描述 / Descriptions

PDFN5×6 封装 N 沟道场效应管。
N-Channel MOSFET in a PDFN5×6 Plastic Package .

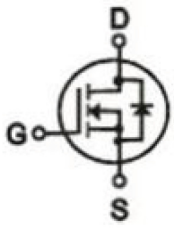
特征 / Features

V_{DS}=60V I_D=67A
$R_{DS(on)}$@10V≤7mΩ(Type. 5.7mΩ)
$R_{DS(on)}$@6V≤12mΩ(Type. 6.2mΩ)
无卤产品。HF Product.

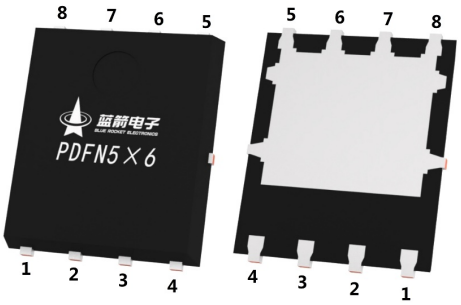
用途 / Applications

该器件非常适合消费电子、电信、工业应用的升压转换器和同步整流器电源和 LED 背光。
This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



Pin	极性
1	S
2	S
3	S
4	G
5	D
6	D
7	D
8	D

印章代码 / Marking

见印章说明。
See Marking Instructions.

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

参数 Parameter		符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage		V_{DSS}	60	V
Drain Current		I_D(Tc=25℃)	67	A
Pulsed Drain Current		I_{DM}	212	A
Gate-Source Voltage		V_{GS}	±20	V
Single Pulsed Avalanche Energy(L=0.5mH)		E_{AS}	720	mJ
Avalanche Current		I_{AS}	41	A
Total Power Dissipation		P_D(Tc=25℃)	60	W
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to 150	℃
Thermal Resistance-Junction to Ambient	Steady-State	$R_{\theta JA}$	60	℃/W
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	2.08	

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

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=250uA, V_{GS}=0V	60	70		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1.0	uA
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=250uA	2.0	2.9	4.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=20A		5.7	7	mΩ
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=6V, I_D=10A		6.2	12	mΩ
Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS}=0V			1.2	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		5590		pF
Output Capacitance	C_{oss}			295		
Reverse Transfer Capacitance	C_{rss}			185		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		0.77		Ω
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=30V, I_D=20A		53		nC
Gate Source Charge	Q_{gs}			17		
Gate Drain Charge	Q_{gd}			5		

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

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}=10V V_{DS}=30V R_L=1.5Ω R_{GEN}=3Ω		21		ns
Turn-On Rise Time	t_r			23		
Turn-Off Delay Time	$t_{d(off)}$			35		
Turn-Off Fall Time	t_f			4.2		

电参数曲线图 / Electrical Characteristic Curve

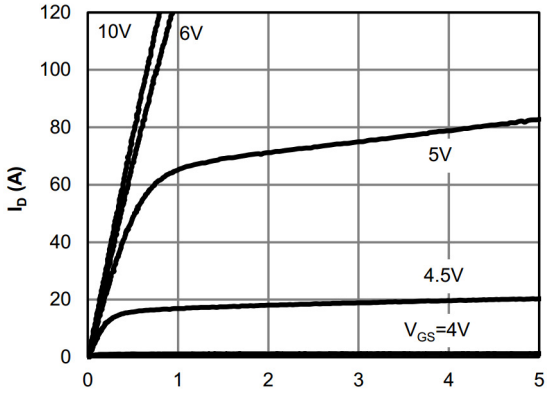


Figure 1: On-Region Characteristics

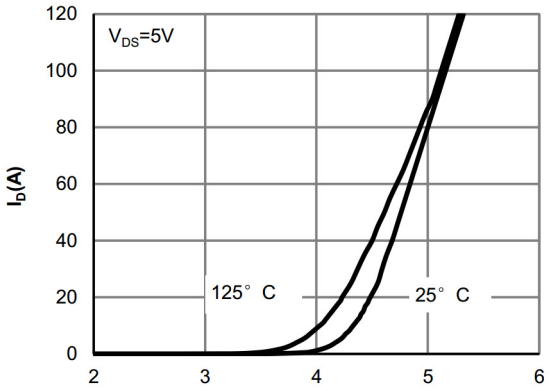


Figure 2: Transfer Characteristics

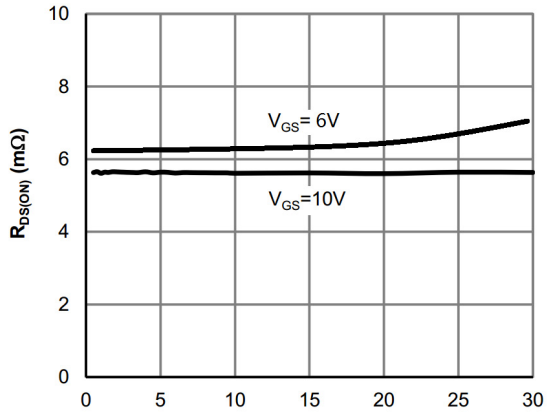


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

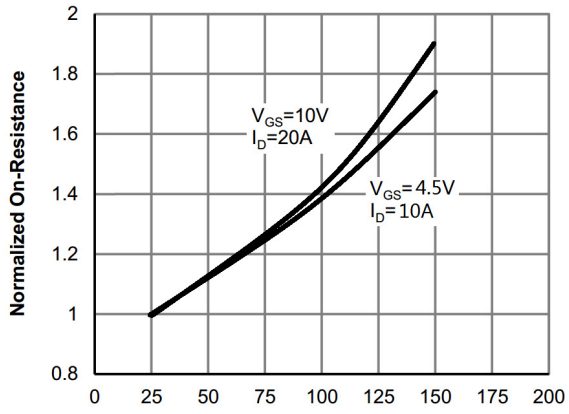


Figure 4: On-Resistance vs. Junction Temperature

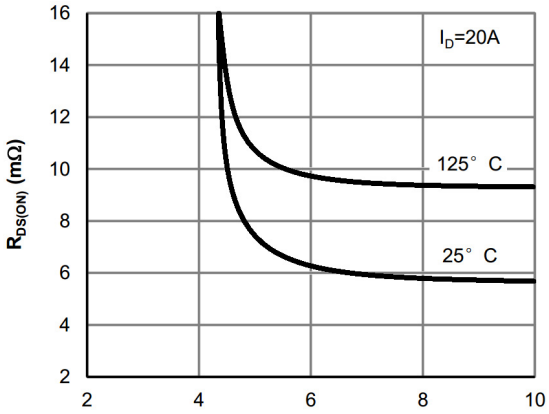


Figure 5: On-Resistance vs. Gate-Source Voltage

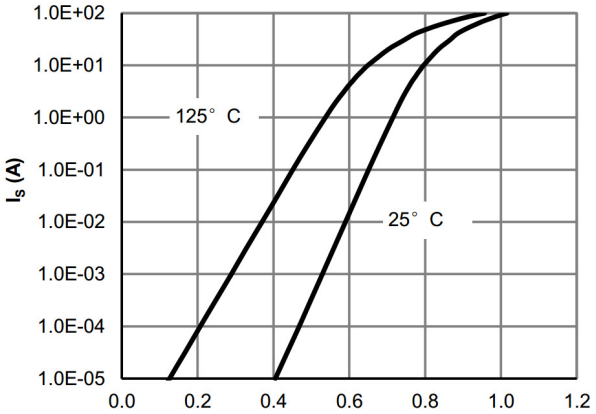


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

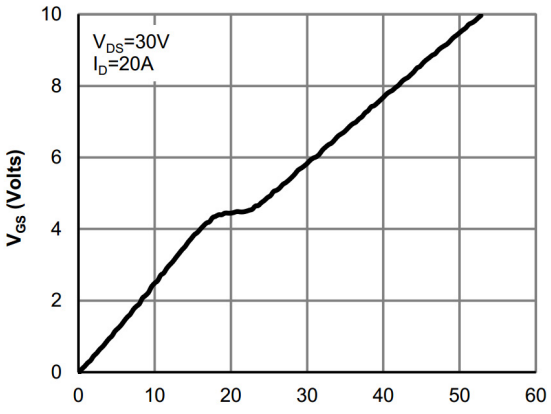


Figure 7: Gate-Charge Characteristics

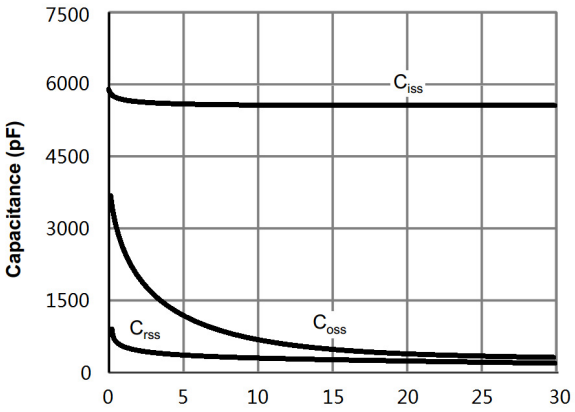


Figure 8: Capacitance Characteristics

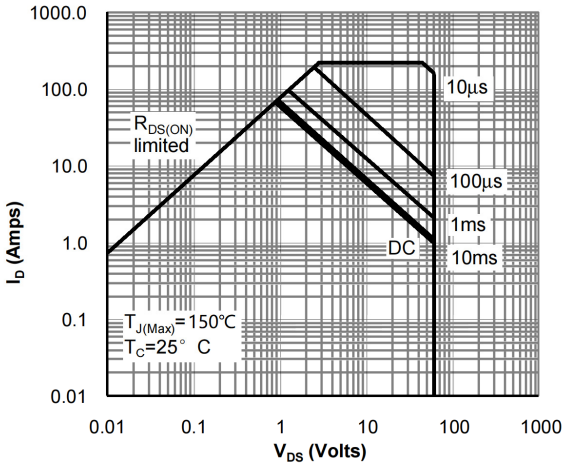


Figure 9: Maximum Forward Biased Safe Operating Area

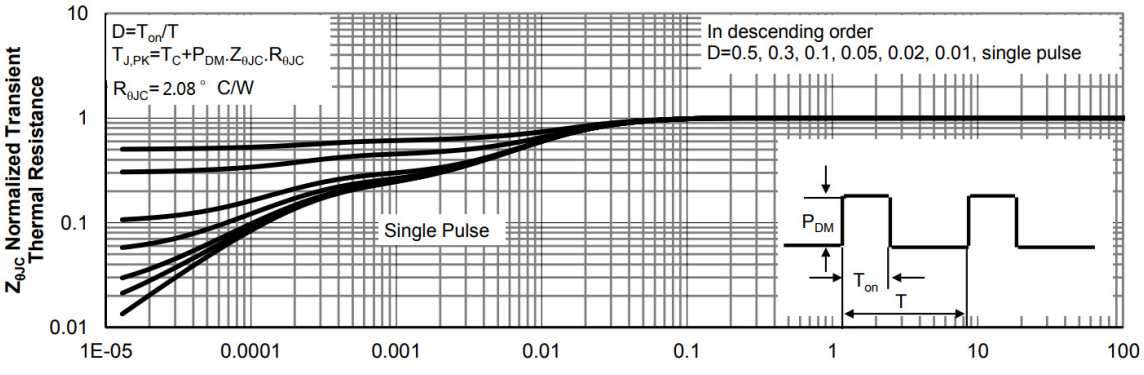
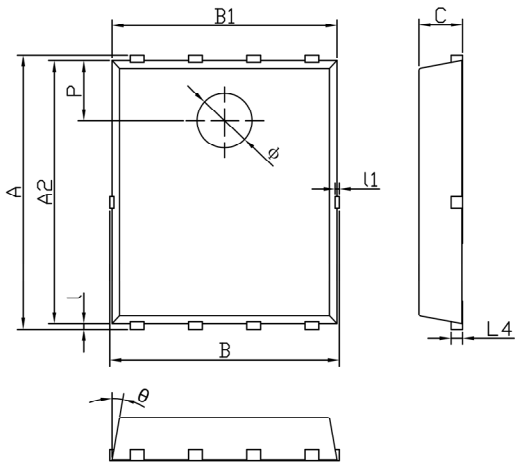


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

PDFN5×6 Unit:mm



Dimensions In Millimeters			
Symbol	MIN	TYP	MAX
A	5.90	6.00	6.10
a	3.91	4.01	4.11
A2	5.70	5.75	5.80
B	4.90	5.00	5.10
b	3.375	3.475	3.575
B1	4.80	4.90	5.00
C	0.90	0.95	1.00
L	0.30	0.40	0.50
l	0.06	0.13	0.20
L1	1.10	-	-
l1	-	-	0.10
L2	1.17	1.27	1.37
L4	0.21	0.26	0.34
L6	0.51	0.61	0.71
L7	0.51	0.61	0.71
P	1.15	1.30	1.45
θ	8°	10°	12°
Φ	1.10	1.20	1.30

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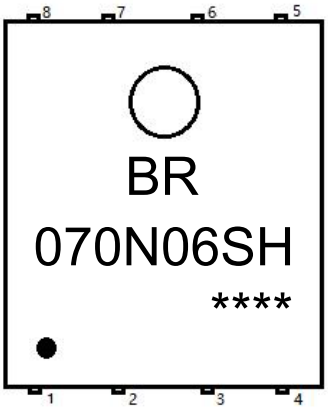
印章说明 / Marking Instructions



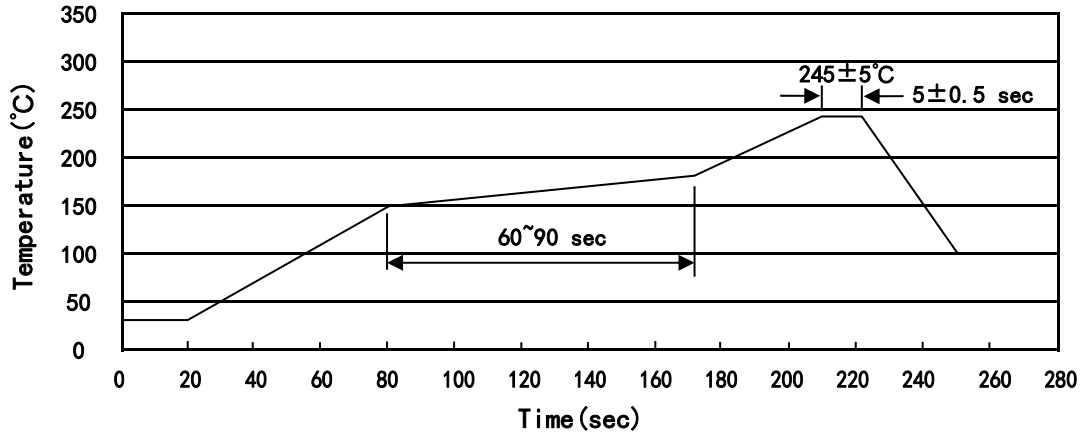
说明：

BR：	为公司代码
070N06SH：	为型号代码
****：	为生产批号代码，随生产批号变化

Note：

BR：	Company Code
070N06SH：	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℃，时间 60～90sec;

2、峰值温度 245±5℃，时间持续为 5±0.5sec;

3、焊接制程冷却速度为 2～10℃/sec.

Note:

1.Preheating:150~180℃, Time:60~90sec.

2.Peak Temp.:245±5℃, Duration:5±0.5sec.

3. Cooling Speed: 2~10℃/sec.

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

温度：260±5℃ 时间：10±1 sec. Temp.:260±5℃ 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：mm³)		
	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