



HAICHUANG SEMI

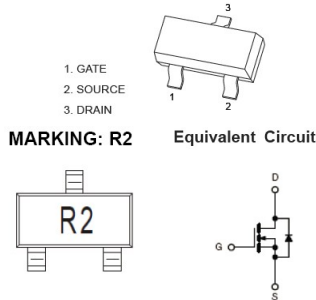
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SOT-23 贴片塑封场效应管 SOT-23 Plastic-Encapsulate MOSFET

N-Channel MOSFET

V(BR)DSS	RDS(ON)MAX	ID
30V	55mΩ@10V	4A
	70mΩ@4.5V	
	110mΩ@2.5V	

SOT-23



DESCRIPTION

The 3402 uses advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltage as low as 2.5V. This device is suitable for use as load switch or in PWM application.

Features

- Lead free product is acquired
- Surface mount package

Mechanical Data

- SOT-23 Small Outline Plastic Package.
- Epoxy UL: 94V-0.
- Mounting Position: Any.

极限值和温度特性(TA = 25°C 除非另有规定)

Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

参数 Parameters	符号 Symbol	数值 Value	单位 Unit
Drain-Source Voltage	V _{DS}	30	V
Gate-Source Voltage	V _{GS}	±12	V
Continuous Drain Current	I _D	4	A
Drain Current-Pulsed(note 1)	I _{DM}	15	
Power Dissipation	P _D	350	mW
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-50-+150	°C
Thermal Resistance From Junction to Ambient (note 2)	R _{θJA}	357	°C/W

电特性 (TA = 25°C 除非另有规定)

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

参数 Parameter	符号 Symbols	测试条件 Test Condition	界限 Limits			单位 Unit
			Min	Typ	Max	
Off characteristics						
Drain-Source Breakdown Voltage	V(BR)DSS	V _{GS} =0V, I _D =250uA	30			V
Zero Gate Voltage Drain current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	uA
Gate-body Leakage	I _{GSS}	V _{DS} =±12V, V _{GS} =0V			±100	nA
On characteristics						
Drain-Source On-Resistance (note 3)	RDS(ON)	V _{GS} =10V, I _D =4A		33	55	mΩ
		V _{GS} =4.5V, I _D =3A		39	70	
		V _{GS} =2.5V, I _D =2A		48	110	
Forward trans conductance	g _{fs}	V _{DS} =15V, I _D =4A		8		S
Gate-Threshold voltage*	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	0.6	0.85	1.4	V
Dynamic characteristics (note 4,5)						
Input capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz		390		pF
Output capacitance	C _{oss}			54.5		
Reverse Transfer capacitance	C _{rss}			41		
Gate resistance	R _g	V _{DS} =0V, V _{GS} =0V, f=1MHz		3		Ω
Switching characteristics (note 4,5)						
Turn-on Time	t _{d(on)}	V _{GS} =10V, R _L =3.75Ω, V _{DS} =15V, R _{GEN} =6Ω		3.3		ns
Rise time	t _r			1		
Turn-off Time	t _{d(off)}			21.7		
Fall time	t _f			2.1		
Total gate charge	Q _g	V _{DS} =15V, V _{GS} =4.5V, I _D =4A		4.34		nC
Gate-source charge	Q _{gs}			0.6		nC
Gate-drain charge	Q _{gd}			1.38		nC
Drain-source diode characteristics and maximum ratings						
Diode forward voltage	V _{SD}	I _S =1A, V _{GS} =0V			1.0	V



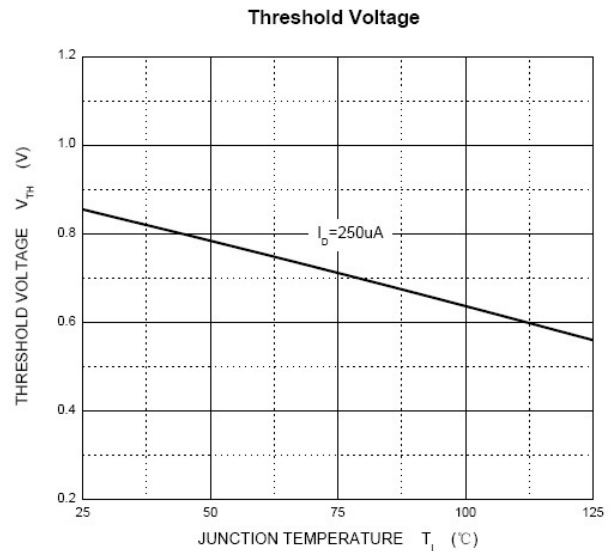
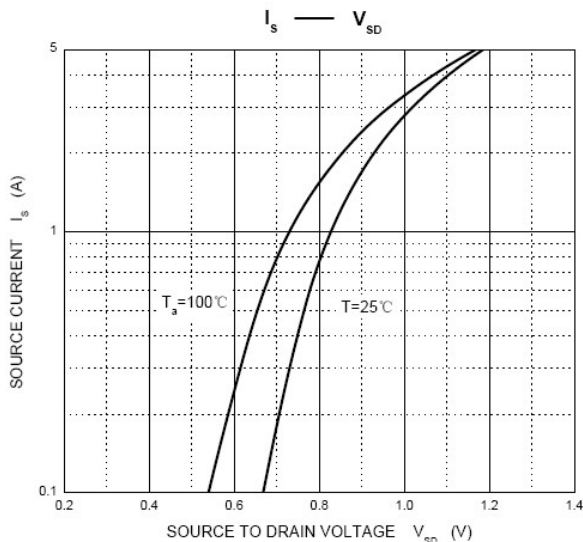
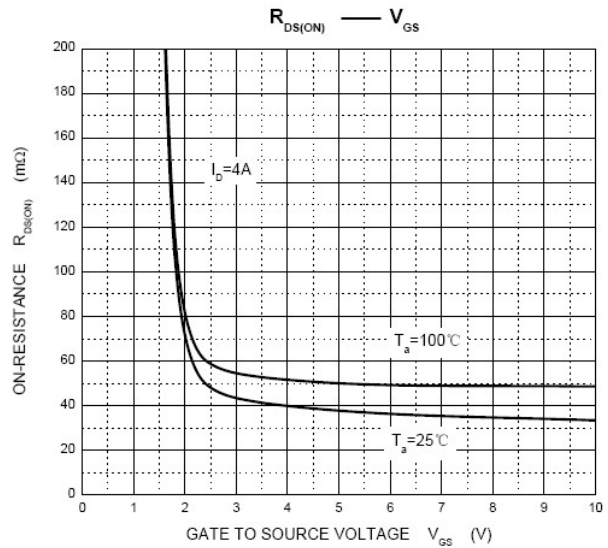
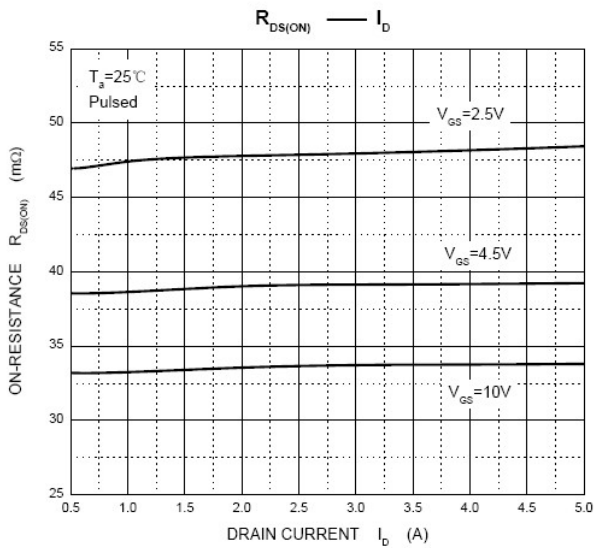
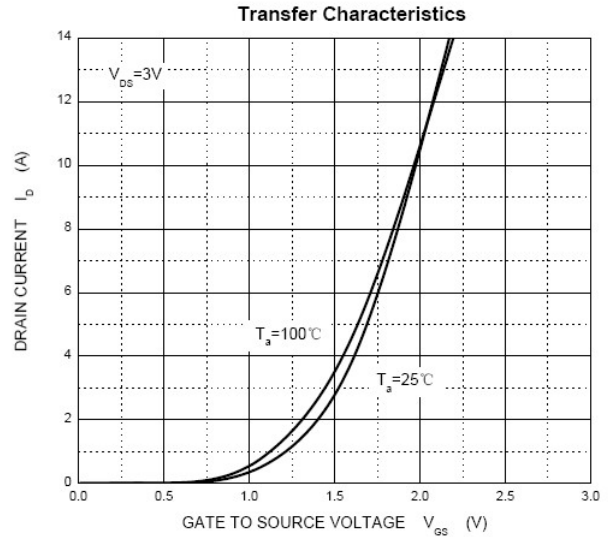
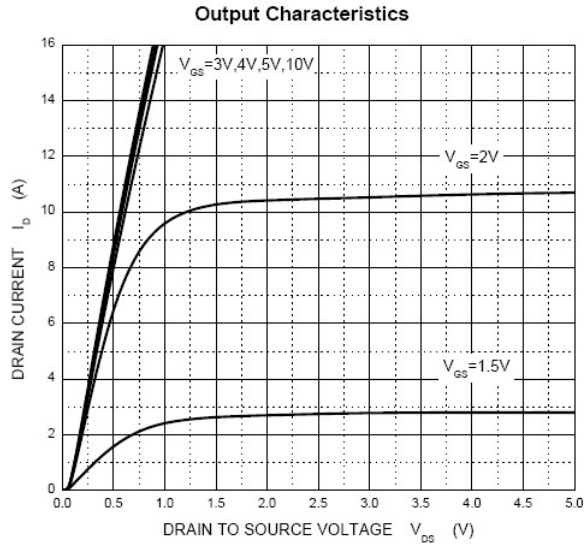
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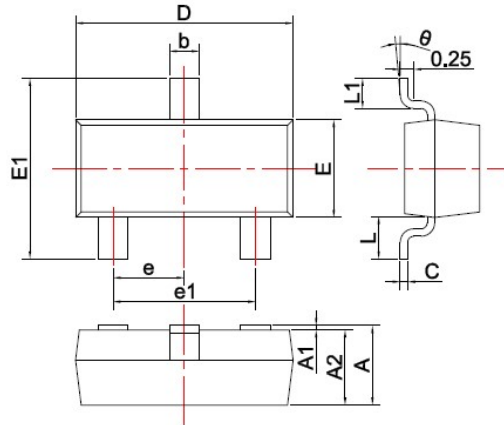
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- Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
 2. Surface Mounted on FR4 Board, $t < 5$ sec.
 3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
 4. Guaranteed by design, not subject to production testing.

Typical characteristics



SOT-23 PACKAGE OUTLINE Plastic surface mounted package

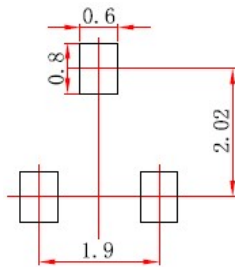


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
H	0°	8°

Unit: mm

焊盘设计参考 Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



- Note:
1. Controlling dimension; in millimeters.
 2. General tolerance: ± 0.05 mm.
 3. The pad layout is for reference purposes only.