

BRC57002K2WB

Rev.A Mar.-2024

描述 / Descriptions

SOT-523 塑封封装 N 沟道 MOS 场效应管。
N-CHANNEL MOSFET in a SOT-523 Plastic Package.

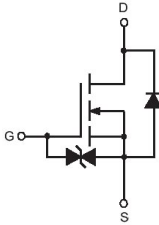
特征 / Features

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.

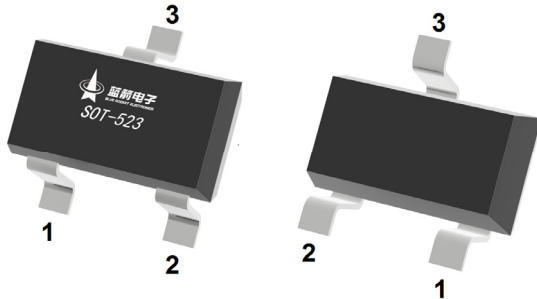
用途 / Applications

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



PIN 1 : G

PIN 2 : S

PIN 3 : D

印章代码 / Marking

Marking	K72
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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 _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current	I _D	340	mA
Drain Current – Pulsed	I _{DM}	1000	mA
Power Dissipation	P _D	250	mW
Junction Temperature Range	T _J	150	°C
Storage Temperature Range	T _{stg}	-55~150	°C
Thermal Resistance from Junction to Ambient	R _{θJA}	500	°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 =250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0 V _{DS} =48V			1.0	μA
Gate-Source Leakage current	I _{GSS}	V _{DS} =0V V _{GS} =±20V			±5	μA
Static Drain-Source On-Resistance	R _{DS(on)(1)}	V _{GS} =10V I _D =0.3A		0.9	2.5	Ω
	R _{DS(on)(2)}	V _{GS} =4.5V I _D =0.2A		1.1	3	Ω
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =300mA			1.2	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250uA	1.0	1.5	2.5	V
Input Capacitance	C _{iss}	V _{GS} =0V, f=1MHz, V _{DS} =30V		23.7		pF
Output Capacitance	C _{oss}			5.3		
Reverse Transfer Capacitance	C _{rss}			2.5		
Gate Resistance	R _g	V _{DS} = 0V, f = 1MHz V _{GS} = 0V,		160		Ω
Total Gate Charge	Q _g	V _{GS} =10V, I _D =300mA V _{DS} =30V;		0.29		nC
Gate-Source Charge	Q _{gs}			0.23		
Gate-Drain Charge	Q _{gd}			0.12		
Turn-On Delay Time	t _{d(ON)}	V _{GS} = 10V, V _{DD} =30V, R _L =100 Ω, R _G =3 Ω		3.5		ns
Rise Time	t _r			3.2		
Turn-Off Delay Time	t _{d(OFF)}			12		
Fall Time	t _f			10		

电参数曲线图 / Electrical Characteristic Curve

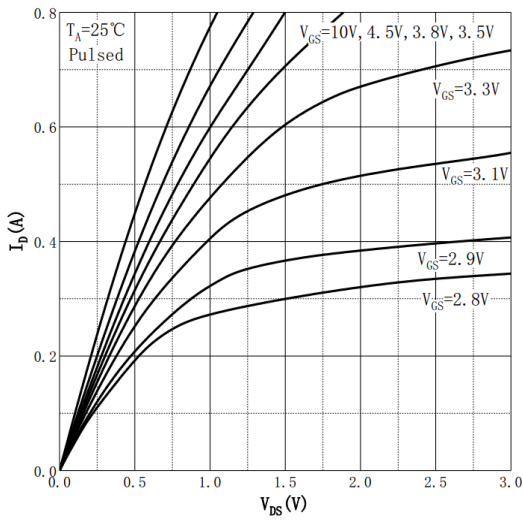


Figure.1 Output Characteristics

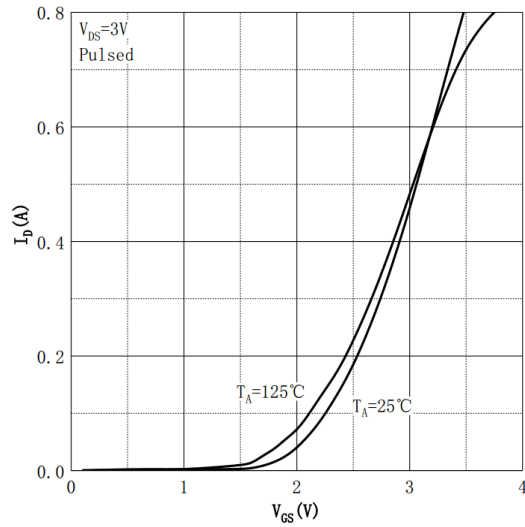


Figure.2 Transfer Characteristics

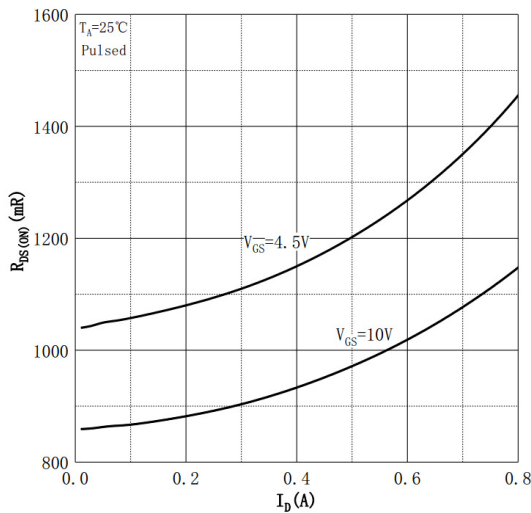


Figure.3 On-Resistance vs. Drain Current

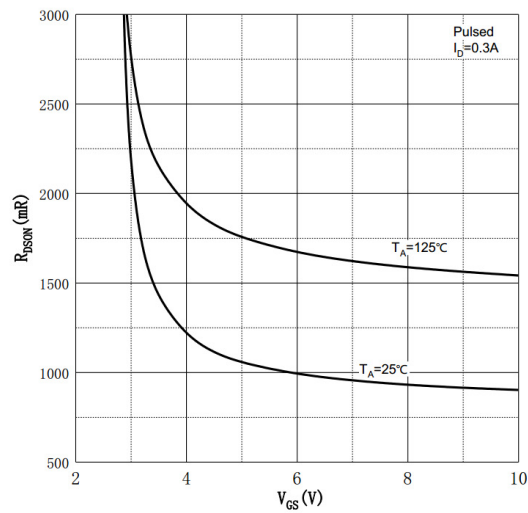


Figure.4 On-Resistance vs. Gate-to-Source Voltage

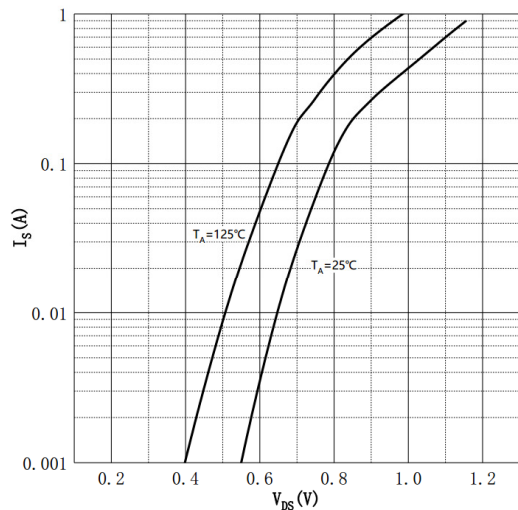


Figure.5 Diodes Forward Voltage vs. Current

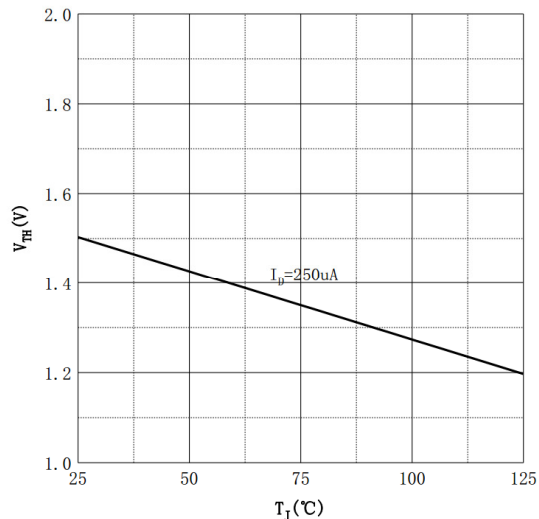
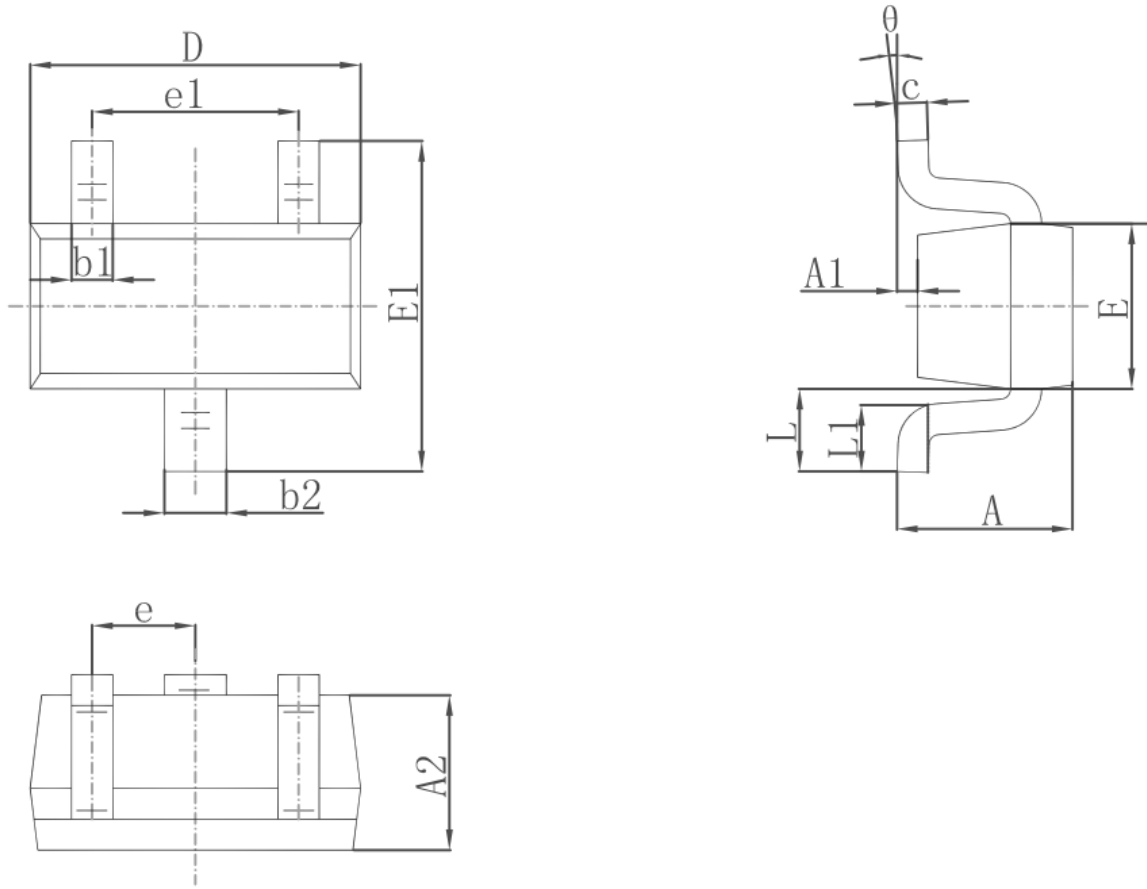


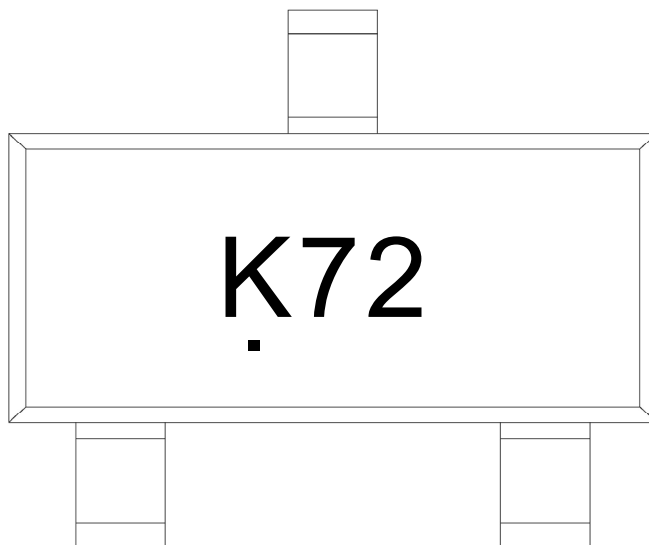
Figure.6 Threshold Voltage

外形尺寸图 / Package Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

印章说明 / Marking Instructions



说明：

K72： 为型号代码

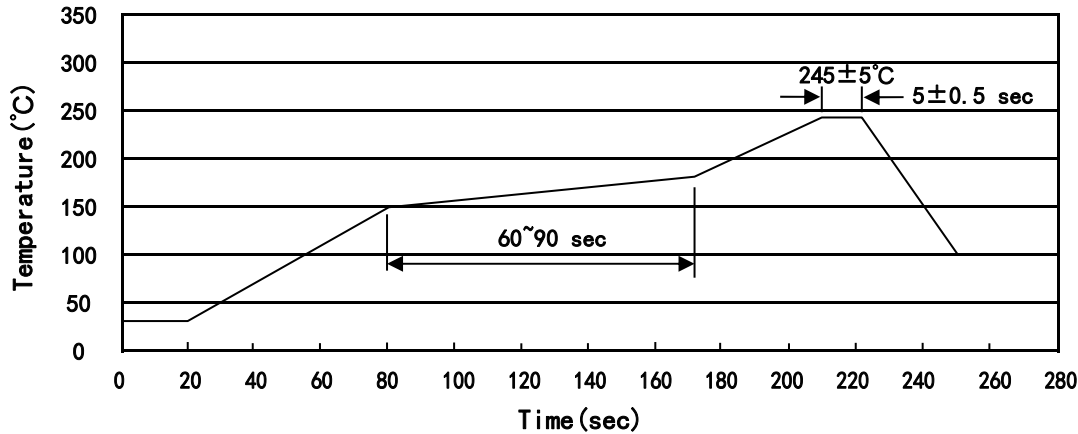
.： 为无卤产品代码

Note:

K72: Product Type Code

.: HF Product Code

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
SOT-523	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

使用说明 / Notices