BRCS025N10SHSL

Rev.C Jan.-2026

DATA SHEET

描述 / Descriptions

LFPAK5×6 封装 N 沟道场效应管。

N-Channel MOSFET in a LFPAK5×6 Plastic Package.

特征 / Features

V_{DS} (V) = 100V I_D =256A

$R_{DS(ON)}$@10V⩽2.5mΩ(Typ. 2.1mΩ)

$R_{DS(ON)}$@6V⩽4.0mΩ(Typ. 3.1mΩ)

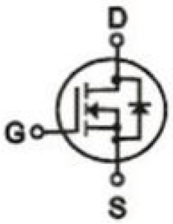
无卤产品。HF Product.

用途 / Applications

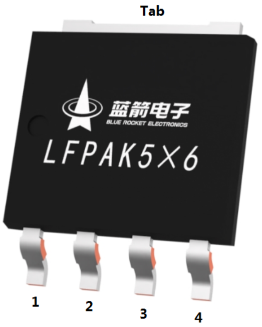
电机驱动器，DC-DC 转换器。

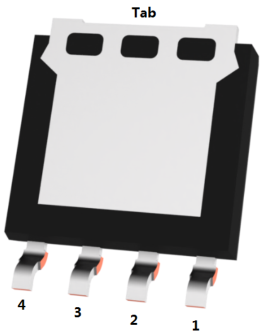
Motor drivers, DC - DC Converter.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning





PIN1、2、3：S   PIN4：G   Tab：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_{DS}	100	V
Drain Current ①③	I_D(Tc=25℃)	256	A
	I_D(Tc=100℃)	181	A
Pulsed Drain Current ①	I_{DM}	660	A
Gate-Source Voltage	V_{GS}	±20	V
Single Pulsed Avalanche Energy L=1.0mH	E_{AS}	1152	mJ
Continuous-Source Current	I_S(Tc=25℃)	256	A
Total Power Dissipation	P_D(Tc=25℃)	375	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 175	℃
Thermal Resistance-Junction to Ambient ②	$R_{\theta JA}$	50	℃/W
Thermal Resistance-Junction to Case ②	$R_{\theta JC}$	0.4	

Notes:
① Pulse width ≤ 300 μs, duty cycle ≤ 2 %
② Surface Mounted on 1 in^2 pad area, t ≤ 10 sec
③ Limited by bonding wire

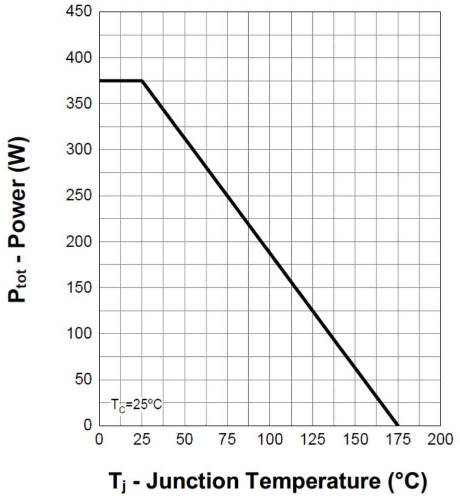
电性能参数 / Electrical Characteristics(Ta=25℃)

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}	V_{GS}=0V I_D=250μA	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=80V V_{GS}=0V			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2		4	V
Static Drain-Source On-Resistance①	$R_{DS(on)}$	V_{GS}=10V I_D=30A		2.1	2.5	mΩ
	$R_{DS(on)}$	V_{GS}=6V I_D=20A		3.1	4.0	
Drain-Source Diode Forward Voltage①	V_{SD}	V_{GS}=0V I_S=30A			1.3	V
Reverse Recovery Time	trr	I_{DS} = 30A, V_{GS} = 0 V dI_{SD}/dt = 100 A/μs		86		nS
Reverse Recovery Charge	Qrr			163		nC
Input Capacitance	C_{iss}	V_{DS}=50V V_{GS}=0V f=1.0MHz		5183		pF
Output Capacitance	C_{oss}			1053		
Reverse Transfer Capacitance	C_{rss}			23		

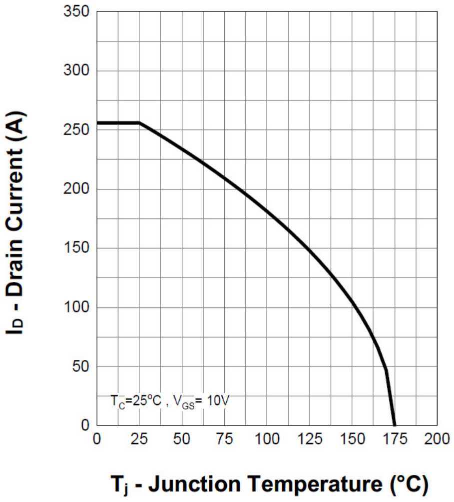
电性能参数 / Electrical Characteristics(Ta=25℃)

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
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=50V, I_D=30A		93		nC
Gate Source Charge	Q_{gs}			27		
Gate Drain Charge	Q_{gd}			25		
Turn-On Delay Time	$t_{d(on)}$	V_{GEN}=10V V_{DS}=50V R_L=1.6Ω R_G=3.9Ω I_{DS}=30A		19		ns
Turn-On Rise Time	t_r			42		
Turn-Off Delay Time	$t_{d(off)}$			55		
Turn-Off Fall Time	t_f			42		

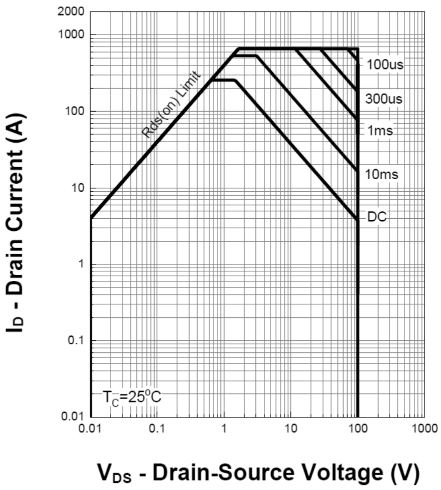
电参数曲线图 / Electrical Characteristic Curve



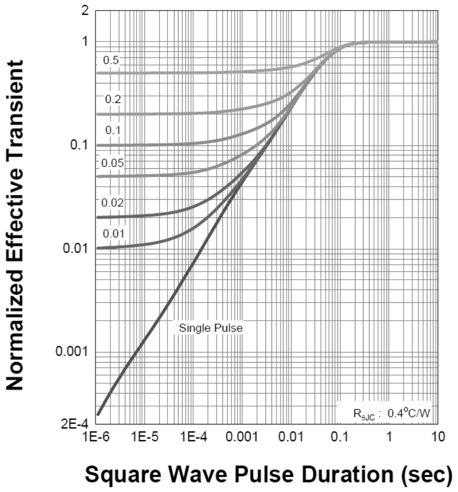
1. Power Capability



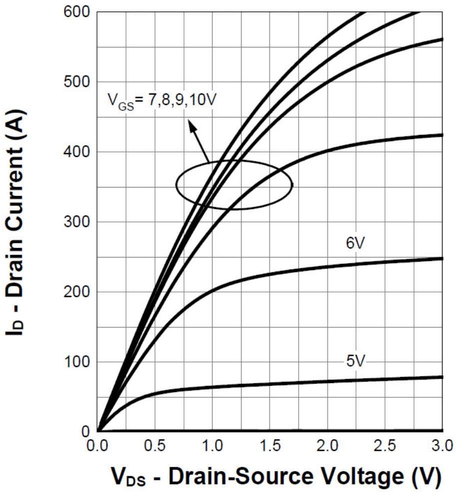
2. Current Capability



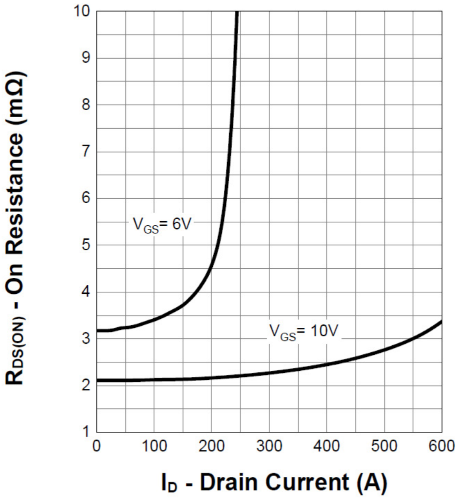
3. Safe Operation Area



4. Transient Thermal Impedance

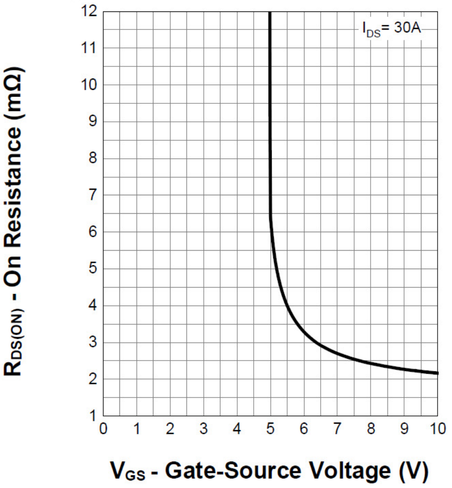


5. Output Characteristics

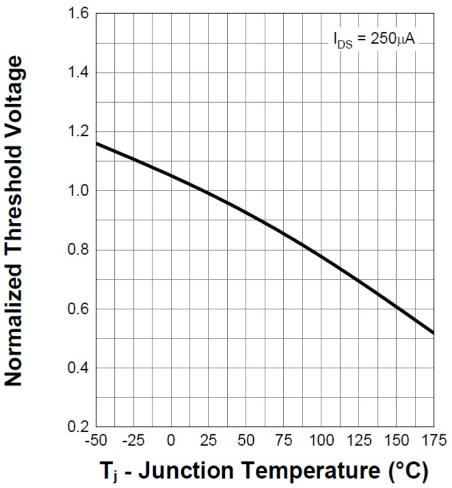


6. On Resistance

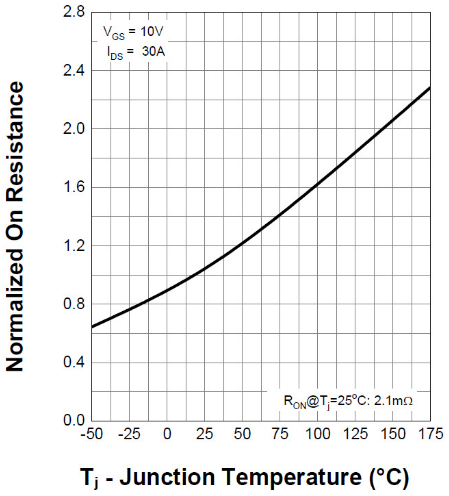
电参数曲线图 / Electrical Characteristic Curve



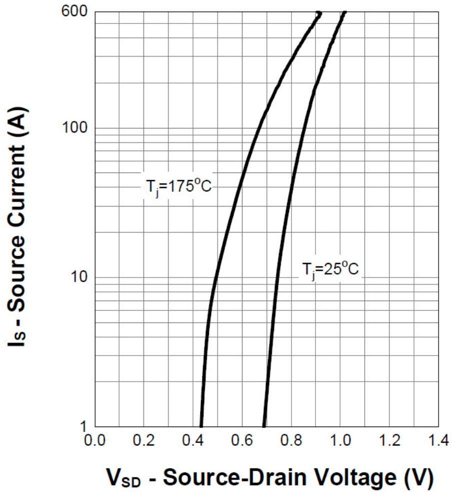
7. Transfer Characteristics



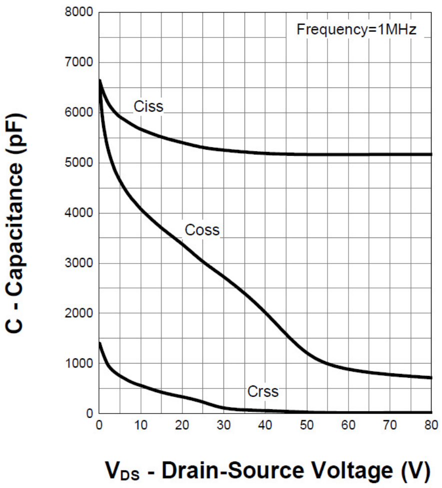
8. Normalized Threshold Voltage



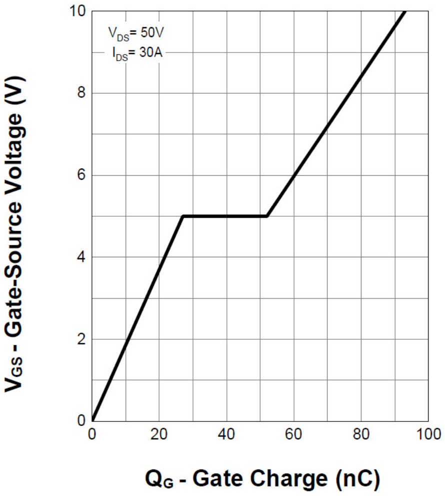
9. Normalized On Resistance



10. Diode Forward Current

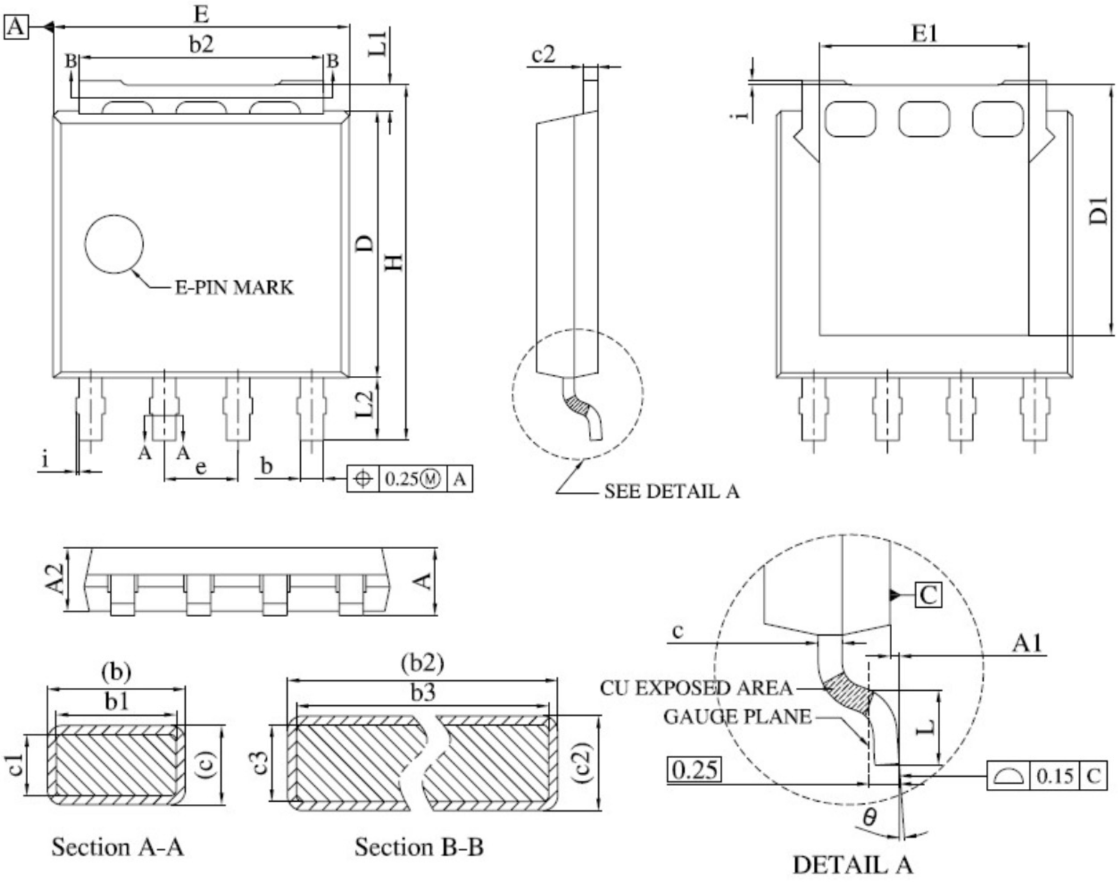


11. Capacitance



12. Gate Charge

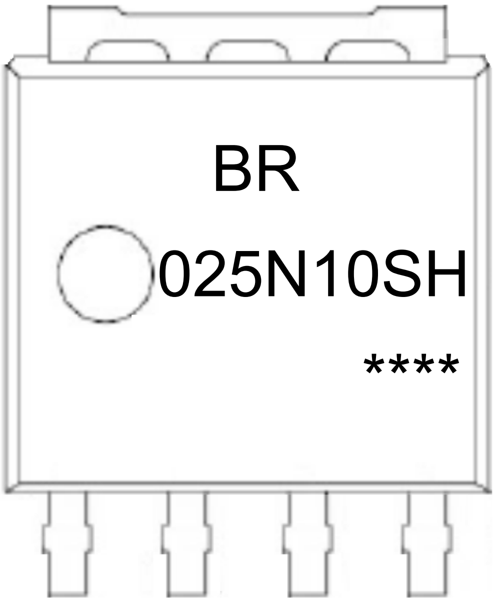
外形尺寸图 / Package Dimensions



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	1.00	1.30
A1	0.00	0.15
A2	0.98	1.12
b	0.35	0.50
b1	0.32	0.46
b2	4.02	4.41
b3	4.00	4.37
c	0.19	0.25
c1	0.17	0.23
c2	0.24	0.30
c3	0.22	0.28
D	4.45	4.70
D1	-	4.45

Symbol	Dimensions In Millimeters	
	MIN.	MAX.
E	4.95	5.30
E1	3.50	3.70
e	1.27 BSC.	
H	5.95	6.25
i	-	0.25
L	0.40	0.85
L1	0.27	0.57
L2	0.80	1.30
θ	0°	8°

印章说明 / Marking Instructions



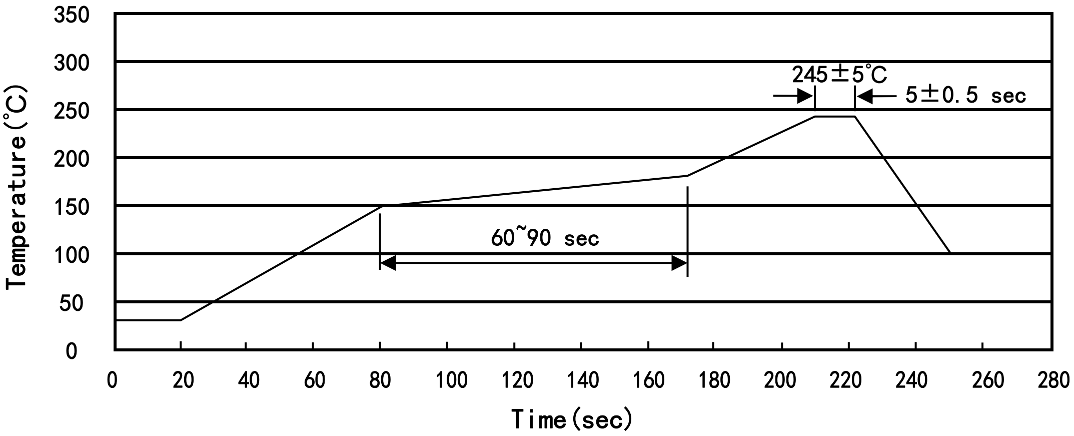
说明：

BR：	为公司代码
025N10SH：	为型号代码
****：	为生产批号代码，随生产批号变化

Note：

BR:	Company Code
025N10SH:	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: 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
LFPAK5×6	3,000	2	6,000	5	30,000	13”×12	356×335×50	385×285×358

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
LFPAK5×6	5,000	2	10,000	5	50,000	13”×12	356×335×50	385×285×358

使用说明 / Notices

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