

/ Descriptions

SOT-23 N MOS N- CHANNEL MOSFET in a SOT-23 Plastic Package.

/ Features

500V HBM

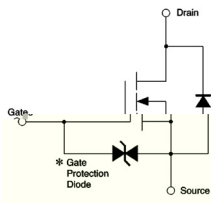
AEC-Q101

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.

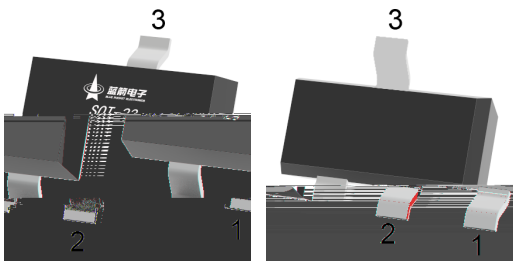
/ Applications

Interfacing, switching, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 S PIN 3 D

/ Marking

Marking	QKL
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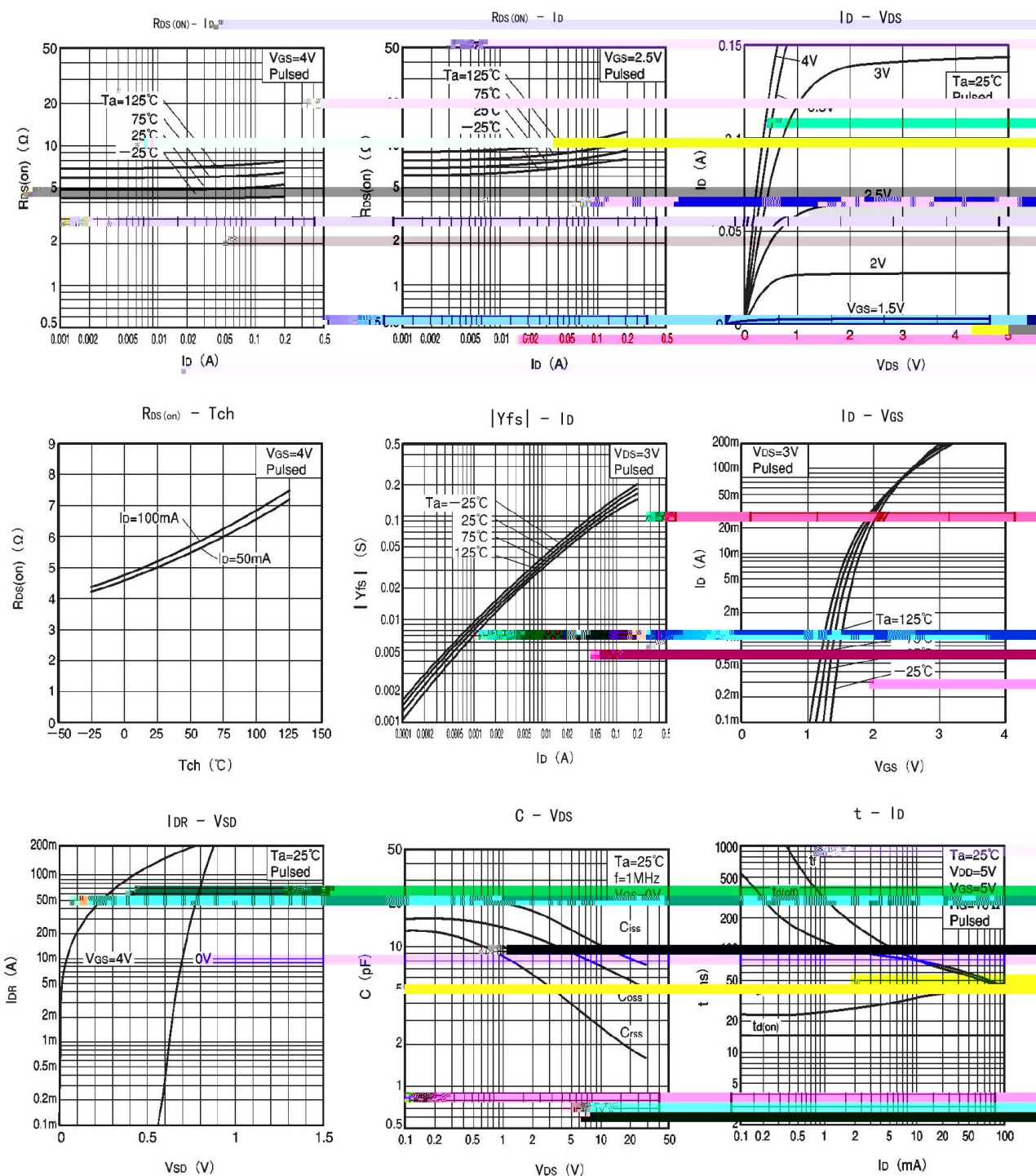
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current – Continuous	I_D	100	mA
Drain Current- Pulsed	I_{DP}^{*1}	400	mA
Reverse Drain Current – Continuous	I_{DR}	100	mA
Reverse Drain Current –Pulsed	I_{DRP}^{*1}	200	mA
Total Power Dissipation	P_D^{*2}	250	mW
Channel Temperature	T_{ch}	150	V
Storage Temperature Range	T_{stg}	-55 150	

*1: P_w 10 s, Duty cycle 1%

*2: With each pin mounted on the recommended lands

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V$ $I_D=10\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=3.0V$ $I_D=100\mu A$	0.8		1.5	V
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=4.0V$ $I_D=10mA$		5.0	8.0	Ω
	$R_{DS(on)2}$	$V_{0047S}=2.5V$ $I_D=1.0mA$		7.0	13	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$ $V_{GS}=0V$			1.0	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 1	μA
Forward Transconductance	g_{FS}	$V_{DS}=3V$ $I_D=10mA$	20			mS
Input Capacitance	C_{iss}	$V_{DS}=5.0V$ $V_{GS}=0V$ $f=1.0MHz$		13		pF
Output Capacitance	C_{oss}			9.0		
Reverse Transfer Capacitance	C_{rss}			4.0		
Turn–On Delay Time	$t_{d(on)}$	$I_D=10mA$ $V_{DD}\approx 5.0V$ $V_{GS}=5.0V$ $R_L=500\Omega$ $R_{GS}=10\Omega$		15		ns
Turn–On Rise Time	t_r			35		
Turn–Off Delay Time	$t_{d(off)}$			80		
Turn–Off Fall Time	t_f			80		

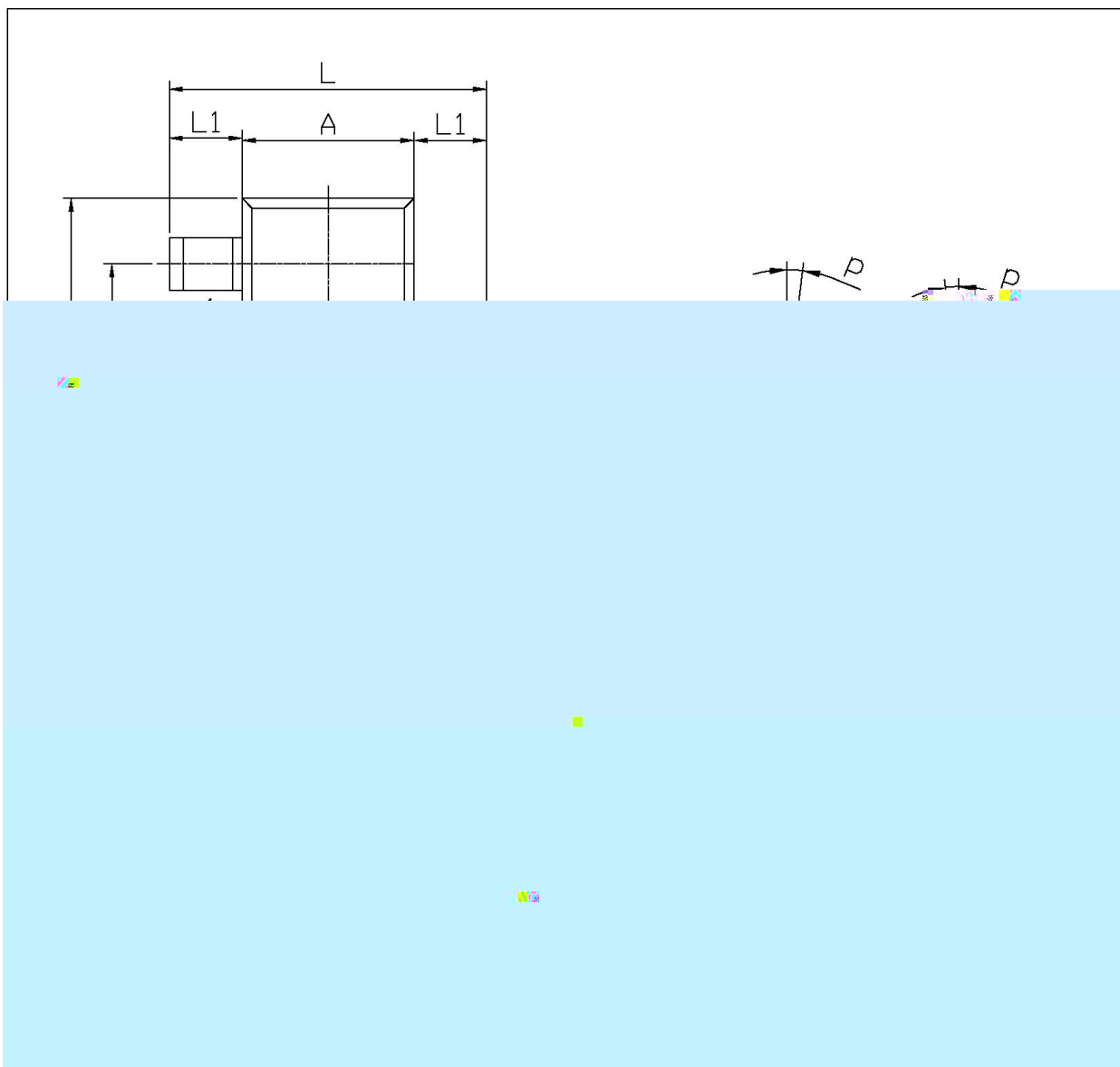
/ Electrical Characteristic Curve



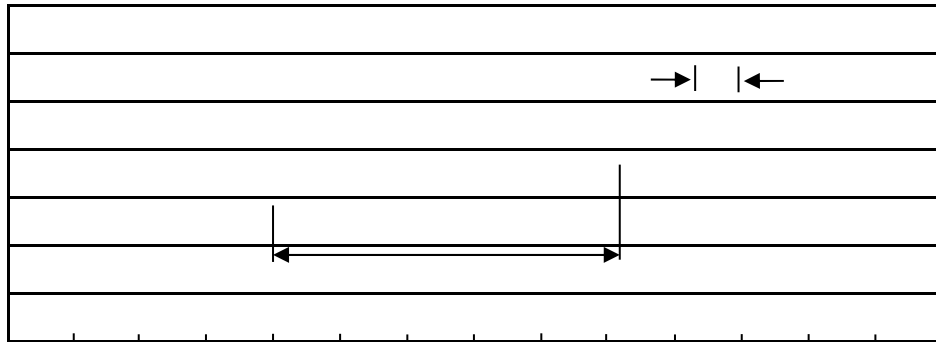
/ Package Dimensions

SOT-23

单位; mm



() / **Temperature Profile for IR Reflow Soldering(Pb-Free)**



Note:

- | | | | | | |
|---|-------|-----|-----------|---|--|
| 1 | 150 | 200 | 60 | 120sec; | 1.Preheating:150~200 , Time:60~120sec. |
| 2 | 255±5 | | 5±0.5sec; | 2.Peak Temp.:255±5 , Duration:5±0.5sec. | |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ **Resistance to Soldering Heat Test Conditions**

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ **Packaging SPEC.**

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
SOT-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ **Notices**