BRCS090N02EYW

Rev.A Mar.-2024

描述 / Descriptions

DFN3×2-6L 塑封封装共漏双 N 沟通增强模式场效应管。

Common-Drain Dual N-Channel Enhancement MOSFET in a DFN3×2-6L Plastic Package.

特征 / Features

$V_{DS(V)}$=20V　　I_D=10A

$R_{DS(ON)}$@4.5V≤9.0mΩ(Typ.7.8mR)

$R_{DS(ON)}$@3.8V≤9.7mΩ(Typ.8.2mR)

$R_{DS(ON)}$@2.5V≤12.5mΩ(Typ.9.5mR)

静电保护达 2KV，无卤产品。

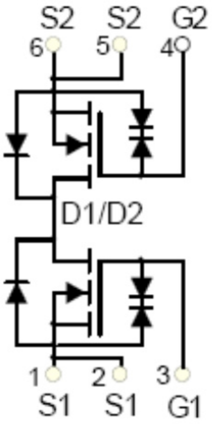
ESD protected up to 2KV,HF Product.

用途 / Applications

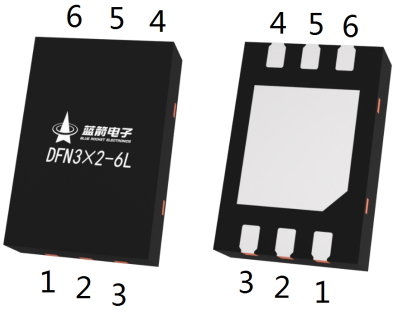
手持式仪器、POL 应用、电池保护应用。

Handheld Instruments,POL Applications,Battery Protection Applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



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}	20	V
Drain Current	I_D	10	A
Drain Current - Pulsed	I_{DM}	52	A
Gate-Source Voltage	V_{GSS}	±10	V
Power Dissipation	P_D	1.5	W
Operating and Storage Temperature Range	T_J,T_{stg}	-55 to 150	℃
Junction-to-Ambient Steady-State	$R_{θJA}$	83.3	℃/W

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	20	21		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V V_{GS}=0V			1.0	μA
Gate-Body leakage current	I_{GSS}	V_{GS}=±10V V_{DS}=0V			±10	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	0.5	0.7	1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=4.5V I_D=3A		7.8	9.0	mΩ
		V_{GS}=4.0V I_D=3A		8.0	9.3	mΩ
		V_{GS}=3.8V I_D=3A		8.2	9.7	mΩ
		V_{GS}=3.1V I_D=3A		8.5	10.5	mΩ
		V_{GS}=2.5V I_D=3A		9.5	12.5	mΩ
Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=1.0A			1.2	V
Input Capacitance	C_{iss}	V_{DS}=10V V_{GS}=0V f=1.0MHz		1900		pF
Output Capacitance	C_{oss}			255		pF
Reverse Transfer Capacitance	C_{rss}			200		pF
Total Gate Charge	Q_g	V_{GS}=4.5V V_{DS}=15V I_D=10A		17.9		nC
Gate-Source Charge	Q_{gs}			1.5		nC
Gate-Drain Charge	Q_{gd}			4.7		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=10V V_{GS}=5.0V R_L=1.35Ω R_{GEN}=3Ω		2.2		ns
Turn-On Rise Time	t_r			5.9		ns
Turn-Off Delay Time	$t_{d(off)}$			40		ns
Turn-Off Fall Time	t_f			90		ns

电参数曲线图 / Electrical Characteristic Curve

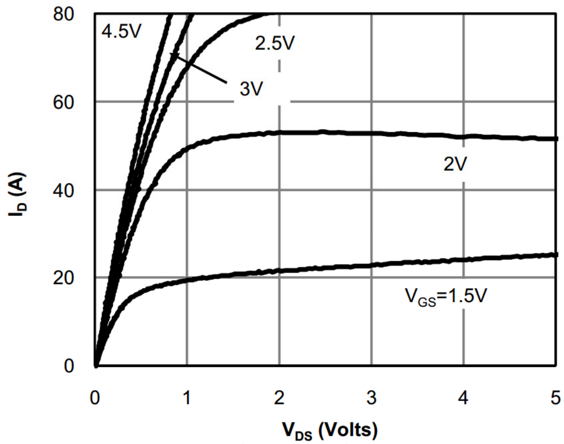


Fig 1: On-Region Characteristics

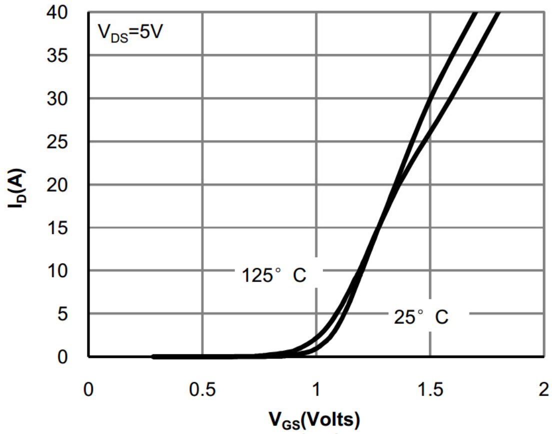


Figure 2: Transfer Characteristics

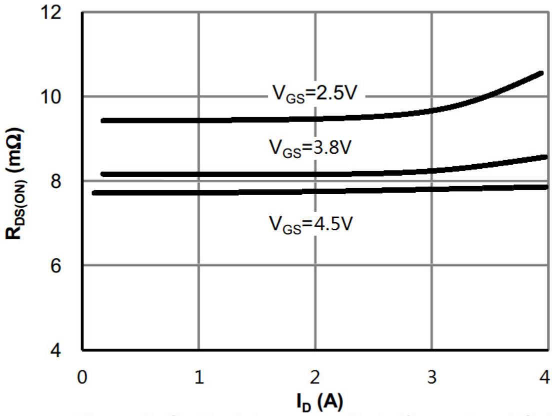


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

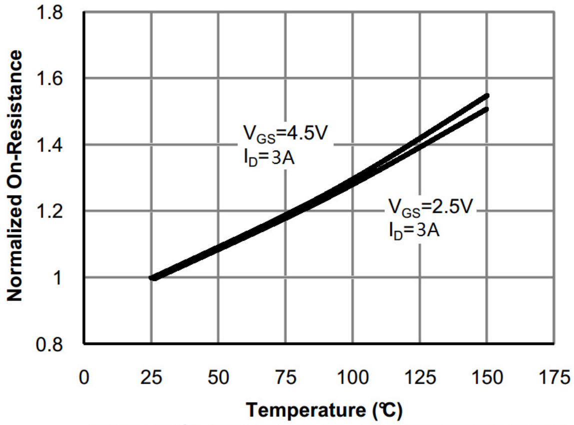


Figure 4: On-Resistance vs. Junction Temperature

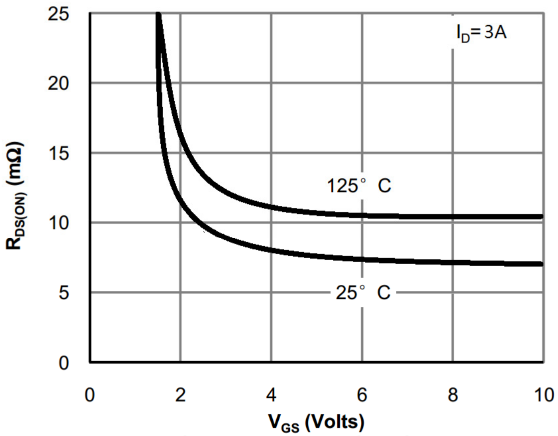


Figure 5: On-Resistance vs. Gate-Source Voltage

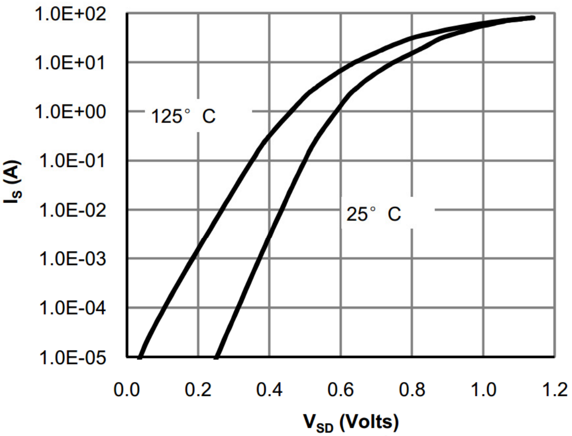


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

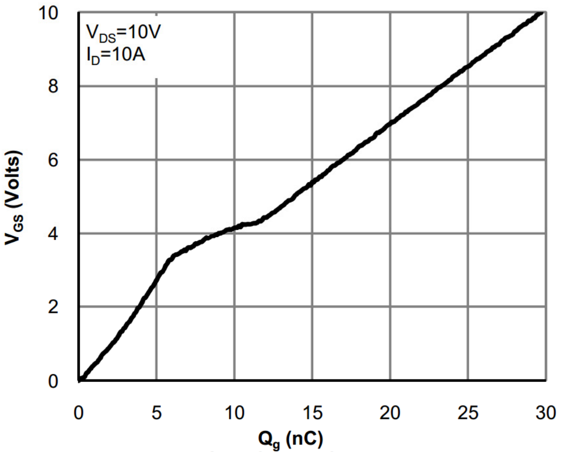


Figure 7: Gate-Charge Characteristics

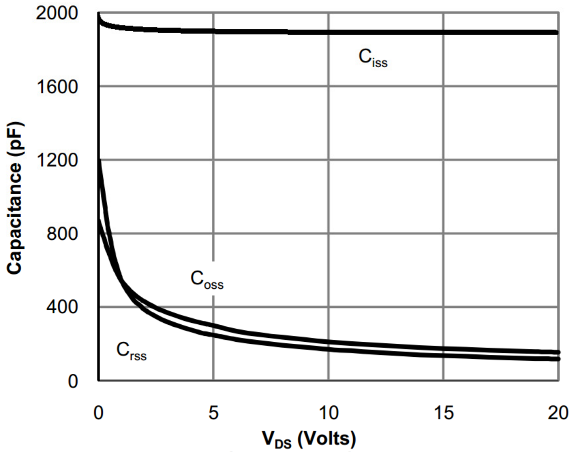


Figure 8: Capacitance Characteristics

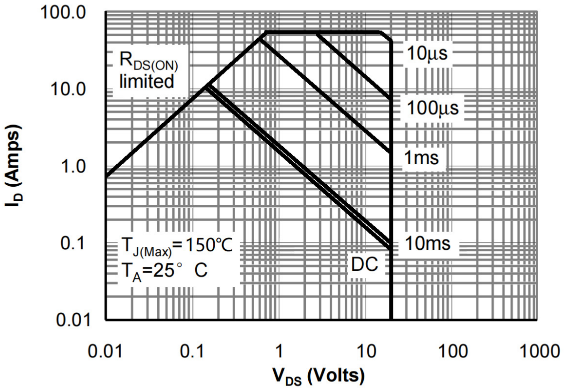


Figure 9: Maximum Forward Biased Safe Operating Area

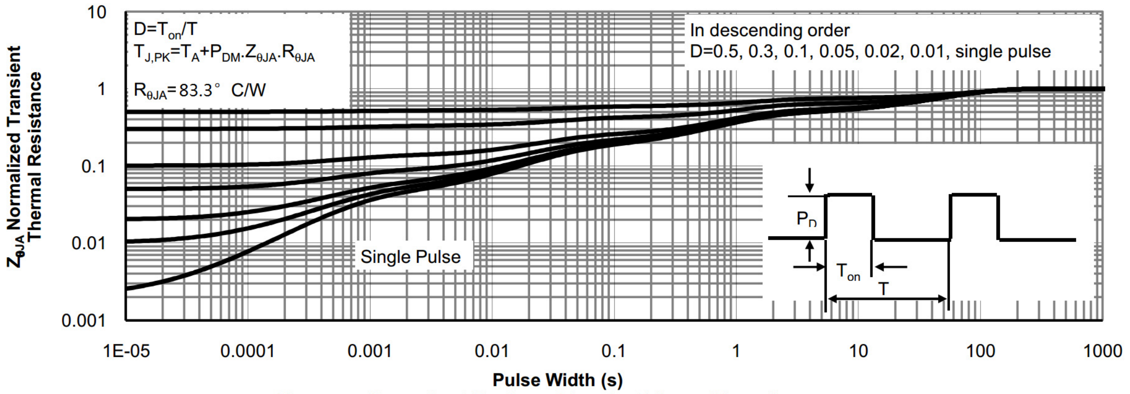
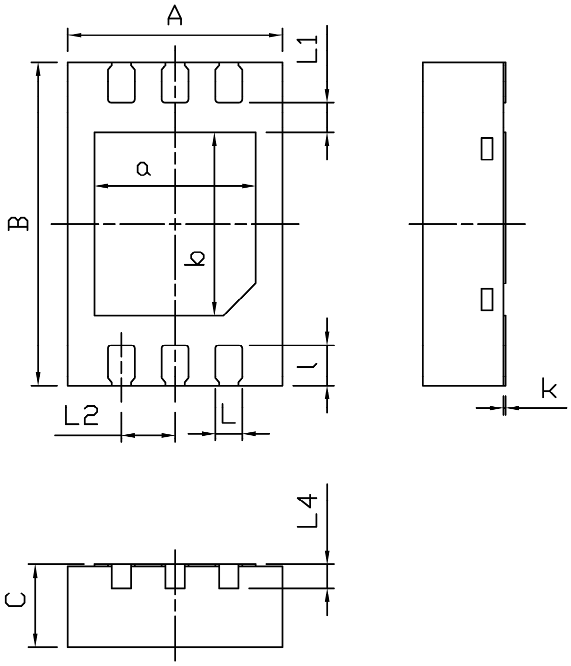


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

DFN3X2-6L

Unit:mm



	Dimensions In Millimeters		
Symbol	MIN	TYP	MAX
A	1.90	2.00	2.10
B	2.90	3.00	3.10
C	0.70	0.75	0.85
L	0.20	0.25	0.30
L1	–	0.275	–
L2	–	0.50	–
L4	0.153	0.203	0.253
a	1.40	1.50	1.60
b	1.60	1.70	1.80
k	0.00	–	0.05
l	0.275	0.375	0.475

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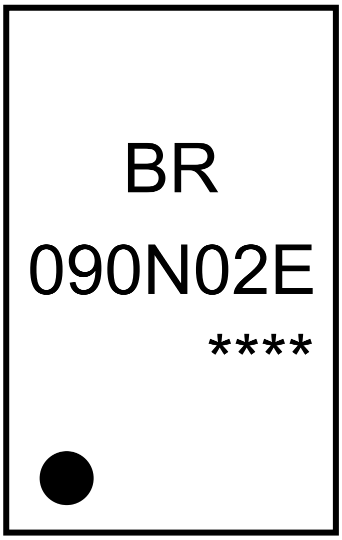
印章说明 / Marking Instructions



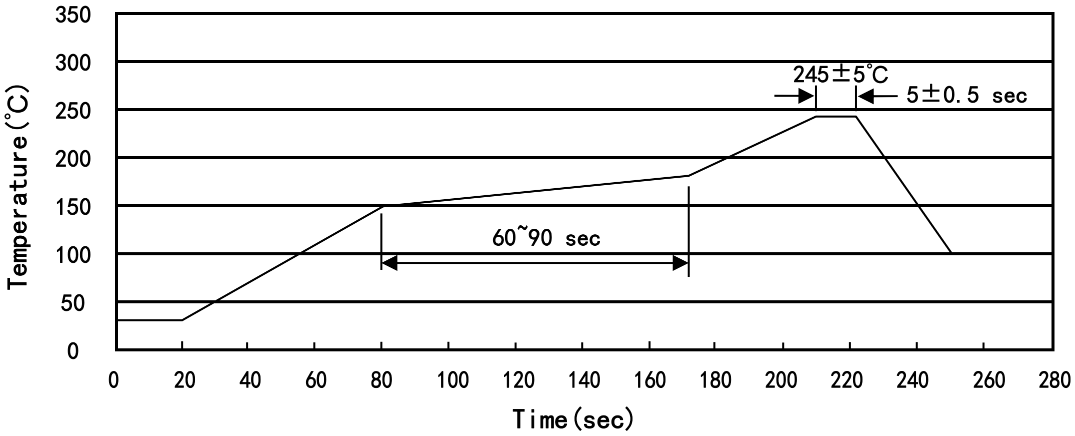
说明：

BR：	为公司代码
090N02E：	为型号代码
****：	为生产批号代码，随生产批号变化

Note:

BR:	Company Code
090N02E:	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
DFN3×2-6L	3,000	10	30,000	4	120,000	7″ ×8	210×205×205	445×435×230

使用说明 / Notices