

### 描述 / Descriptions

SOT-23 塑封封装 N 道 MOS 场效应管。N- CHANNEL MOSFET in a SOT-23 Plastic Package.

### 特征 / Features

低导通电阻,开关速度快,低电压驱动,简化驱动电路和易于并联设计,静电保护达 500V ( HBM ), 符合 AEC-Q101 标准高可靠性要求,无卤产品。

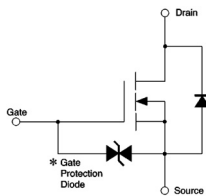
Low on-resistance, fast switching speed, low voltage drive, easily designed drive circuits, easy to parallel, ESD protected up to 500V ( HBM ), Qualified to AEC-Q101 Standards for High Reliability, HF Product.

### 用途 / Applications

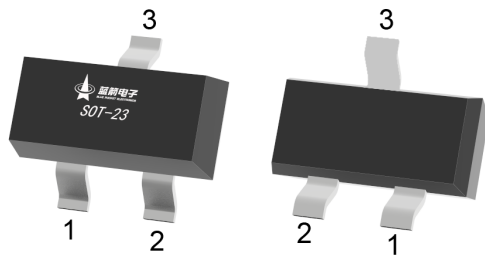
触摸屏, 交换开关, 满足汽车应用的严格要求。

Interfacing, switching, Meet the stringent requirements of automotive 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	QKL
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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 <sub>DSS</sub>	30	V
Gate-Source Voltage	V <sub>GSS</sub>	±20	V
Drain Current – Continuous	I <sub>D</sub>	100	mA
Drain Current- Pulsed	I <sub>DP</sub> *1	400	mA
Reverse Drain Current – Continuous	I <sub>DR</sub>	100	mA
Reverse Drain Current –Pulsed	I <sub>DRP</sub> *1	200	mA
Total Power Dissipation	P <sub>D</sub> *2	250	mW
Channel Temperature	T <sub>ch</sub>	150	V
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C

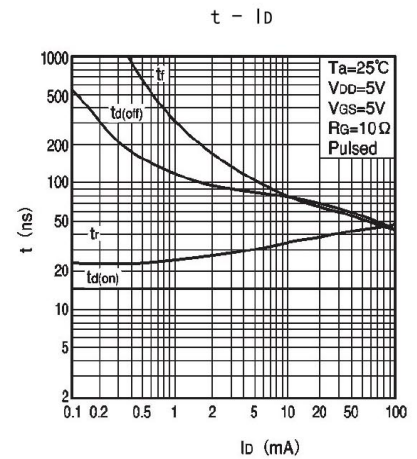
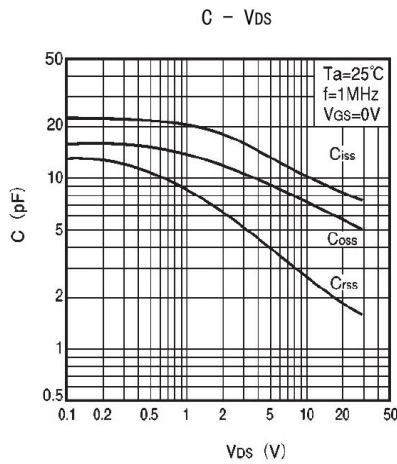
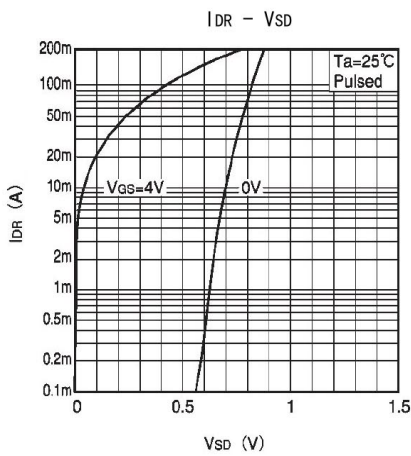
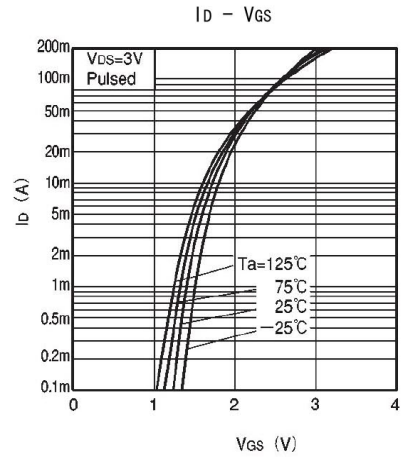
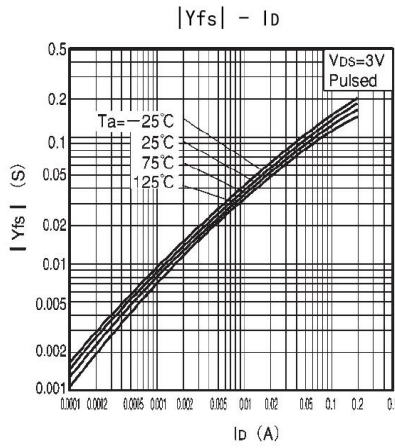
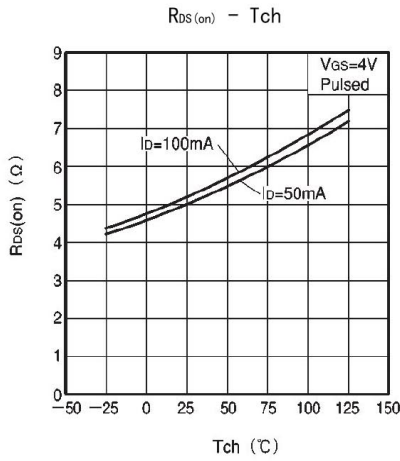
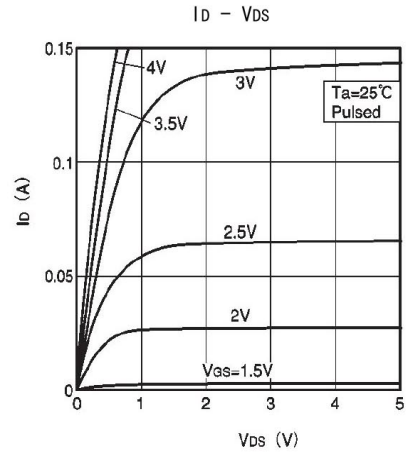
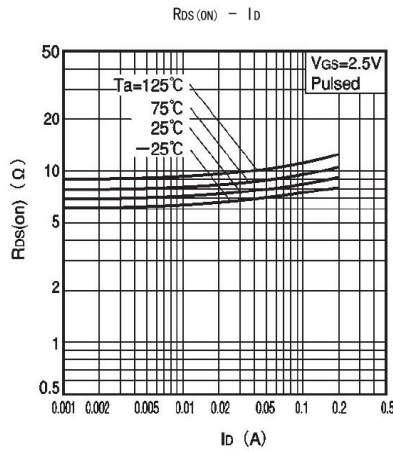
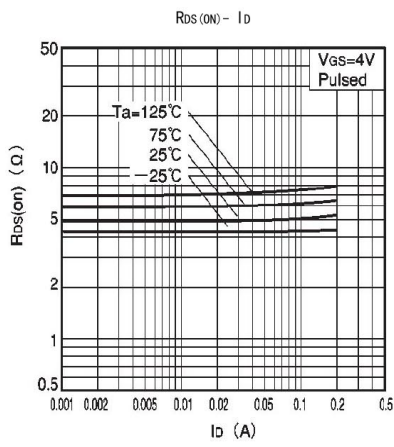
\*1: Pw ≤ 10 μs, Duty cycle ≤ 1%

\*2: With each pin mounted on the recommended lands

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 <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V I <sub>D</sub> =10μA	30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =3.0V I <sub>D</sub> =100μA	0.8		1.5	V
Static Drain–Source On–Resistance	R <sub>DS(on)1</sub>	V <sub>GS</sub> =4.0V I <sub>D</sub> =10mA		5.0	8.0	Ω
	R <sub>DS(on)2</sub>	V <sub>0047S</sub> =2.5V I <sub>D</sub> =1.0mA		7.0	13	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V V <sub>GS</sub> =0V			1.0	μA
Gate–Body Leakage.	I <sub>GSS</sub>	V <sub>GS</sub> =±20V V <sub>DS</sub> =0V			±1	μA
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =3V I <sub>D</sub> =10mA	20			mS
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =5.0V V <sub>GS</sub> =0V f=1.0MHz		13		pF
Output Capacitance	C <sub>oss</sub>			9.0		
Reverse Transfer Capacitance	C <sub>rss</sub>			4.0		
Turn–On Delay Time	t <sub>d(on)</sub>	I <sub>D</sub> =10mA V <sub>DD</sub> ≈5.0V V <sub>GS</sub> =5.0V R <sub>L</sub> =500Ω R <sub>GS</sub> =10Ω		15		ns
Turn–On Rise Time	t <sub>r</sub>			35		
Turn–Off Delay Time	t <sub>d(off)</sub>			80		
Turn–Off Fall Time	t <sub>f</sub>			80		

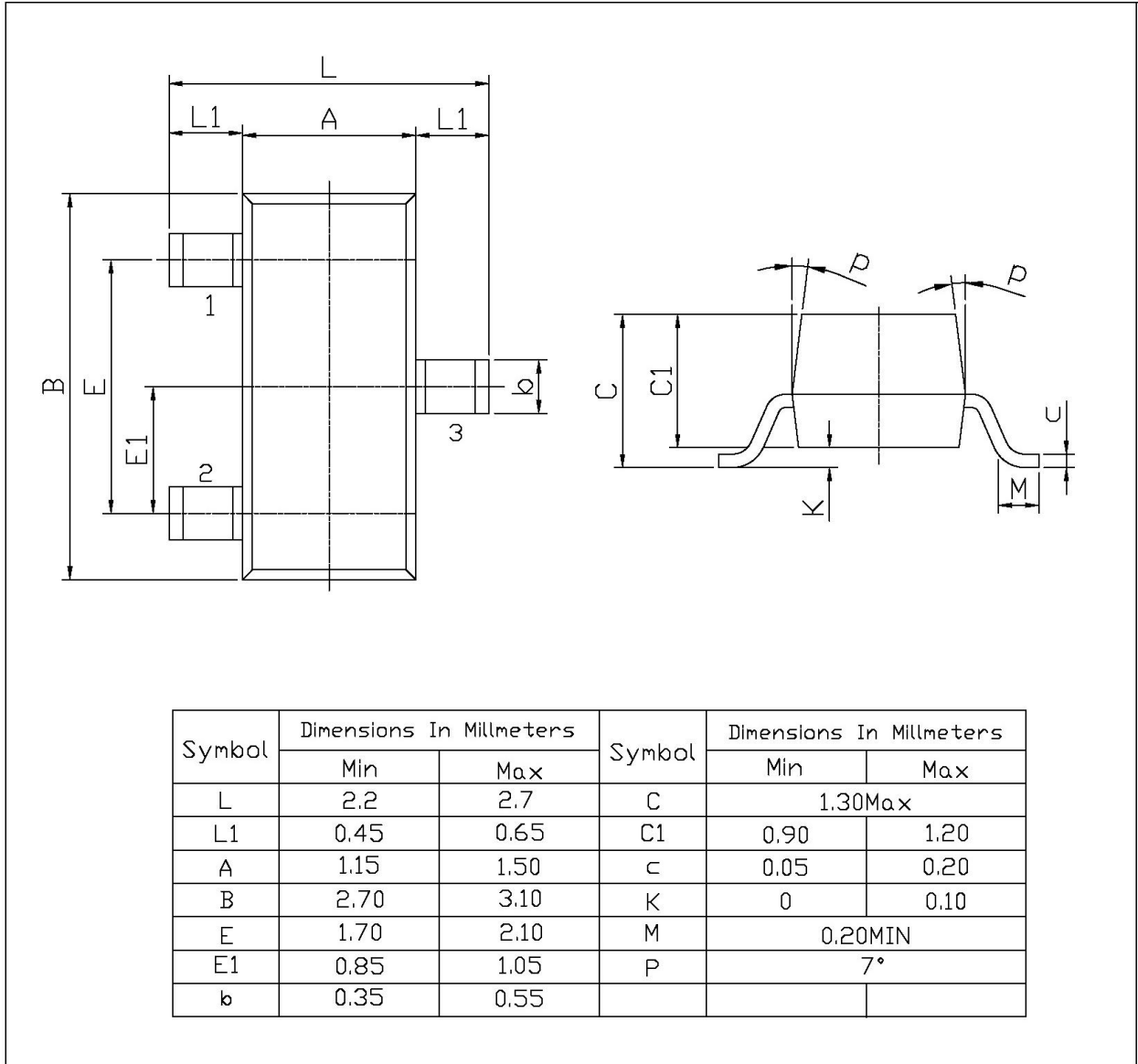
电参数曲线图 / Electrical Characteristic Curve



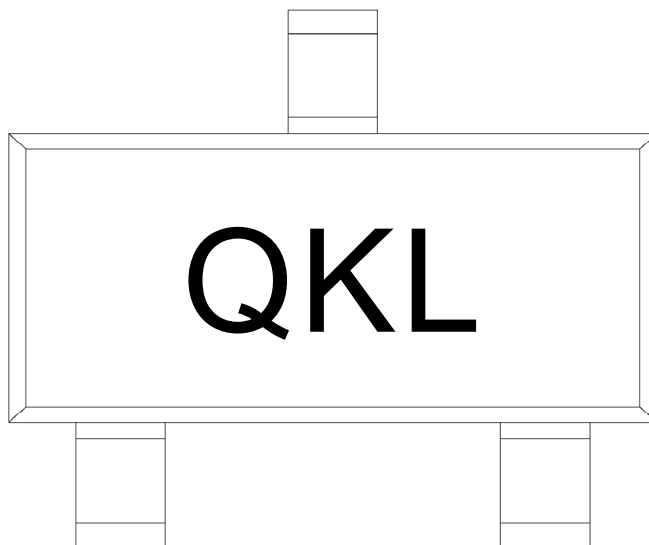
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

Q： 为汽车无卤产品标识

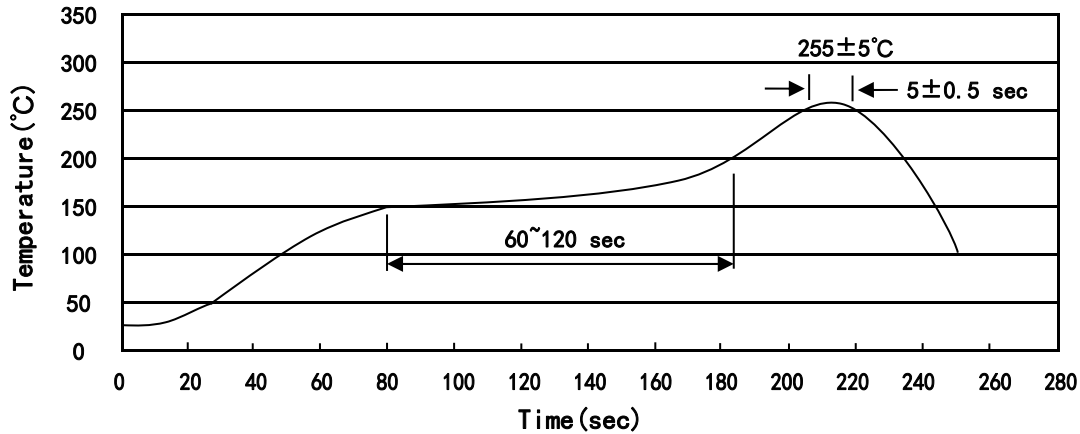
KL： 为型号代码

Note:

Q: Automobile halogen-free product Code

KL : Product Type 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 ~ 200°C，时间 60 ~ 120sec;
- 2、峰值温度 255±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:150~200°C, Time:60~120sec.
- 2.Peak Temp.:255±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 <sup>3</sup> )		
	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-23	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

**使用说明 / Notices**