

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

$V_{DS}(V)=30\text{ V}$ $I_D=212\text{ A}$

$R_{DS(ON)}@10V \leq 1.3\text{ m}\Omega$ (Typ. $1.2\text{ m}\Omega$)

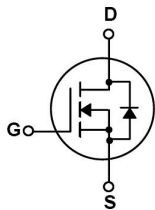
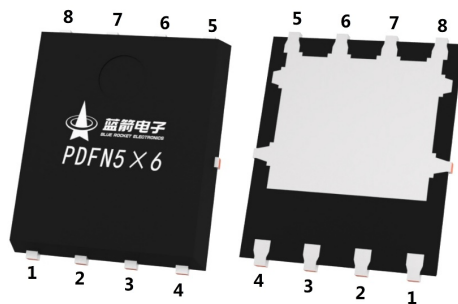
$R_{DS(ON)}@4.5V \leq 2.5\text{ m}\Omega$ (Typ. $1.8\text{ m}\Omega$)

无卤产品。HF Product.

用途 / Applications

该器件非常适合消费电子、电信、工业电源和 LED 背光的升压转换器和同步整流器。

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**

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($T_c=25^{\circ}\text{C}$)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DS}	30	V
Drain Current	I_D	212	A
Drain Current - Pulsed	I_{DM}	345	A
Gate-Source Voltage	V_{GS}	± 20	V
Single Pulsed Avalanche Energy	E_{AS}	703	mJ
Avalanche Current	I_{AS}	37.5	A
Power Dissipation	P_D	100	W
Operating and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^{\circ}\text{C}$
Junction-to-Ambient	$t \leq 10$	20	$^{\circ}\text{C/W}$
Junction-to-Ambient	Steady-State		
Junction-to-Case	Steady-State	1.25	

电性能参数 / Electrical Characteristics($T_c=25^{\circ}\text{C}$)

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}	$V_{GS}=0V$ $I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.1		2.2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=30A$		1.2	1.3	m Ω
		$V_{GS}=4.5V$ $I_D=20A$		1.8	2.5	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Reverse Recovery Time	t_{rr}	$V_{DS}=15V$, $I_D=20A$ $dI_{SD}/dt = 100 A/\mu s$		38.2		ns
Reverse Recovery Charge	Q_{rr}			37.7		nC
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		3040		pF
Output Capacitance	C_{oss}			1110		
Reverse Transfer Capacitance	C_{rss}			40		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		3.3		Ω

电性能参数 / Electrical Characteristics(Tc=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
total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=20A$		43.5		nC
total Gate Charge	$Q_{g(4.5V)}$			19.4		
Gate Source Charge	Q_{gs}			5.5		
Gate Drain Charge	Q_{gd}			8.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		10.8		ns
Turn-On Rise Time	t_r			15.9		
Turn-Off Delay Time	$t_{d(off)}$			43.1		
Turn-Off Fall Time	t_f			15.0		

电参数曲线图 / Electrical Characteristic Curve

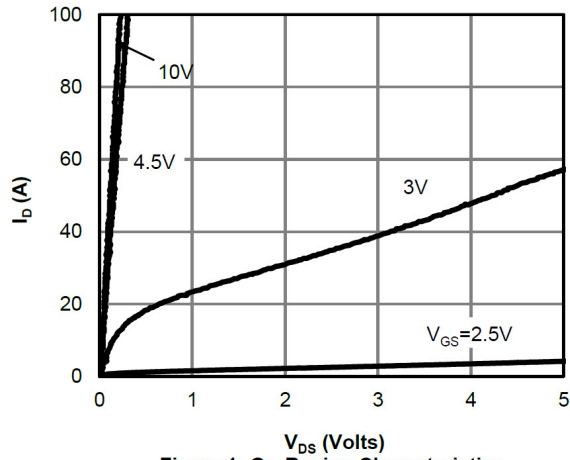


Figure 1: On-Region Characteristics

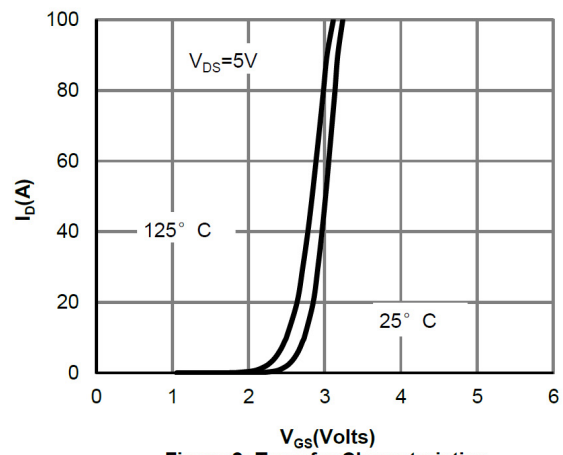


Figure 2: Transfer Characteristics

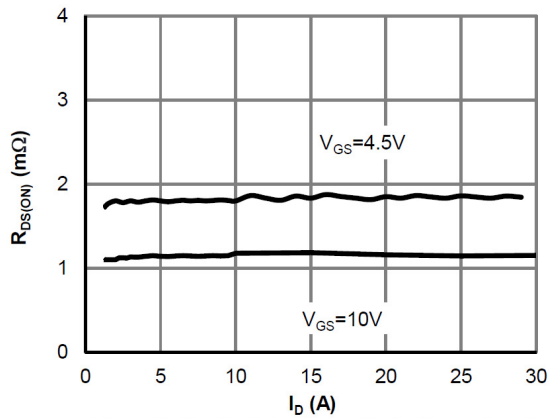


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

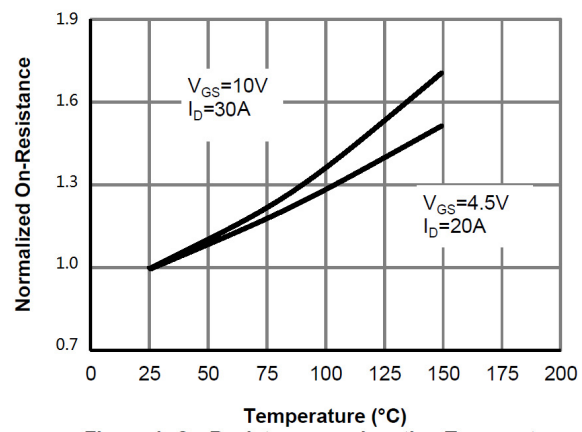


Figure 4: On-Resistance vs. Junction Temperature

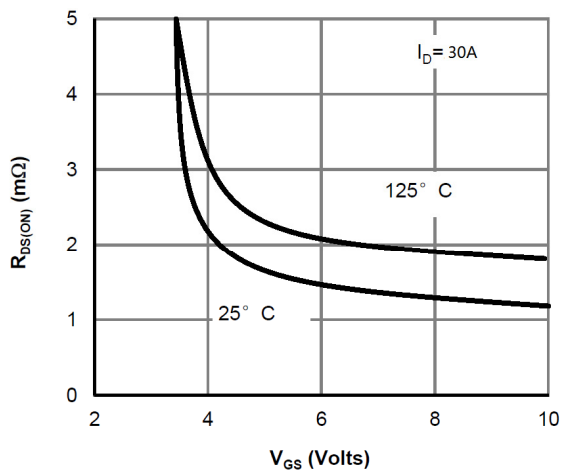


Figure 5: On-Resistance vs. Gate-Source Voltage

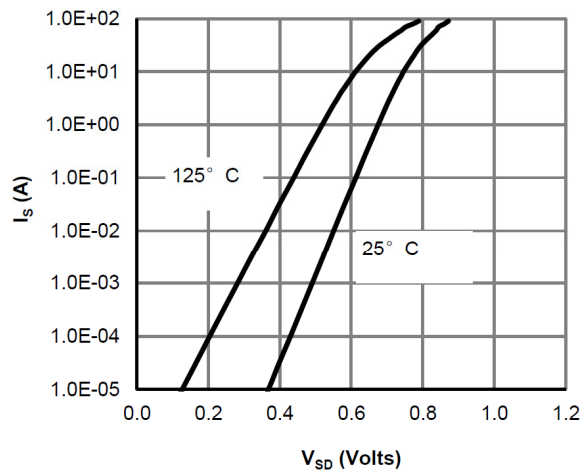
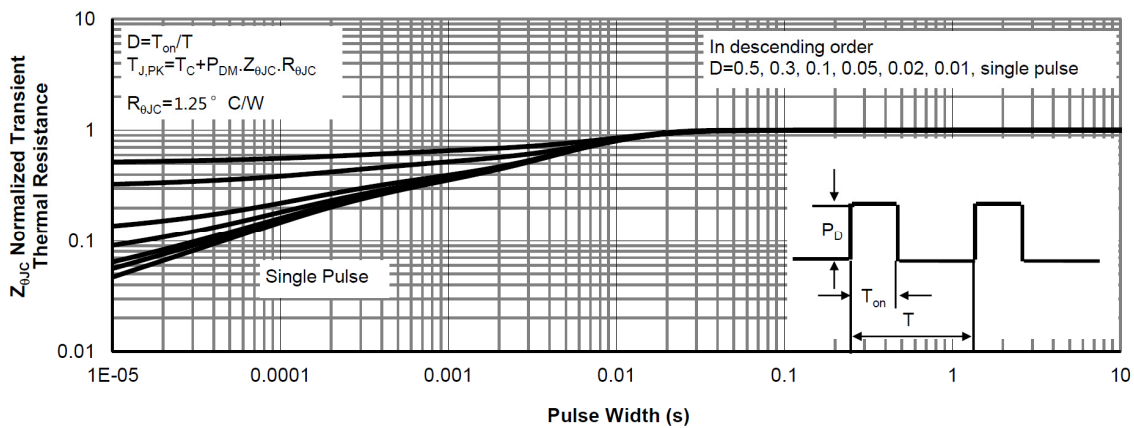
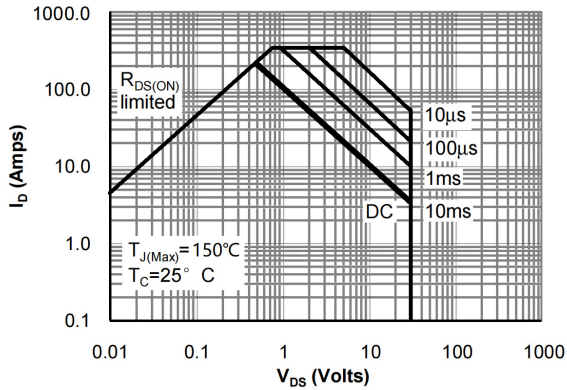
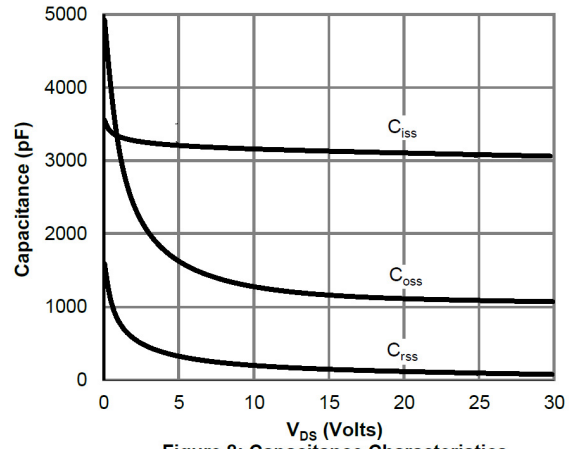
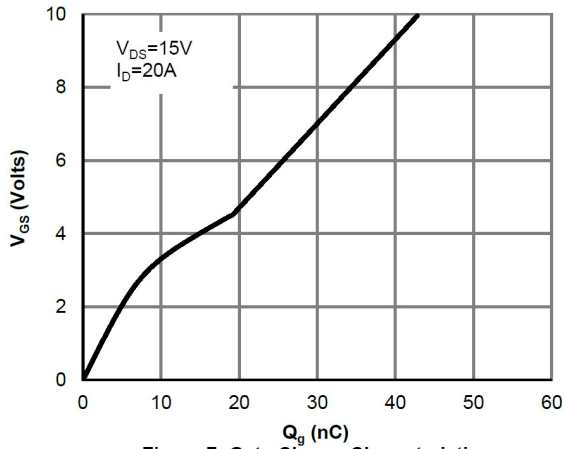


Figure 6: Body-Diode Characteristics

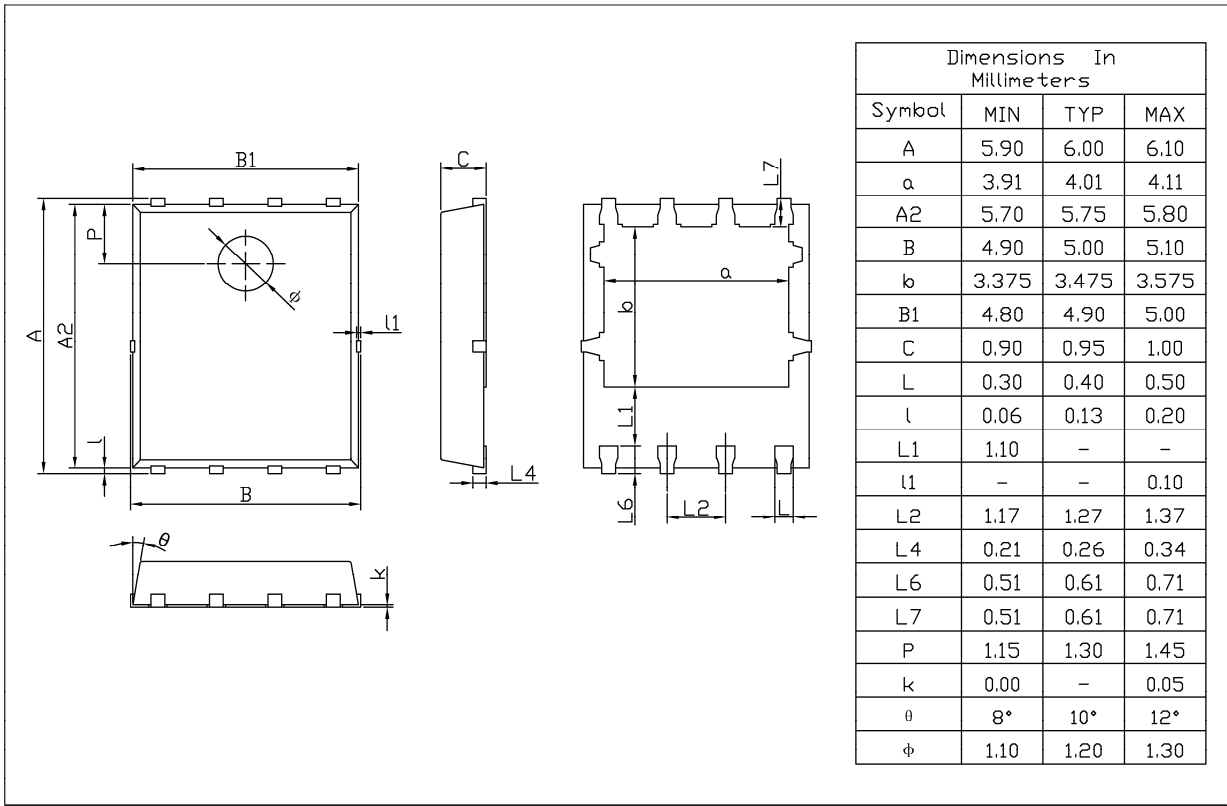
电参数曲线图 / Electrical Characteristic Curve



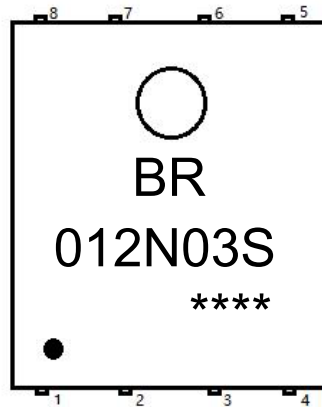
外形尺寸图 / Package Dimensions

PDFN5 X6

Unit:mm



Rev.02 202510

**印章说明 / Marking Instructions**

说明：

BR： 为公司代码

012N03S： 为产品型号

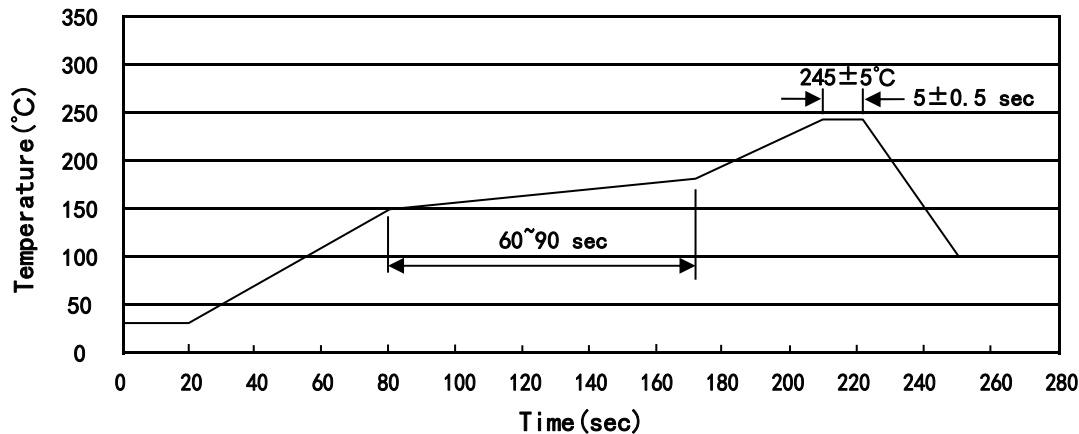
****： 为生产批号代码，随生产批号变化

Note：

BR： Company Code

012N03S： Product Type

****： 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

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