

描述 / Descriptions

PDFN5×6 封装 N 沟道场效应管。

N-Channel MOSFET in a PDFN5×6 Plastic Package.

特征 / Features

$V_{DS}(V)=500V$ $I_D=3A$

$R_{DS(ON)}@10V<1.6\Omega$ (Typ. 1.5 Ω)

$R_{DS(ON)}@6V<2.0\Omega$ (Typ. 1.6 Ω)

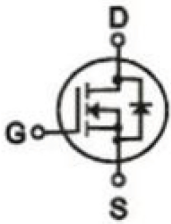
无卤产品。HF Product.

用途 / Applications

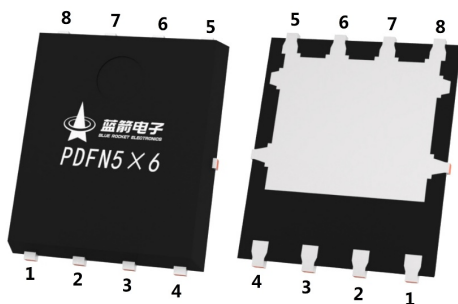
用于高频开关电源、电子镇流器、LED 电源、高速风筒。

Used in high-frequency switching power supply, electronic ballast, LED power supply and high-speed air duct.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1、2、3: S PIN4: G PIN5、6、7、8: 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}	500	V
Drain Current	I _D (T _c =25°C)	3	A
Drain Current - Pulsed	I _{DM}	9.2	A
Gate-Source Voltage	V _{GSS}	±30	V
Avalanche Current	I _{AR}	7	A
Single Pulsed Avalanche Energy	E _{AS}	218	mJ
Power Dissipation (T _c =25°C)	P _D	33	W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to 150	°C
Thermal resistance, Junction to Case	R _{θJC}	3.79	°C/W

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}	V _{GS} =0V I _D =250μA	500	560		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =500V V _{GS} =0V			1	μA
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±30V V _{DS} =0V			±0.1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250μA	2	3.2	4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V I _D =2.5A		1.5	1.6	Ω
	R _{DS(on)}	V _{GS} =6V I _D =1A		1.6	2.0	Ω
Input Capacitance	C _{iss}	V _{DS} =25V V _{GS} =0V f=1.0MHz		570		pF
Output Capacitance	C _{oss}			150		pF
Reverse Transfer Capacitance	C _{rss}				10	
Total Gate Charge	Q _G	V _{DS} = 400V, I _D = 5.0A, V _{GS} = 10V		25		nC
Gate-Source Charge	Q _{GS}			6		
Gate-Drain Charge	Q _{GD}			8		

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	$t_{d(on)}$	$V_{DD}=250V$ $I_D=5.0A$ $R_G=25\Omega$		32		ns
Turn-On Rise Time	t_r			55		
Turn-Off Delay Time	$t_{d(off)}$			150		
Turn-Off Fall Time	t_f			73		
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0 V,$ $I_S = 5.0A$			1.4	V
Reverse Recovery Time	t_{rr}	$V_{GS} = 0V,$ $I_S = 5.0A,$ $di_F/dt = 100 A/\mu s$		350		nS
Reverse Recovery Charge	Q_{rr}			1600		nC

电参数曲线图 / Electrical Characteristic Curve

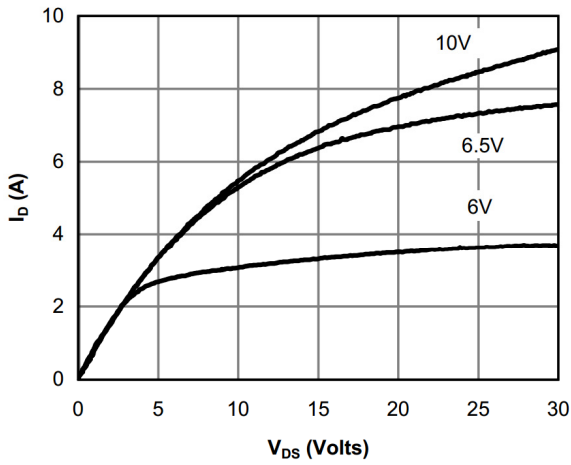


Fig 1: On-Region Characteristics

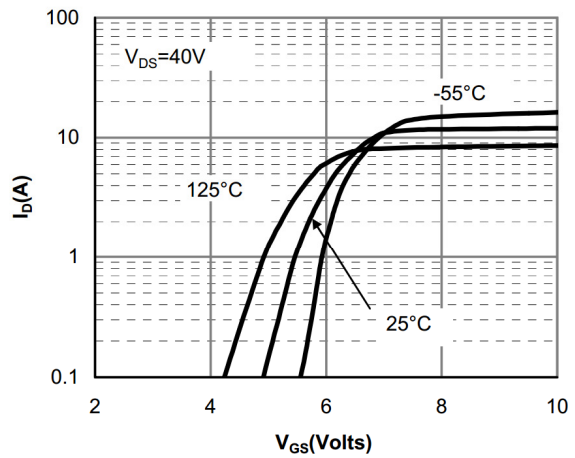


Figure 2: Transfer Characteristics

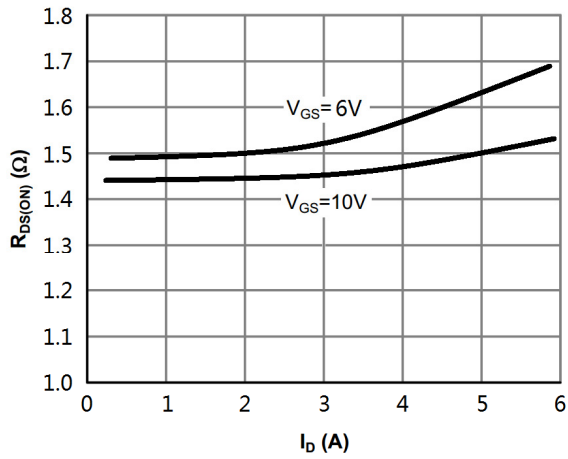


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

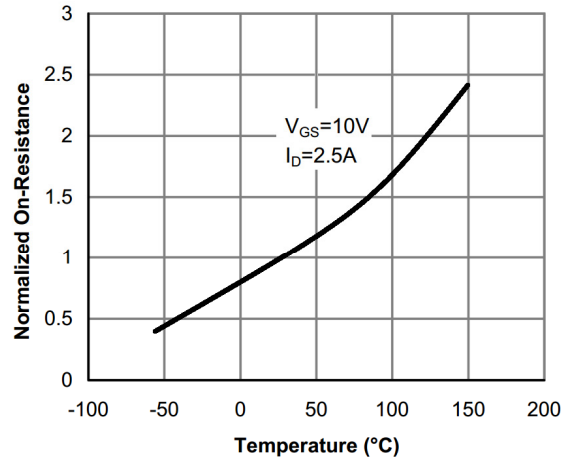


Figure 4: On-Resistance vs. Junction Temperature

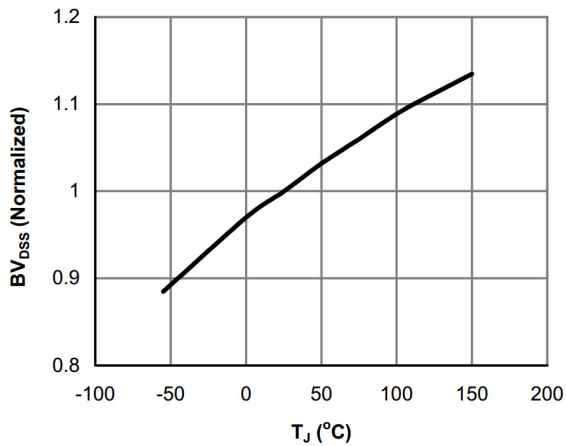


Figure 5: Break Down vs. Junction Temperature

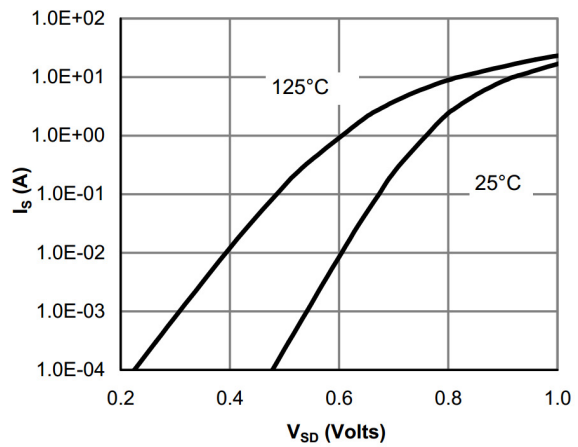


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

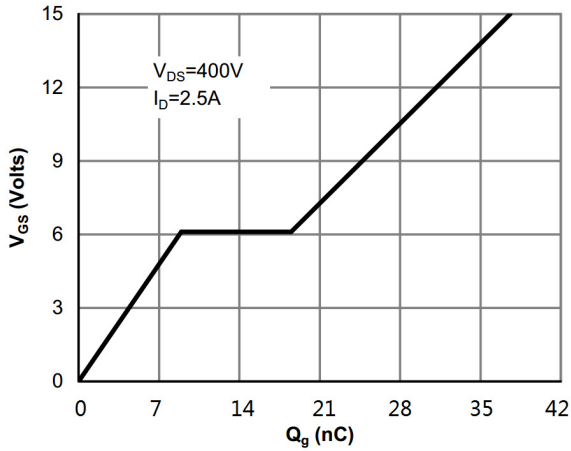


Figure 7: Gate-Charge Characteristics

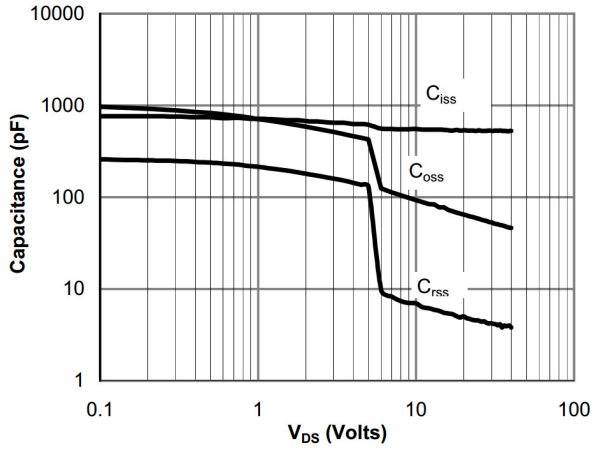


Figure 8: Capacitance Characteristics

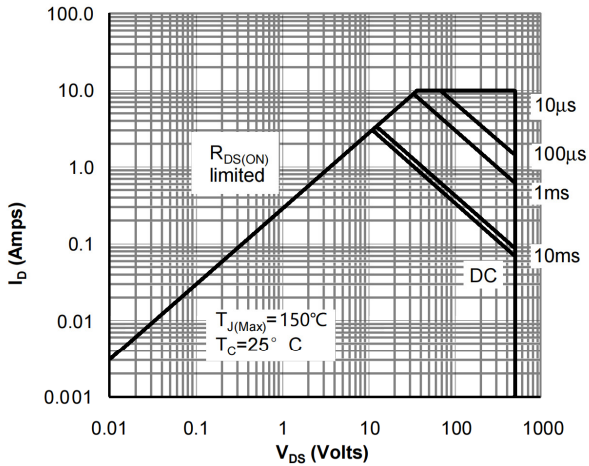


Figure 9: Maximum Forward Biased Safe Operating Area

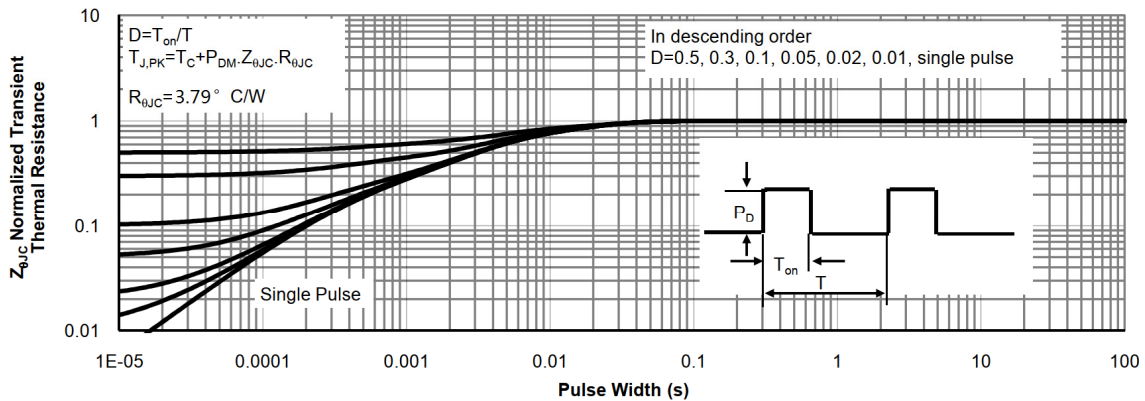
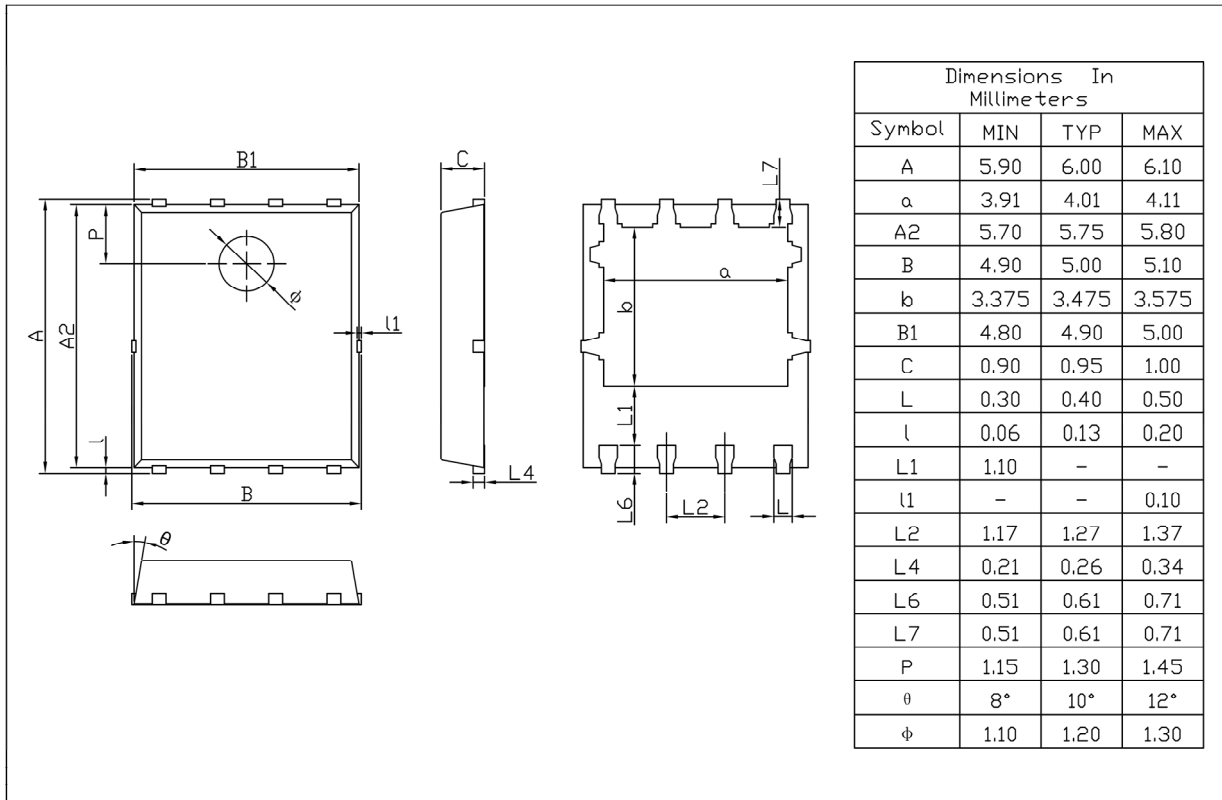


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

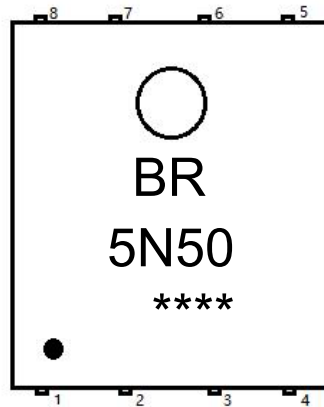
PDFN5 × 6

Unit:mm



Rev.01 202209

印章说明 / Marking Instructions



说明：

BR： 为公司代码

5N50： 为型号代码

****： 为生产批号代码，随生产批号变化

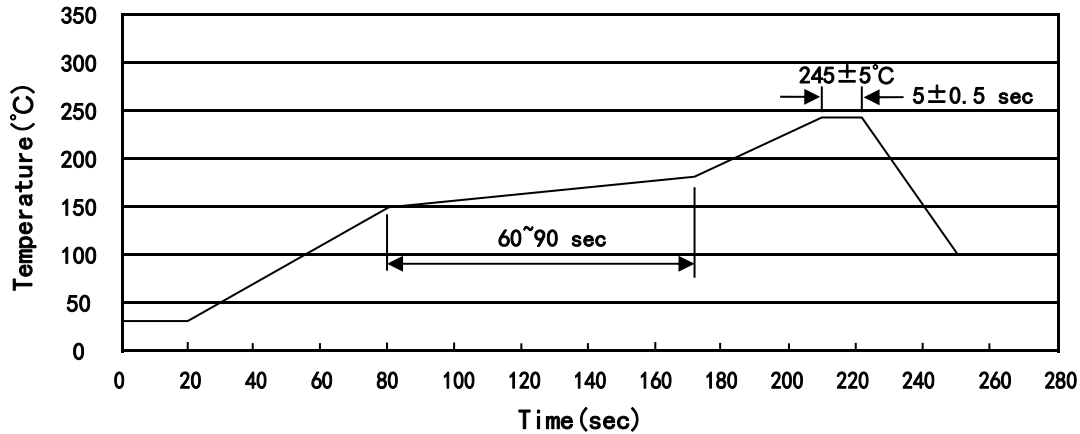
Note：

BR： Company Code

5N50： 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
PDFN5×6	5,000	2	10,000	6	60,000	13"×12	360×360×50	380×335×366

使用说明 / Notices