



## Description

<p><b>Features</b></p> <ul style="list-style-type: none"> <li>• <math>V_{DS}=30V, I_D=3.5A</math></li> <li>• <math>R_{DS(ON)} &lt; 70m\Omega @ V_{GS} = 4.5V</math> <math>R_{DS(ON)} &lt; 58m\Omega @ V_{GS} = 10V</math></li> <li>• High Power and Current Handling Capability</li> <li>• Lead Free Product is Acquired</li> <li>• Surface Mount Package</li> </ul>	<p><b>Application</b></p> <ul style="list-style-type: none"> <li>• PWM Applications</li> <li>• Load Switch</li> <li>• Power Management</li> </ul>
<p><b>Package</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div data-bbox="268 913 507 1126"> <p style="text-align: center;">SOT-23</p> </div> <div data-bbox="1010 880 1153 1104"> <p style="text-align: center;">Schematic Diagram</p> </div> </div>	

## Absolute Maximum Ratings (T<sub>C</sub>=25°C unless otherwise specified)

Symbol	Parameter	Max.	Units
V <sub>DSS</sub>	Drain-Source Voltage	30	V
V <sub>GSS</sub>	Gate-Source Voltage	±12	V
I <sub>D</sub>	Continuous Drain Current	T <sub>C</sub> = 25°C	3.5
		T <sub>C</sub> = 100°C	2.5
P <sub>D</sub>	Power Dissipation	T <sub>C</sub> = 25°C	1.2
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	124	°C/W
T <sub>J</sub> , T <sub>STG</sub>	Operating and Storage Temperature Range	-55 to +150	°C



**Electrical Characteristics** ( $T_C=25^\circ\text{C}$  unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristic</b>						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=30V, V_{GS}=0V$	-	-	1	$\mu A$
$I_{GSS}$	Gate to Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	$\pm 100$	nA
<b>On Characteristics</b>						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.7	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance <small>note2</small>	$V_{GS}=4.5V, I_D=2.0A$	-	56	70	m $\Omega$
		$V_{GS}=10V, I_D=3.0A$	-	42	58	
$g_{FS}$	Forward Transconductance	$V_{DS}=5V, I_D=2.5A$	4	-	-	S
<b>Dynamic Characteristics</b>						
$C_{iss}$	Input Capacitance	$V_{DS}=15V, V_{GS}=0V,$ $f=1.0MHz$	-	718	-	pF
$C_{oss}$	Output Capacitance		-	106	-	pF
$C_{rss}$	Reverse Transfer Capacitance		-	75	-	pF
$Q_g$	Total Gate Charge	$V_{DS}=15V, I_D=2.5A,$ $V_{GS}=4.5V$	-	9.2	-	nC
$Q_{gs}$	Gate-Source Charge		-	1.4	-	nC
$Q_{gd}$	Gate-Drain("Miller") Charge		-	3.6	-	nC
<b>Switching Characteristics</b>						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=15V, I_D=2.5A,$ $R_{GEN}=3\Omega, V_{GS}=10V$	-	4.1	-	ns
$t_r$	Turn-on Rise Time		-	5.3	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	24	-	ns
$t_f$	Turn-off Fall Time		-	3.9	-	ns
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
$I_S$	Maximum Continuous Drain to Source Diode Forward Current		-	-	3.5	A
$V_{SD}$	Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=2.5A$	-	0.75	1.2	V

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

2. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$



Typical Performance Characteristics

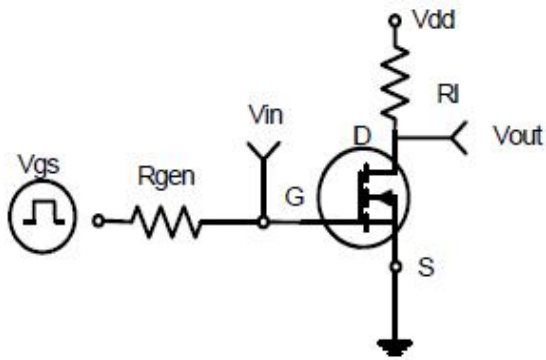


Figure1: Switching Test Circuit

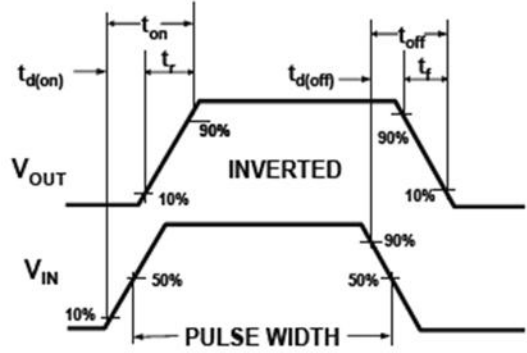


Figure2: Switching Waveforms

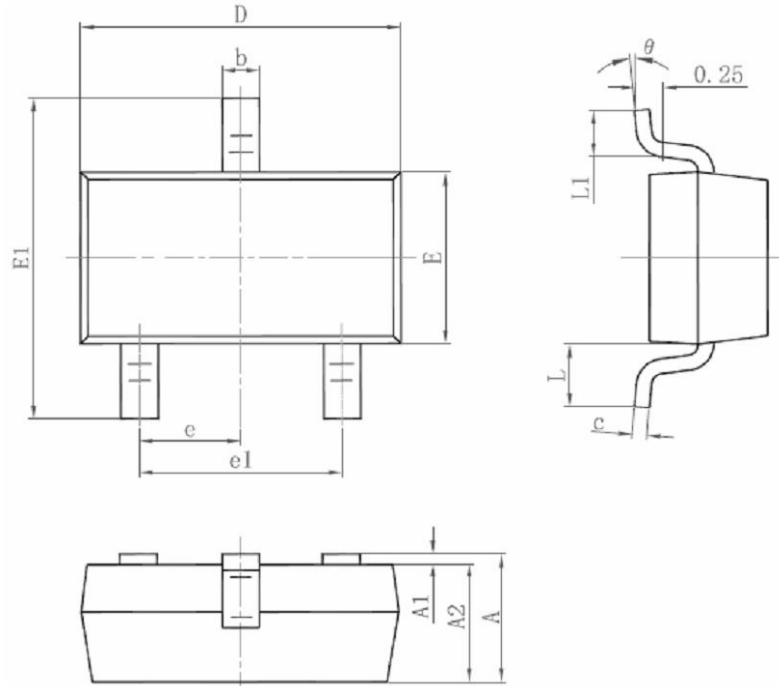


3400S/C(文件编号: S&CIC1953)

N-Channel Trench Power MOSFET

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°