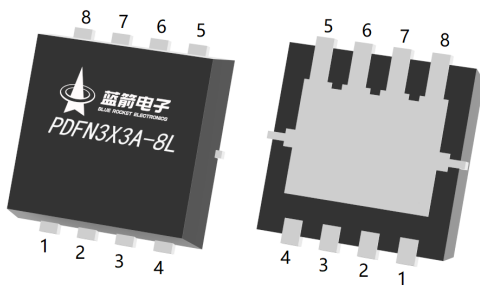
用于高功率 DC/DC 转换和功率开关。

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

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_{DSS}	-30	V
Drain Current	$I_D(T_C=25^\circ\text{C})$	-34	A
Drain Current - Pulsed	I_{DM}	-80	A
Gate-Source Voltage	V_{GS}	± 20	V
Single Pulsed Avalanche Energy	E_{AS}	210	mJ
Avalanche Current	I_{AS}	-20	A
Power Dissipation	$P_D(T_C=25^\circ\text{C})$	29	W
Operating and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Junction-to-Ambient	$t \leq 10$	40	$^\circ\text{C}/\text{W}$
Junction-to-Ambient	Steady-State		
Junction-to-Case	Steady-State	$R_{\theta JC}$	

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	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V V _{GS} =0V			-1	μA
Gate-Body leakage current	I _{GSS}	V _{DS} =0V V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250μA	-1	-1.45	-2.5	V
Static Drain-Source On-Resistance	R _{Ds(ON)}	V _{GS} =-10V I _D =-20A		12.8	14	mΩ
		V _{GS} =-4.5V I _D =-10A		17.9	20	
Diode Forward Voltage	V _{SD}	I _S =-1A V _{GS} =0V			1.2	V
Gate resistance	R _g	f=1MHz		5		Ω
Input Capacitance	C _{iss}	V _{GS} =0V V _{DS} =-25V f=1MHz		2300		pF
Output Capacitance	C _{oss}			370		
Reverse Transfer Capacitance	C _{rss}			350		
Total Gate Charge	Q _{g(10V)}	V _{GS} =-10V V _{DS} =-15V I _D =-12A		21		nC
Total Gate Charge	Q _{g(4.5V)}			11		
Gate-Source Charge	Q _{gs}			6		
Gate-Drain Charge	Q _{gd}			3		
Turn-on Delay Time	t _{d(ON)}	V _{GS} =-10V V _{DS} =-15V R _L =1.3Ω R _{GEN} =3Ω		10.5		ns
Turn-on Rise Time	t _r			8.5		
Turn-off Delay Time	t _{d(OFF)}			30		
Turn-off Fall Time	t _f			11.5		

电参数曲线图 / Electrical Characteristic Curve

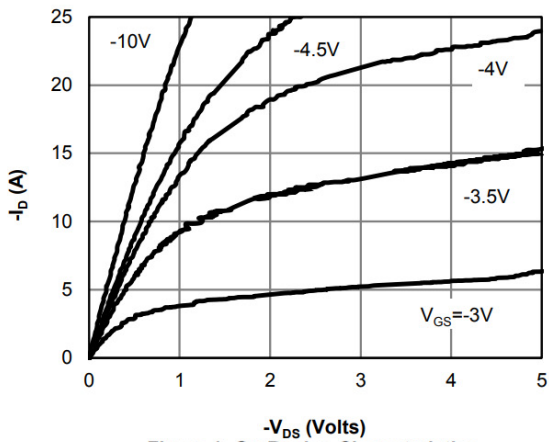


Figure 1: On-Region Characteristics

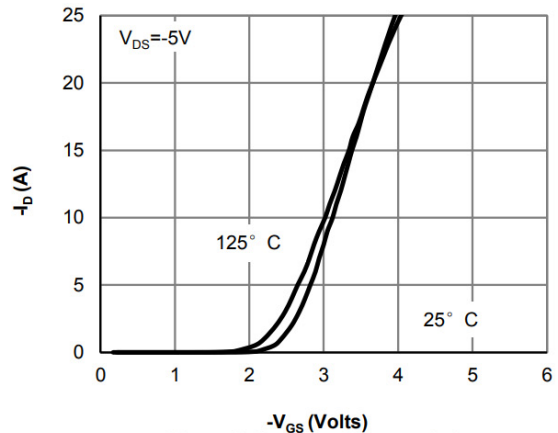


Figure 2: Transfer Characteristics

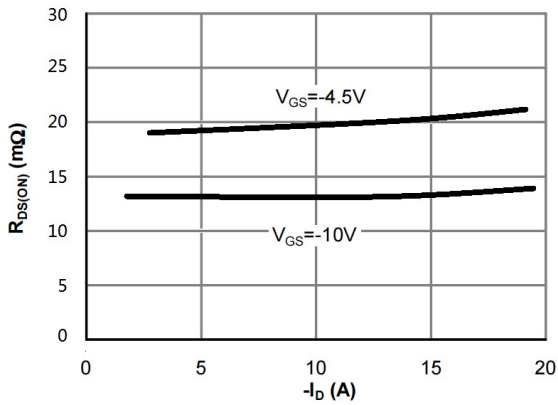


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

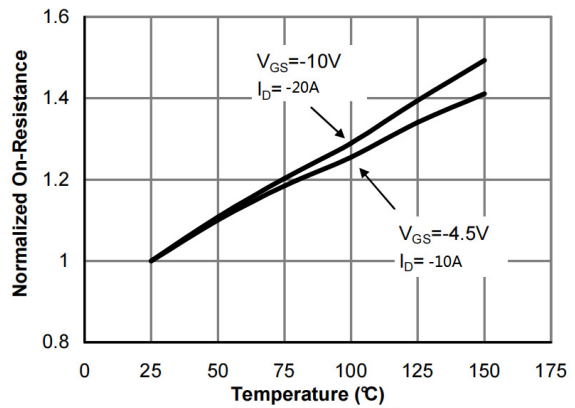


Figure 4: On-Resistance vs. Junction Temperature

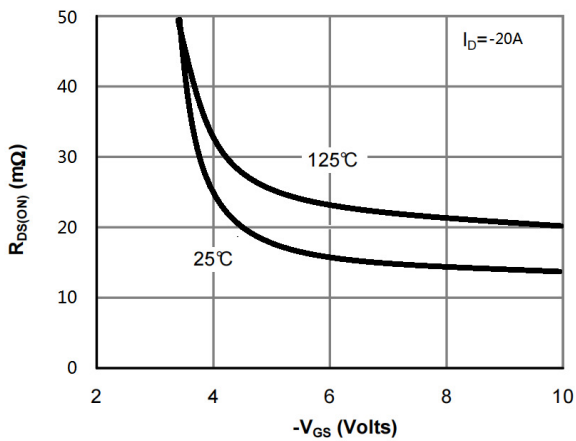


Figure 5: On-Resistance vs. Gate-Source Voltage

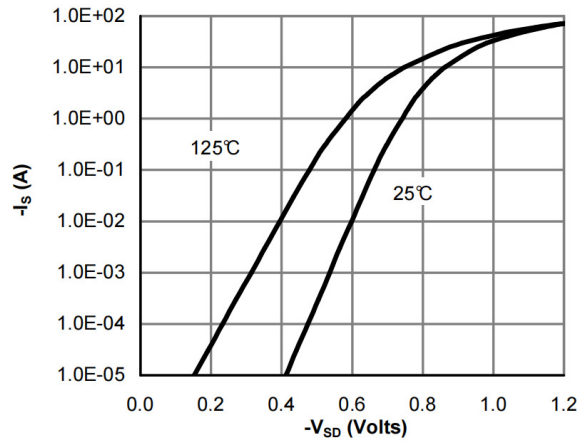


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

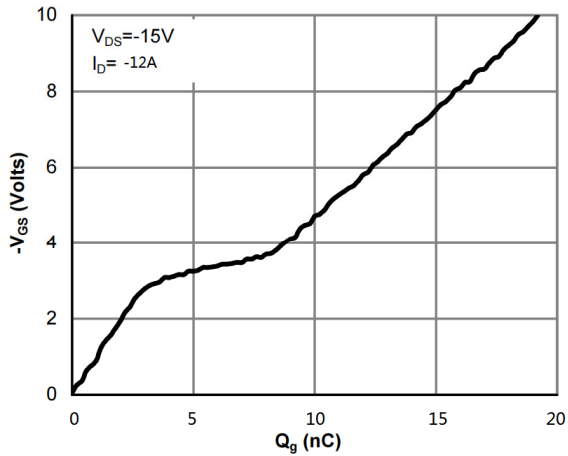


Figure 7: Gate-Charge Characteristics

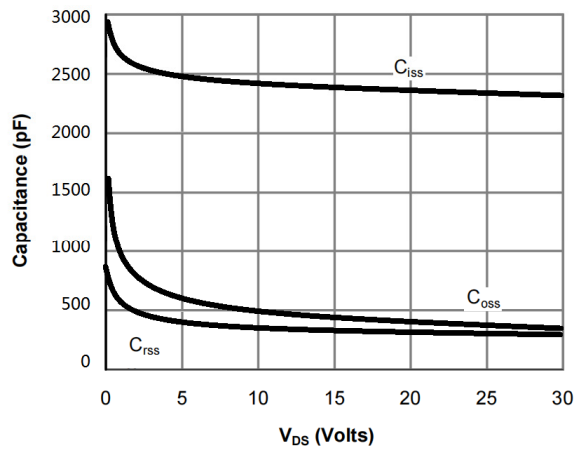


Figure 8: Capacitance Characteristics

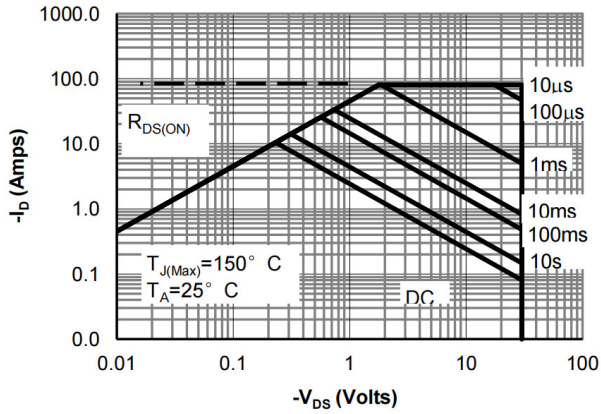


Figure 9: Maximum Forward Biased Safe Operating Area

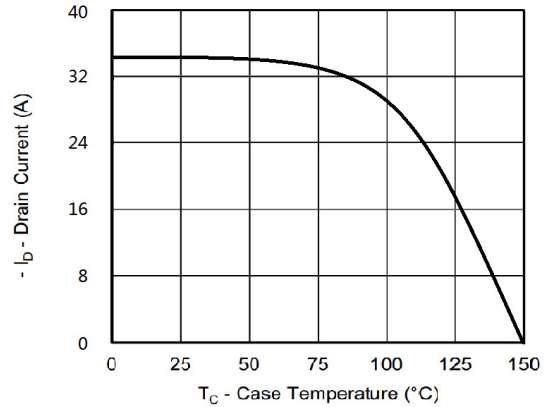


Figure 10: Maximum Continuous Drain Current vs Case Temperature

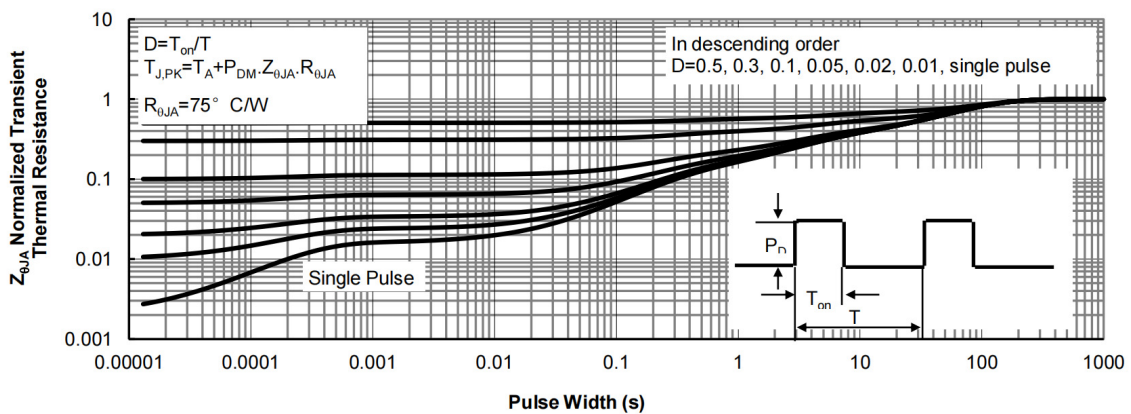


Figure 11: Normalized Maximum Transient Thermal Impedance

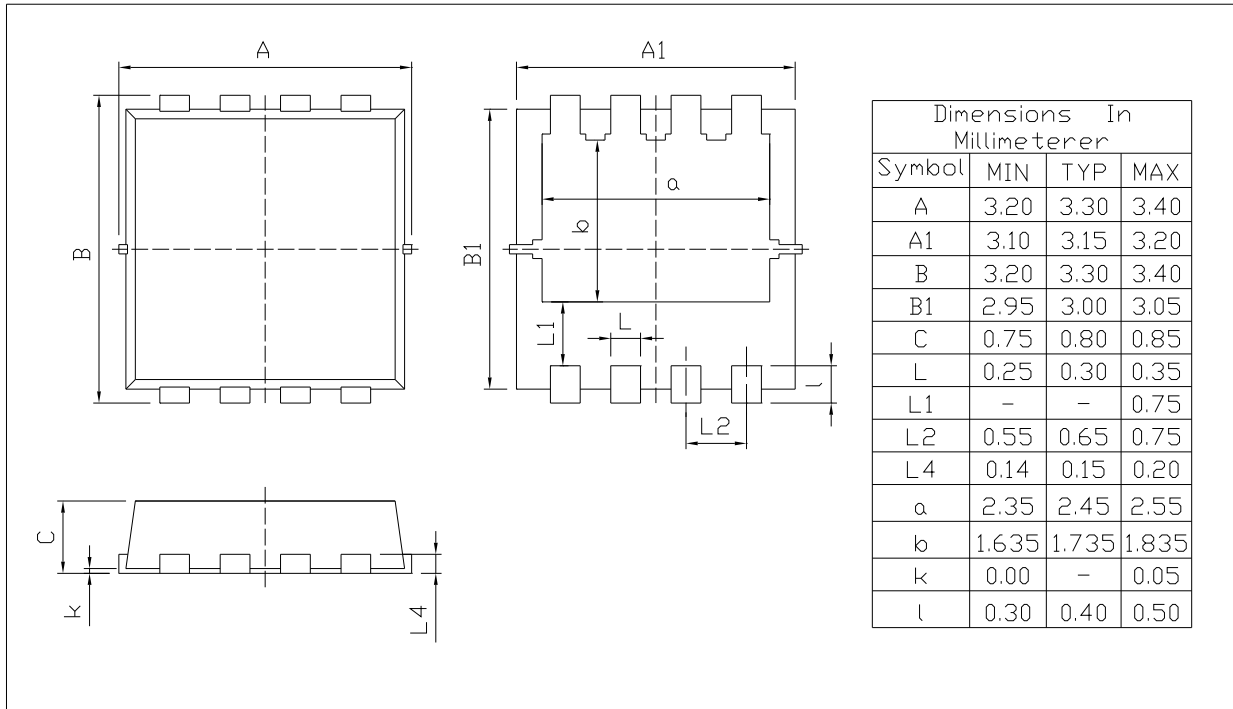
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外形尺寸图 / Package Dimensions

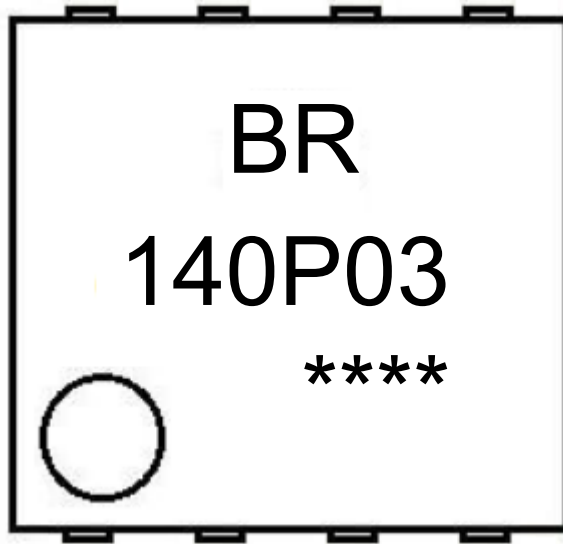
PDFN3X3A-8L

Unit:mm



Rev.00 202011

印章说明 / Marking Instructions



说明：

BR： 为公司代码

140P03： 为型号代码

****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

140P03: 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