

BRCS7002K2ZK

Rev.C May.-2022

描述 / Descriptions

DFN1006-3L 塑封封装 N 沟道 MOS 场效应管。

N-Channel Enhancement Mode Field Effect Transistor in a DFN1006-3L Plastic Package.

特征 / Features

灵敏的控制级触发电流和很低的维持电流。静电保护达 2KV。无卤产品。

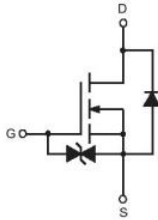
Sensitive gate trigger current and Low Holding current.ESD protected up to 2KV.HF Product.

用途 / Applications

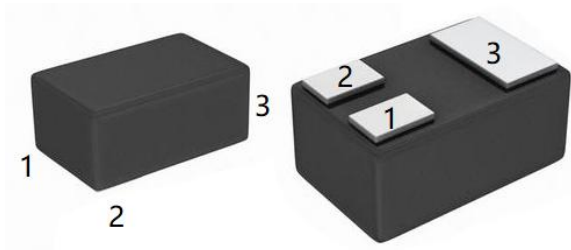
用作一般的开关和相位控制。

Intended for use in general purpose switching and phase control applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



Pin1:G

Pin2:S

Pin3:D

印章代码 / Marking

见印章说明 See Marking Instructions.


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

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage	V_{DGR}	60	V
Drain Current - Continuous	$I_D (Ta=25^\circ C)$	300	mA
	$I_D (Ta=85^\circ C)$	210	
Drain Current - Pulsed	I_{DM}	1200	mA
Gate-Source Voltage - Continuous	V_{GSS}	± 20	V
Power Dissipation	P_D	360	mW
Junction Temperature Range	T_j	-55~150	°C
Storage Temperature Range	T_{stg}	-55~150	°C
Maximum Junction-to-Ambient	$R_{\theta JA}$	350	°C/W
Maximum Junction-to-Solder Point	$R_{\theta JSP}$	92	°C/W

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
Drain-Source Breakdown Voltage	V_{DSS}	$V_{GS}=0$ $I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=60V$			1.0	μA
Gate-Source Leakage	I_{GSS}	$V_{DS}=0V$ $V_{GS}=\pm 20V$			± 10	μA
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=0.5A$		1.7	2	Ω
	$R_{DS(on)(2)}$	$V_{GS}=5V$ $I_D=0.05A$		1.9	2.5	Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=250mA$			1.35	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.4	2.0	V
Input Capacitance	C_{iss}	$V_{GS}=0V, f=1MHz,$ $V_{DS}=20V$		25	50	pF
Output Capacitance	C_{oss}			11	25	
Reverse Transfer Capacitance	C_{rss}			2.5	5	
Total Gate Charge	$Q_{G(TOT)}$				0.7	
Threshold Gate Charge	$Q_{G(TH)}$	$V_{GS}=4.5V, V_{DS}=10V;$ $I_D=200 mA$		0.1		
Gate-to-Source Charge	Q_{GS}			0.3		
Gate-to-Drain Charge	Q_{GD}			0.1		
Turn-On Delay Time	$t_{d(ON)}$	$V_{GS}=10V, V_{DD}=25V,$ $I_D=500mA, R_G=25\Omega$		12.2		ns
Rise Time	t_r			9.0		
Turn-Off Delay Time	$t_{d(OFF)}$			55.8		
Fall Time	t_f			29		

电参数曲线图 / Electrical Characteristic Curve

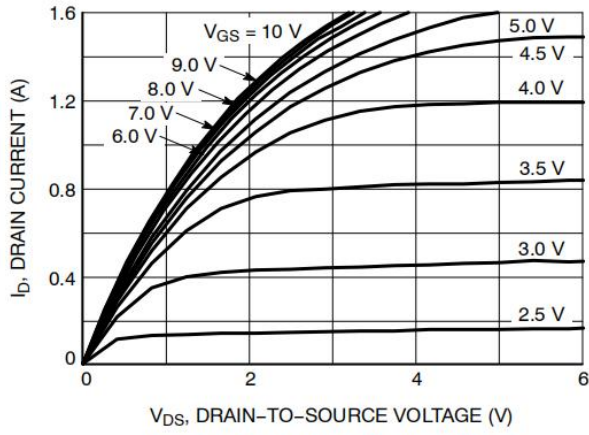


Figure 1. On-Region Characteristics

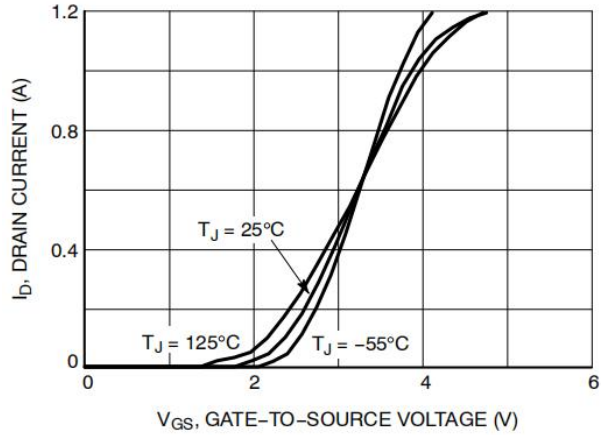


Figure 2. Transfer Characteristics

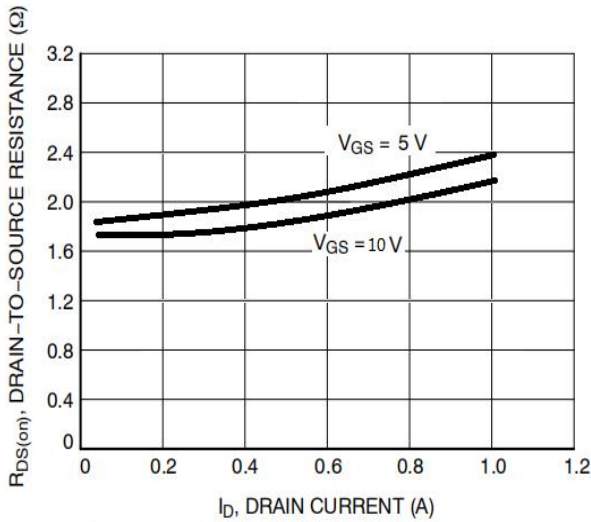


Figure 3. On-Resistance vs. Drain Current and Temperature

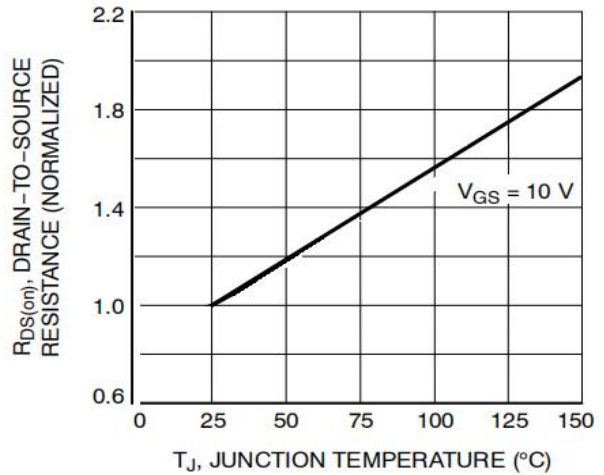


Figure 4 On-Resistance Variation with Temperature

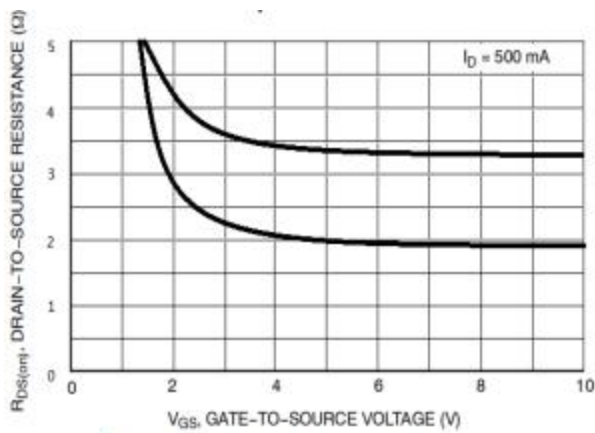


Figure 5. On-Resistance vs. Gate-to-Source Voltage

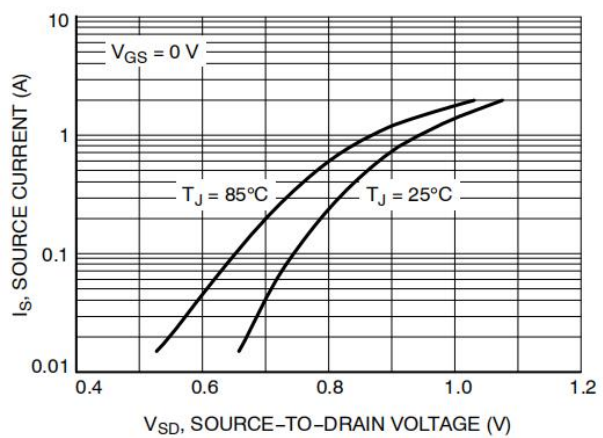


Figure 6 Diode Forward Voltage vs. Current

电参数曲线图 / Electrical Characteristic Curve

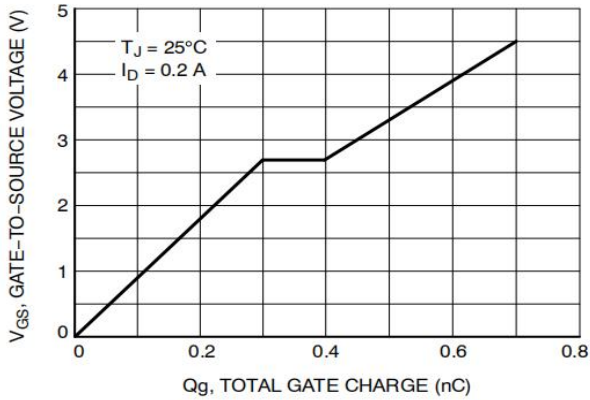


Figure 7 . Gate-to-Source and Drain-to-Source Voltage vs. Total Charge

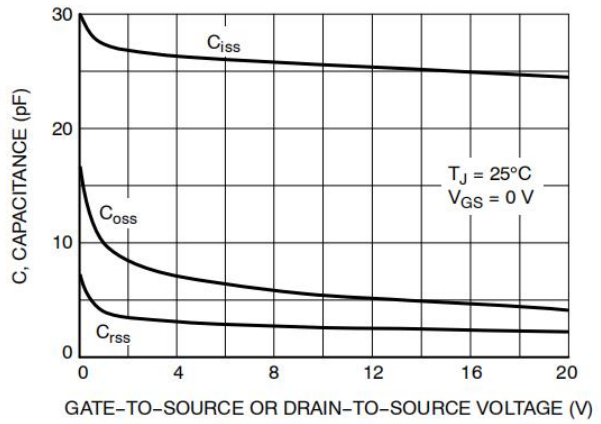


Figure 8. Capacitance Variation

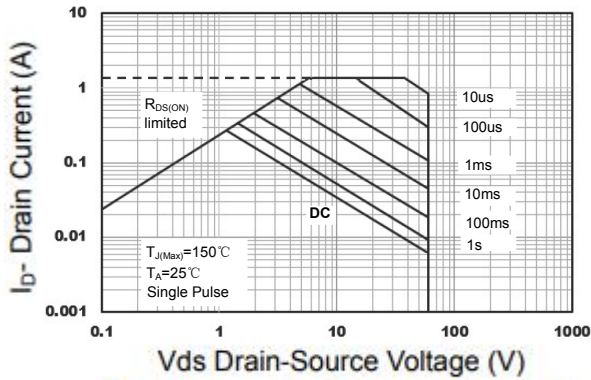


Figure 9 : Safe Operation Area

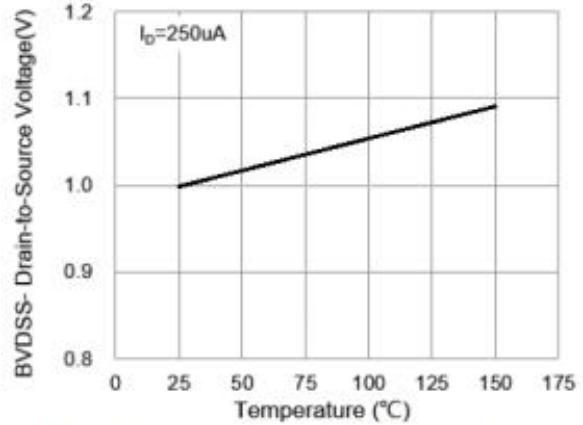


Figure 10 : Breakdown Voltage vs. Temperature

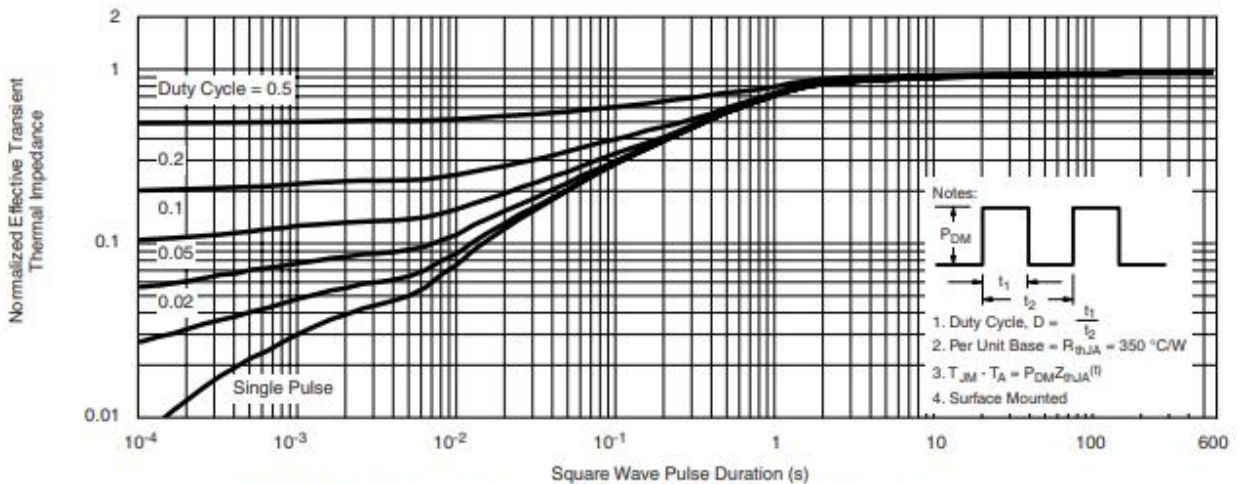


Figure 11 : Normalized Thermal Transient Impedance, Junction-to-Ambient

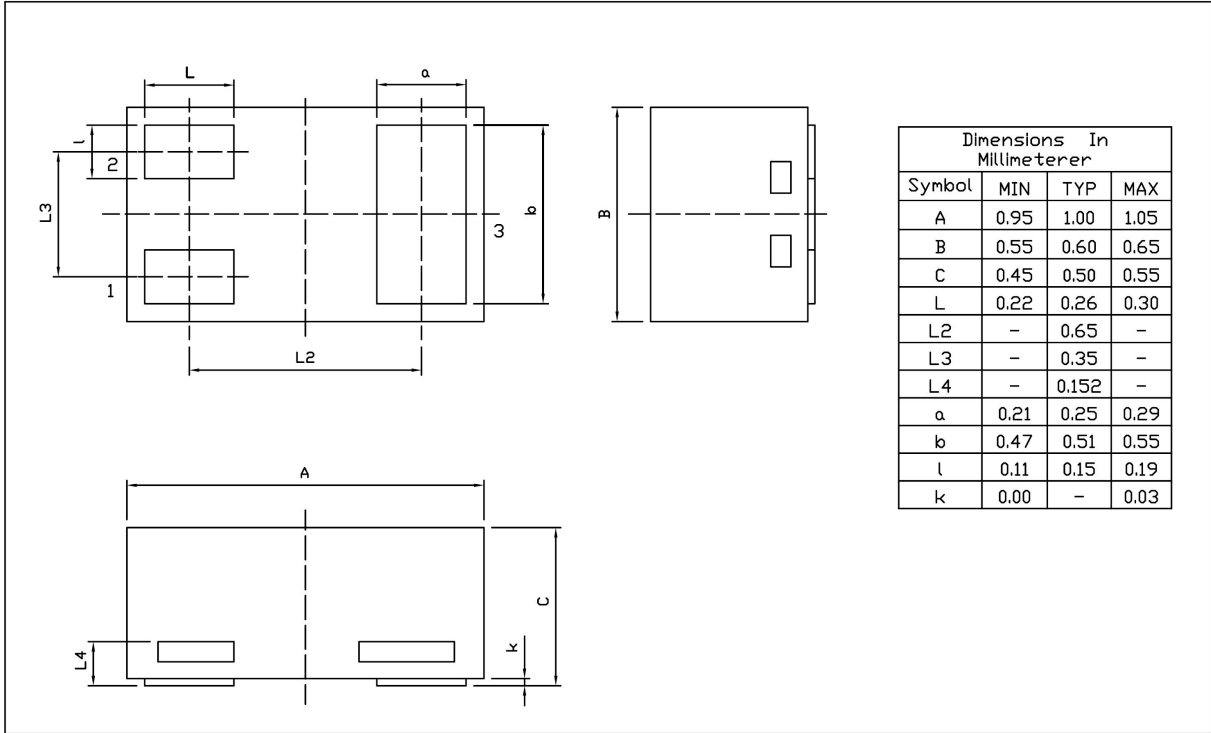
BRC57002K2ZK

Rev.C May.-2022

外形尺寸图 / Package Dimensions

DFN1006-3L

Unit:mm



Dimensions In Millimeter			
Symbol	MIN	TYP	MAX
A	0.95	1.00	1.05
B	0.55	0.60	0.65
C	0.45	0.50	0.55
L	0.22	0.26	0.30
L2	-	0.65	-
L3	-	0.35	-
L4	-	0.152	-
a	0.21	0.25	0.29
b	0.47	0.51	0.55
l	0.11	0.15	0.19
k	0.00	-	0.03

Rev.03 202108

印章说明 / Marking Instructions



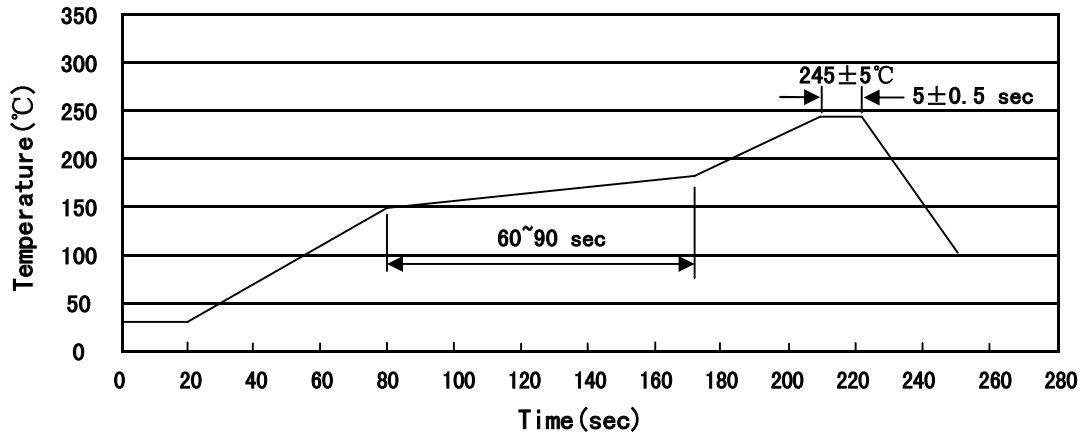
说明：

702K2： 为型号代码

Note:

702K2: Product Type

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
DFN1006-3L	10,000	10	100,000	4	400,000	7" × 8	210 × 205 × 205	445 × 230 × 435

使用说明 / Notices