

描述 / Descriptions

PDFN5×6–Clip 封装 N 沟道场效应管。

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

特征 / Features

$V_{DS}(V)=40V$ $I_D=200A$

$R_{DS(ON)}@10V \leq 0.8m\Omega$ (Typ. $0.65m\Omega$)

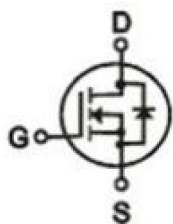
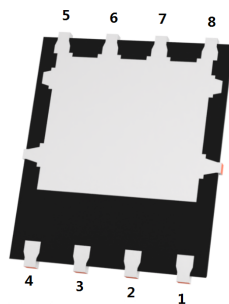
$R_{DS(ON)}@4.5V \leq 1.3m\Omega$ (Typ. $1.1m\Omega$)

无卤产品。HF Product.

用途 / Applications

电机驱动器，DC-DC 转换器。

Motor drivers, DC-DC Converter.

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

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current ^{①③}	$I_D(T_c=25^{\circ}\text{C})$	200	A
	$I_D(T_c=100^{\circ}\text{C})$	200	A
Drain Current – Pulsed ^{①②③}	$I_{DM}(T_c=25^{\circ}\text{C})$	800	A
Power Dissipation ^①	$P_D(T_c=25^{\circ}\text{C})$	150	W
Operating and Storage Temperature Range	T_J, T_{stg}	-55 to 175	$^{\circ}\text{C}$
Diode Forward Current	$I_S(T_c=25^{\circ}\text{C})$	200	A
Single Pulsed Avalanche Energy($L=1.0\text{mH}$)	E_{AS}	1012	mJ
Thermal resistance, junction – ambient ^①	$R_{\theta JA}$	56	$^{\circ}\text{C}/\text{W}$
Thermal resistance, junction – case ^①	$R_{\theta JC}$	1	

Note:

1. Surface Mounted on 1 in² pad area, $t \leq 10$ sec
2. Pulse width $\leq 10 \mu\text{s}$, duty cycle $\leq 1\%$
3. limited by bonding wire

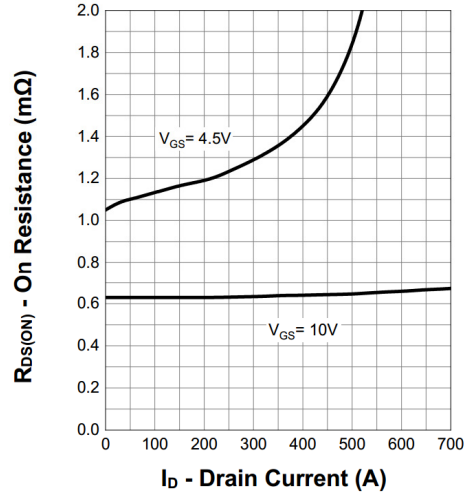
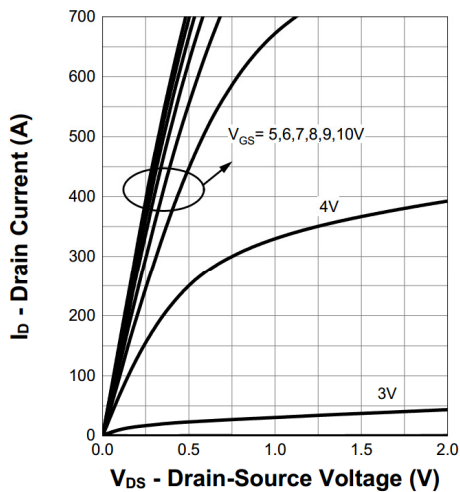
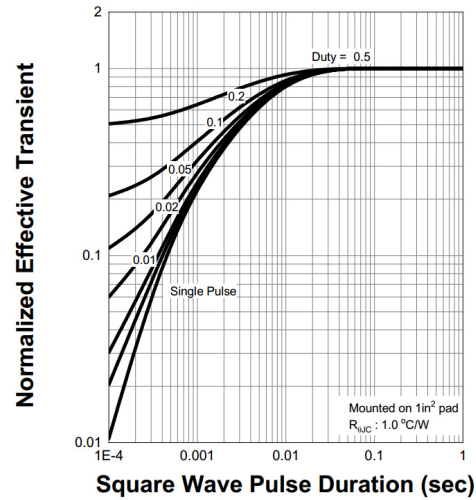
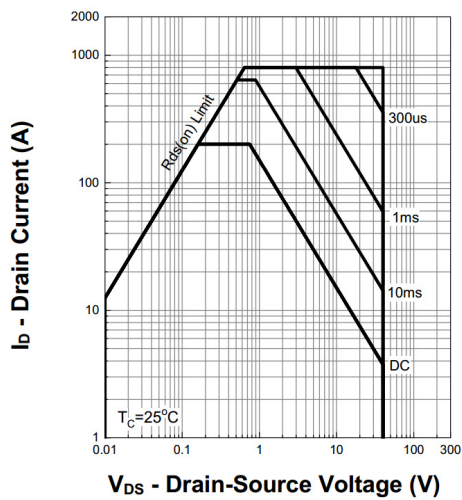
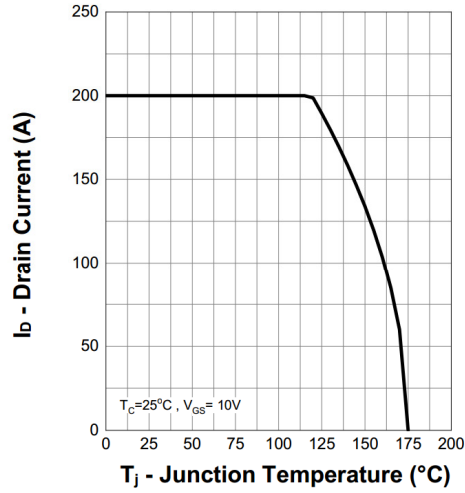
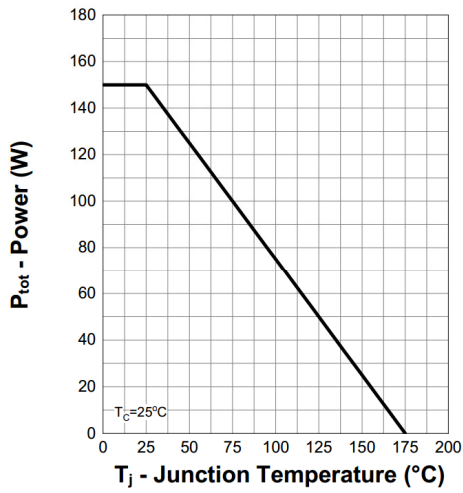
电性能参数 / Electrical Characteristics($T_a=25^{\circ}\text{C}$)

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}	$V_{GS}=0\text{V}$ $I_D=250\mu\text{A}$	40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu\text{A}$	1.0		2.5	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=32\text{V}$ $V_{GS}=0\text{V}$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V}$ $V_{DS}=0\text{V}$			± 0.1	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$ $I_D=30\text{A}$		0.65	0.8	m Ω
		$V_{GS}=4.5\text{V}$ $I_D=20\text{A}$		1.1	1.3	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$ $I_S=30\text{A}$			1.3	V
Reverse Recovery Time	t_{rr}	$I_{DS} = 30\text{A}, V_{GS} = 0\text{V}$ $dI_{SD}/dt = 100\text{A}/\mu\text{s}$		40		nS
Reverse Recovery Charge	Q_{rr}			28		nC
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}$ $V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		5702		pF
Output Capacitance	C_{oss}			1876		
Reverse Transfer Capacitance	C_{rss}			204		

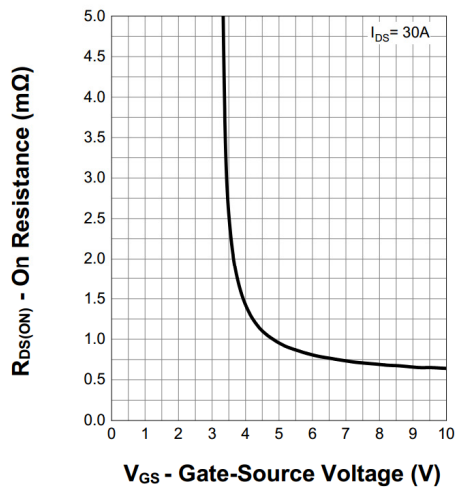
电性能参数 / Electrical Characteristics(Ta=25°C)

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	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=0.66\Omega$ $R_{GEN}=3.9\Omega$ $I_{DS}=30A$		54		ns
Turn-On Rise Time	t_r			65		
Turn-Off Delay Time	$t_{d(off)}$			101		
Turn-Off Fall Time	t_f			73		
Total Gate Charge	Q_g	$V_{GS}=10V$ $V_{DS}=20V$ $I_D=30A$		114		nC
Gate Source Charge	Q_{gs}			23		
Gate Drain Charge	Q_{gd}			25		

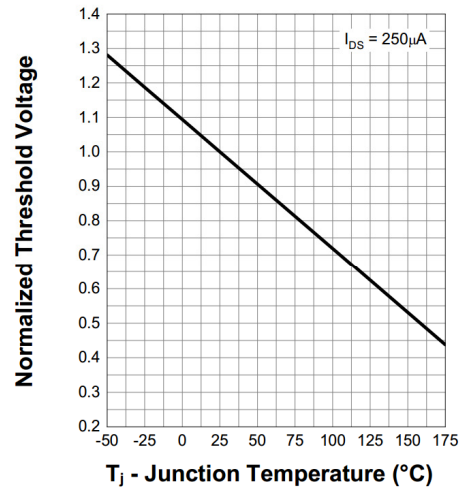
电参数曲线图 / Electrical Characteristic Curve



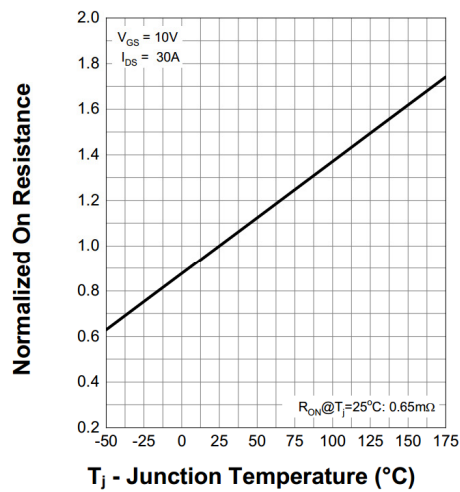
电参数曲线图 / Electrical Characteristic Curve



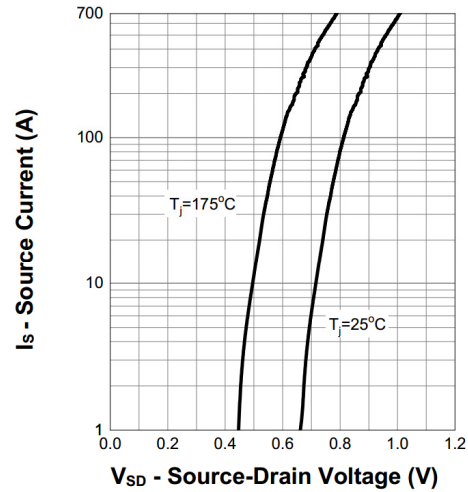
7. Transfer Characteristics



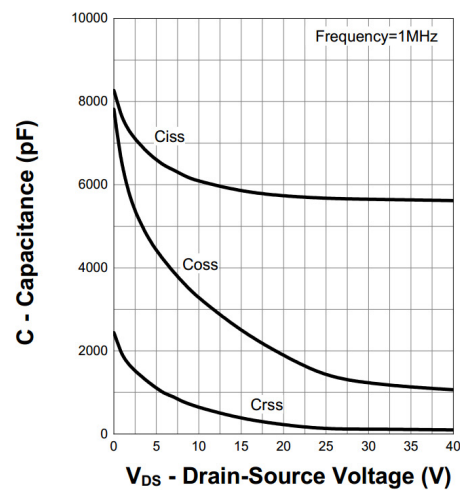
8. Normalized Threshold Voltage



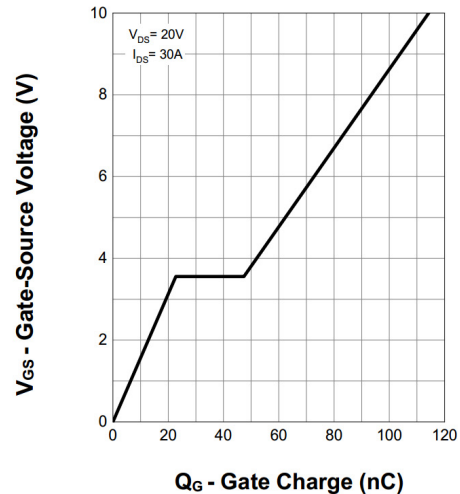
9. Normalized On Resistance



10. Diode Forward Current

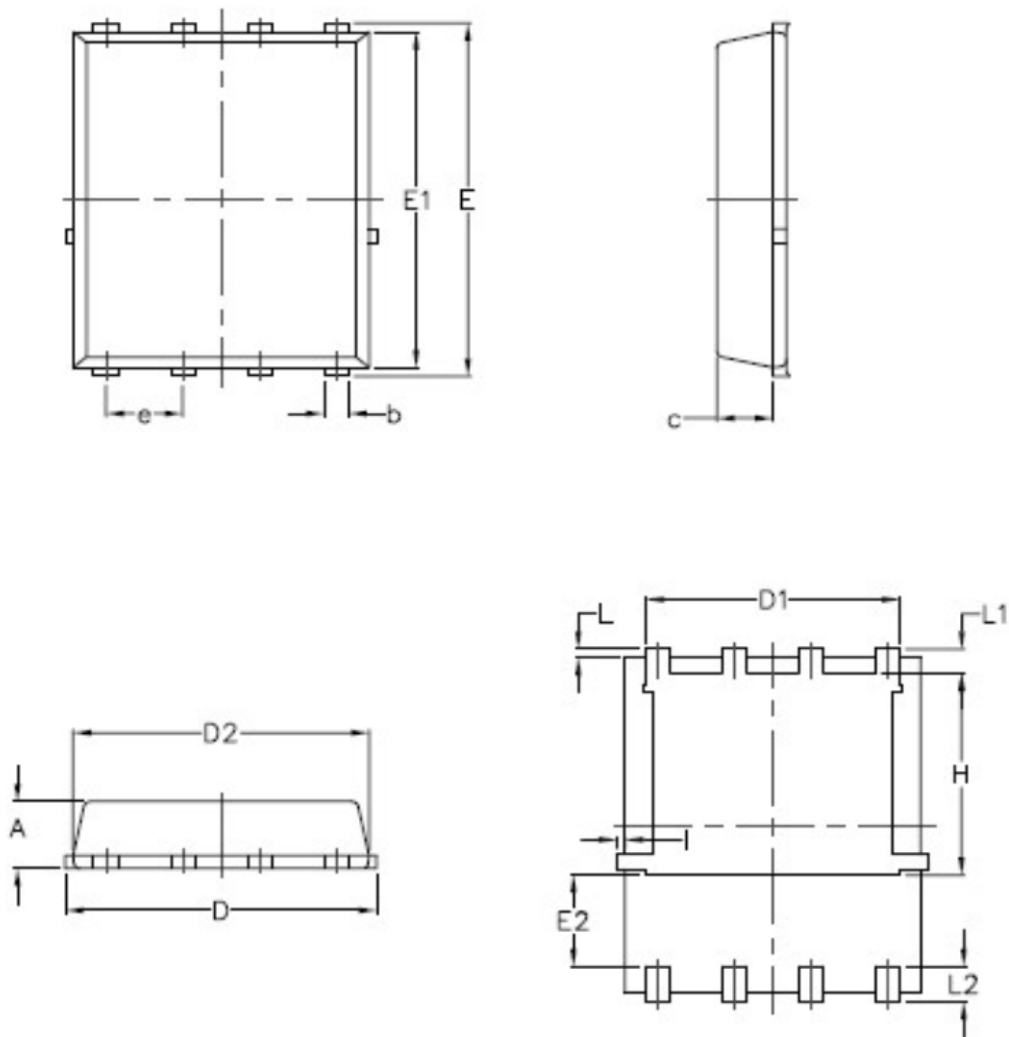


11. Capacitance



12. Gate Charge

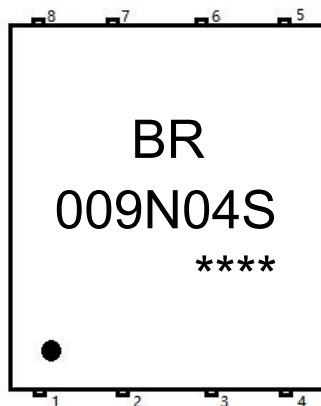
外形尺寸图 / Package Dimensions



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	1.03	1.17
b	0.34	0.48
c	0.824	0.970
D	4.80	5.40
D1	4.11	4.31
D2	4.80	5.00
E	5.95	6.15
E1	5.65	5.85
E2	1.40	-
E	1.27 BSC	
L	0.05	0.25
L1	0.38	0.50
L2	0.38	0.71
H	3.30	3.50
I	-	0.18



印章说明 / Marking Instructions



说明：

BR： 为公司代码

009N04S： 为型号代码

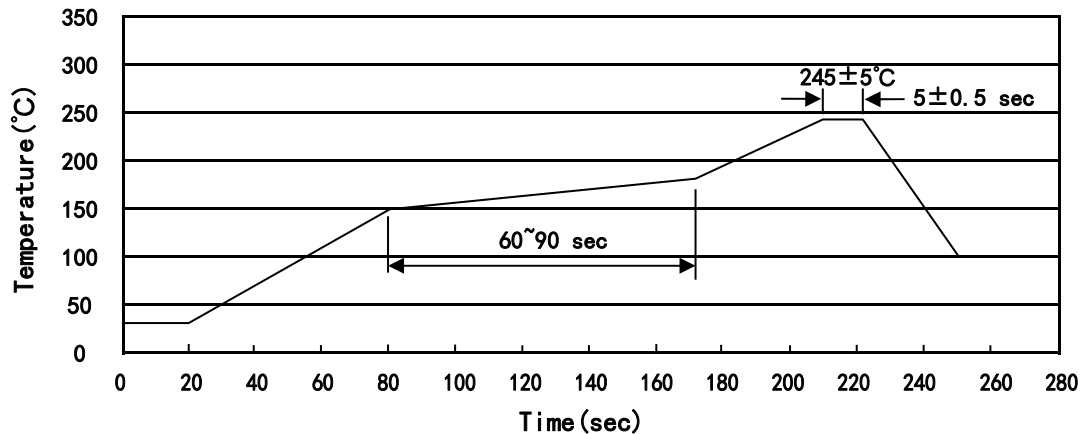
****： 为生产批号代码，随生产批号变化

Note：

BR： Company Code

009N04S： 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-Clip	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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