



### Description

#### P-channel MOSFET

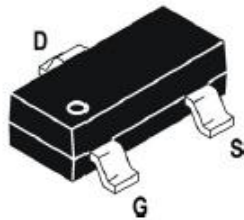
##### Features

- $V_{DS} = -17V$ ,  $I_D = -2.0A$
- $R_{DS(ON)} < 115m\Omega$  @  $V_{GS} = -4.5V$   
 $R_{DS(ON)} < 165m\Omega$  @  $V_{GS} = -2.5V$
- High Power and Current Handling Capability
- Lead Free Product is Acquired
- Surface Mount Package

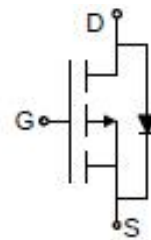
##### Application

- PWM Applications
- Load Switch
- Power Management

##### Package



SOT-23



Schematic Diagram

### Absolute Maximum Ratings ( $T_C = 25^\circ C$ unless otherwise specified)

Symbol	Parameter	Max.	Units
$V_{DSS}$	Drain-Source Voltage	-17	V
$V_{GSS}$	Gate-Source Voltage	$\pm 12$	V
$I_D$	Continuous Drain Current	$T_C = 25^\circ C$	-2.0
		$T_C = 100^\circ C$	-1.4
$P_D$	Power Dissipation	$T_A = 25^\circ C$	0.65
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	175	$^\circ C/W$
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to +150	$^\circ C$



**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	$V_{GS}=0V, I_D = -250\mu A$	-12	-17	-	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = -15V, V_{GS} = 0V,$	-	-	-1	$\mu A$
$I_{GSS}$	Gate to Body Leakage Current	$V_{DS} = 0V, V_{GS} = \pm 12V$	-	-	$\pm 100$	nA
<b>On Characteristics</b>						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.6	-1.0	V
$R_{DS(on)}$	Static Drain-Source on-Resistance <small>note2</small>	$V_{GS} = -4.5V, I_D = -1A$	-	95	115	m $\Omega$
		$V_{GS} = -2.5V, I_D = -0.5A$	-	120	165	
$g_{FS}$	Forward Transconductance	$V_{DS} = -5V, I_D = -1.5A$	4	-	-	S
<b>Dynamic Characteristics</b>						
$C_{iss}$	Input Capacitance	$V_{DS} = -10V, V_{GS} = 0V, f = 1.0MHz$	-	332	-	pF
$C_{oss}$	Output Capacitance		-	69	-	pF
$C_{rss}$	Reverse Transfer Capacitance		-	42	-	pF
$Q_g$	Total Gate Charge	$V_{DS} = -10V, I_D = -2.5A, V_{GS} = -4.5V$	-	3.0	-	nC
$Q_{gs}$	Gate-Source Charge		-	0.58	-	nC
$Q_{gd}$	Gate-Drain("Miller") Charge		-	0.76	-	nC
<b>Switching Characteristics</b>						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD} = -10V, R_L = 5\Omega, R_{GEN} = 3\Omega, V_{GS} = -4.5V,$	-	14	-	ns
$t_r$	Turn-on Rise Time		-	5.6	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	21.5	-	ns
$t_f$	Turn-off Fall Time		-	7.9	-	ns
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
$I_S$	Maximum Continuous Drain to Source Diode Forward Current		-	-	-2.0	A
$V_{SD}$	Drain to Source Diode Forward Voltage	$V_{GS} = 0V, I_S = -2.0A$	-	-	-1.3	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

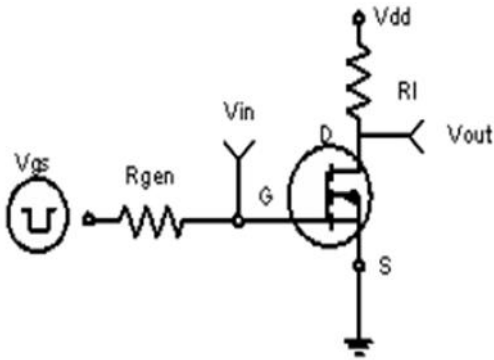


Figure1:Switching Test Circuit

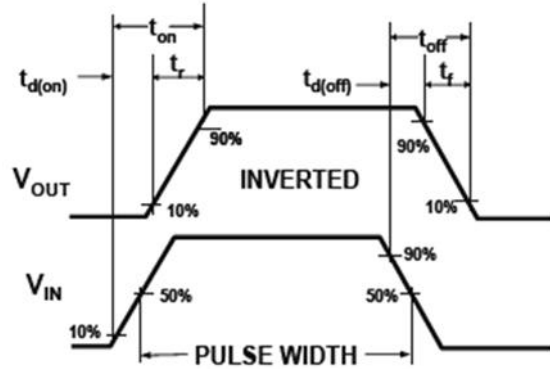


Figure2:Switching Waveforms

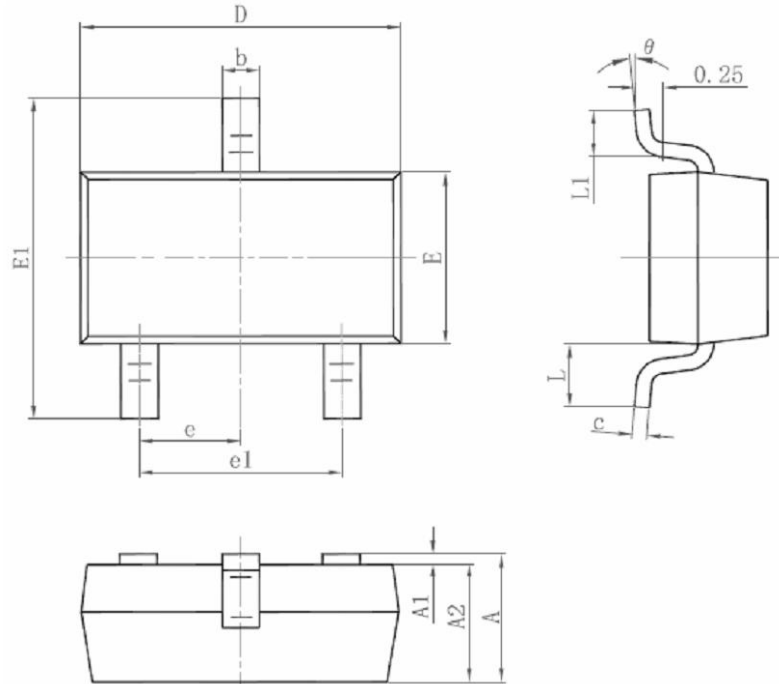


J3415.(文件编号: S&CIC1831)

### P-Channel Trench Power MOSFET

#### Package Information.

➤ SOT-23(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°