3401S/C(文件编号：S&CIC1950) P-Channel Trench Power MOSFET

Description

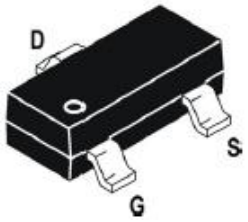
Features

- V_{DS}=-30V, I_D=-2.6A
- $R_{DS(ON)}$ <206 mΩ @ V_{GS} =-2.5V
  $R_{DS(ON}$ <180mΩ @ V_{GS} =-4.5V
  $R_{DS(ON}$ <130mΩ @ V_{GS} = -10V
- High Power and Current Handing Capability
- Lead Free Product is Acquired
- Surface Mount Package

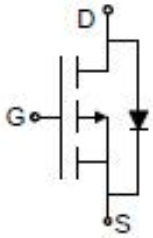
Application

- PWM Applications
- Load Switch
- Power Management

Package



SOT-23



Schematic Diagram

Absolute Maximum Ratings (T_C=25℃ unless otherwise specified)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate-Source Voltage		±12	V
I_D	Continuous Drain Current	T_C = 25℃	-2.6	A
		T_C = 100℃	-2.0	
P_D	Power Dissipation	T_C = 25℃	1.2	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		115	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

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Electrical Characteristics (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D= -250μA	-30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -24V, V_{GS} = 0V,	-	-	-1	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS} =0V, V_{GS} = ±10V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D= -250μA	-0.4	-0.7	-1.3	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS} =-10V, I_D =-2.6A	-	98	130	mΩ
		V_{GS} =-4.5V, I_D =-2A	-	120	180	
		V_{GS} =-2.5V, I_D =-1A	-	150	206	
g_{FS}	Forward Transconductance	V_{DS} =-5V, I_D = -2.6A	-	6	-	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = -15V, V_{GS} = 0V, f = 1.0MHz	-	1021	-	pF
C_{oss}	Output Capacitance		-	134	-	pF
C_{rss}	Reverse Transfer Capacitance		-	83	-	pF
Q_g	Total Gate Charge	V_{DS}= -15V, I_D = -2.6A, V_{GS} = -4.5V	-	9.2	-	nC
Q_{gs}	Gate-Source Charge		-	2.1	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	3.3	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD} = -15V, I_D = -2.6A, V_{GS} =-10V, R_{GEN}=6Ω	-	9	-	ns
t_r	Turn-on Rise Time		-	5	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	36	-	ns
t_f	Turn-off Fall Time		-	16	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-2.6	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_S = -2.6A	-	-	-1.2	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

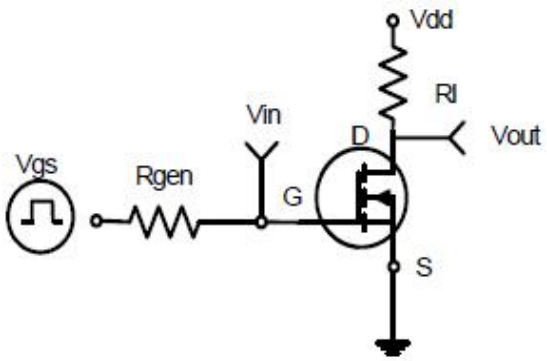


Figure1:Switching Test Circuit

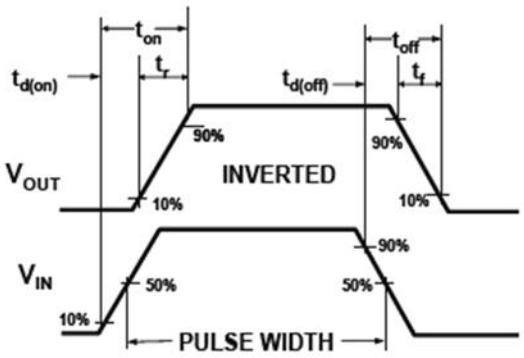
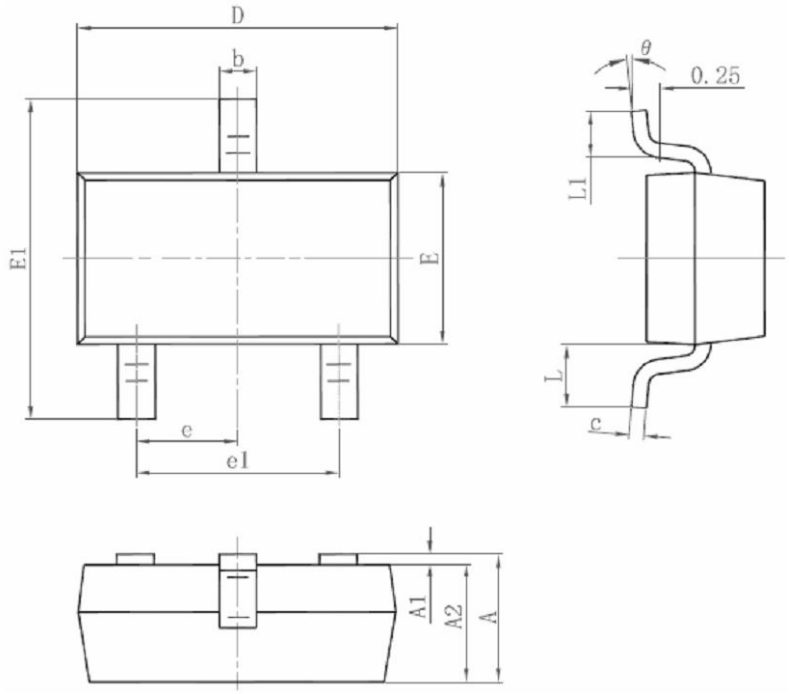


Figure2:Switching Waveforms

Package Information.

- SOT23-3(小)



符号	毫米		英寸	
	最小	最大	最小	最大
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°