



Description

<p>Features</p> <ul style="list-style-type: none"> • $V_{DS}=30V, I_D=6.0A$ • $R_{DS(ON)} < 54m\Omega @ V_{GS} = 4.5V$ $R_{DS(ON)} < 42m\Omega @ V_{GS} = 10V$ • High Power and Current Handling Capability • Lead Free Product is Acquired • Surface Mount Package 	<p>Application</p> <ul style="list-style-type: none"> • PWM Applications • Load Switch • Power Management
<p>Package</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div data-bbox="268 913 510 1131"> <p style="text-align: center;">SOT-23</p> </div> <div data-bbox="1013 878 1157 1108"> <p style="text-align: center;">Schematic Diagram</p> </div> </div>	

Absolute Maximum Ratings (T_C=25°C unless otherwise specified)

Symbol	Parameter	Max.	Units
V _{DSS}	Drain-Source Voltage	30	V
V _{GSS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current	T _C = 25°C	6.0
		T _C = 100°C	4
P _D	Power Dissipation	T _C = 25°C	1.4
R _{θJA}	Thermal Resistance, Junction to Ambient	112	°C/W
T _J , T _{STG}	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
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	40	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=30V, V_{GS}=0V$	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.6	2	V
$R_{DS(on)}$	Static Drain-Source on-Resistance <small>note2</small>	$V_{GS}=4.5V, I_D=2A$	-	38	54	m Ω
		$V_{GS}=10V, I_D=3A$	-	32	42	
g_{FS}	Forward Transconductance	$V_{DS}=5V, I_D=6.0A$	6	-	-	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V,$ $f=1.0MHz$	-	782	-	pF
C_{oss}	Output Capacitance		-	123	-	pF
C_{rss}	Reverse Transfer Capacitance		-	81	-	pF
Q_g	Total Gate Charge	$V_{DS}=15V, I_D=6.0A,$ $V_{GS}=4.5V$	-	10.4	-	nC
Q_{gs}	Gate-Source Charge		-	1.8	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	3.5	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=15V, I_D=6.0A,$ $R_{GEN}=3\Omega, V_{GS}=10V$	-	3.8	-	ns
t_r	Turn-on Rise Time		-	5.2	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	28	-	ns
t_f	Turn-off Fall Time		-	4.4	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	6.0	A
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=6.0A$	-	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

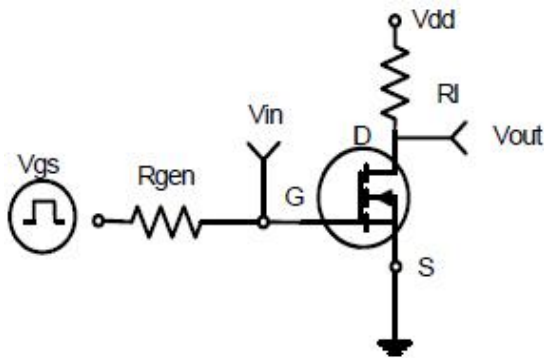


Figure1:Switching Test Circuit

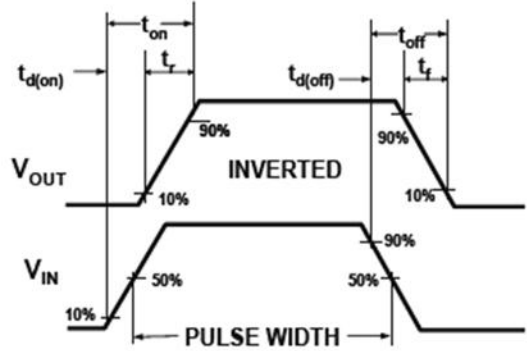
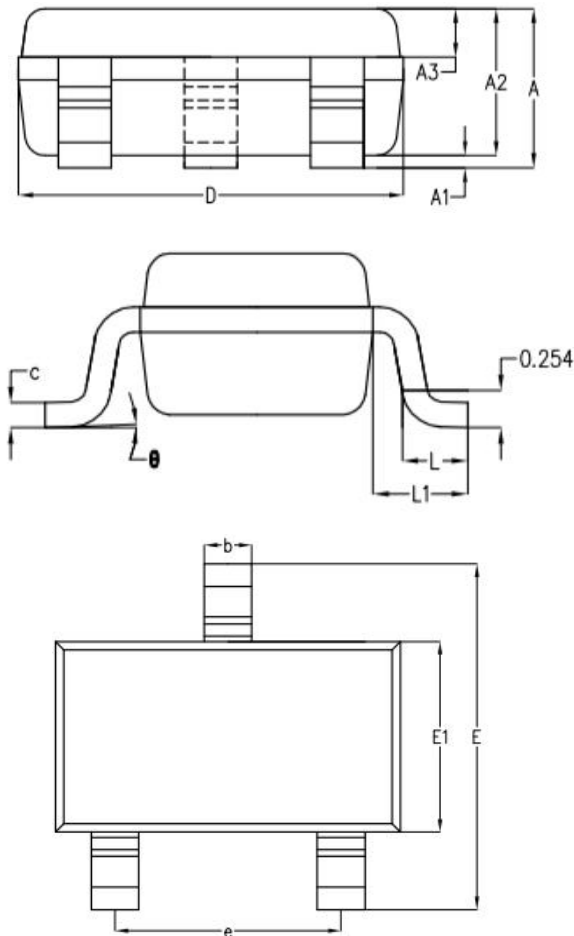


Figure2:Switching Waveforms

Package Information.

➤ SOT23-3(大)



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	-	1.19	1.24
A1	-	0.05	0.09
A2	1.05	1.10	1.15
A3	0.31	0.36	0.41
b	0.35	0.40	0.45
c	0.12	0.17	0.22
D	2.85	2.90	2.95
E	2.80	2.90	3.00
E1	1.55	1.60	1.65
e	1.90BSC		
L	0.37	0.45	0.53
L1	0.65BSC		
θ	0°	2°	8°