



Description

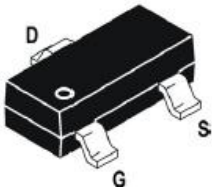
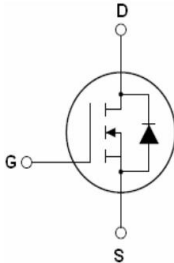
N-channel MOSFET	
Features <ul style="list-style-type: none"> • $V_{DS} = 20V, I_D = 2.8A$ • $R_{DS(ON)} < 58m\Omega @ V_{GS} = 4.5V$ • $R_{DS(ON)} < 75m\Omega @ V_{GS} = 2.5V$ • High Power and current handling capability • Lead free product is acquired • Surface Mount Package 	Application <ul style="list-style-type: none"> • Battery protection • Load switch • Power management
Package <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>SOT-23</p> </div> <div style="text-align: center;">  <p>Schematic Diagram</p> </div> </div>	

Table 1. Absolute Maximum Ratings ($T_A=25^\circ C$)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage ($V_{GS}=0V$)	20	V
V_{GS}	Gate-Source Voltage ($V_{DS}=0V$)	± 12	V
I_D	Drain Current-Continuous	2.8	A
P_D	Maximum Power Dissipation	1	W
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	$^\circ C$

Table 2. Thermal Characteristic

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	126	$^\circ C/W$



Table 3. Electrical Characteristics (T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	20			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V			1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V			±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.4	0.7	1.0	V
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =2.8A		6.2		S
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =2.0A		48	58	mΩ
		V _{GS} =2.5V, I _D =1.0A		60	75	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1.0MHz		486		pF
C _{oss}	Output Capacitance			92		pF
C _{rss}	Reverse Transfer Capacitance			56		pF
Switching Times						
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =2.8A, R _L =2.8Ω V _{GS} =4.5V, R _G =6Ω		13		nS
t _r	Turn-on Rise Time			55		nS
t _{d(off)}	Turn-Off Delay Time			21		nS
t _f	Turn-Off Fall Time			15		nS
Q _g	Total Gate Charge	V _{DS} =10V, I _D =2.8A, V _{GS} =4.5V		4.3		nC
Q _{gs}	Gate-Source Charge			0.85		nC
Q _{gd}	Gate-Drain Charge			1.64		nC
Source-Drain Diode Characteristics						
I _{SD}	Source-Drain Current(Body Diode)				2.8	A
V _{SD}	Forward on Voltage ^(Note 1)	V _{GS} =0V, I _S =2.8A		0.70	1.2	V

Notes 1. Repetitive Rating: Pulse width limited by maximum junction temperature.



Typical Performance Characteristics

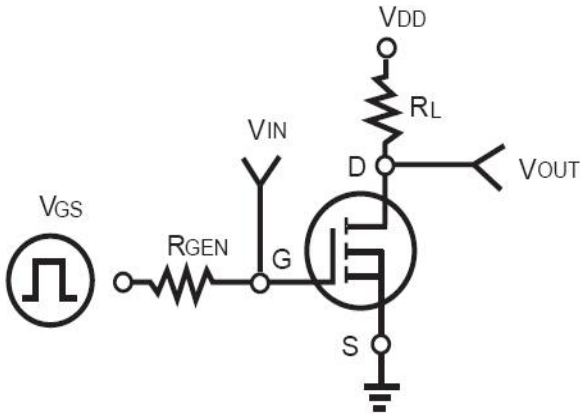


Figure1:Switching Test Circuit

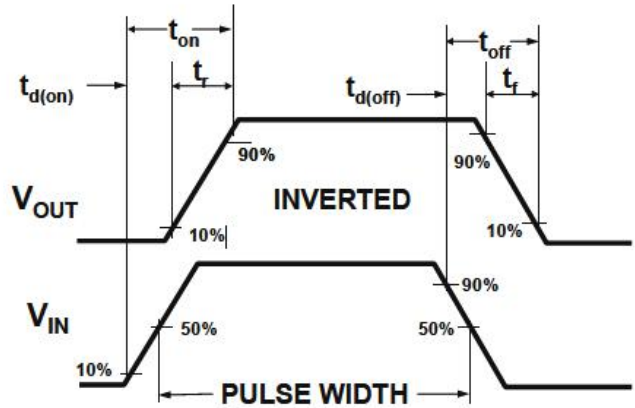


Figure2:Switching Waveforms

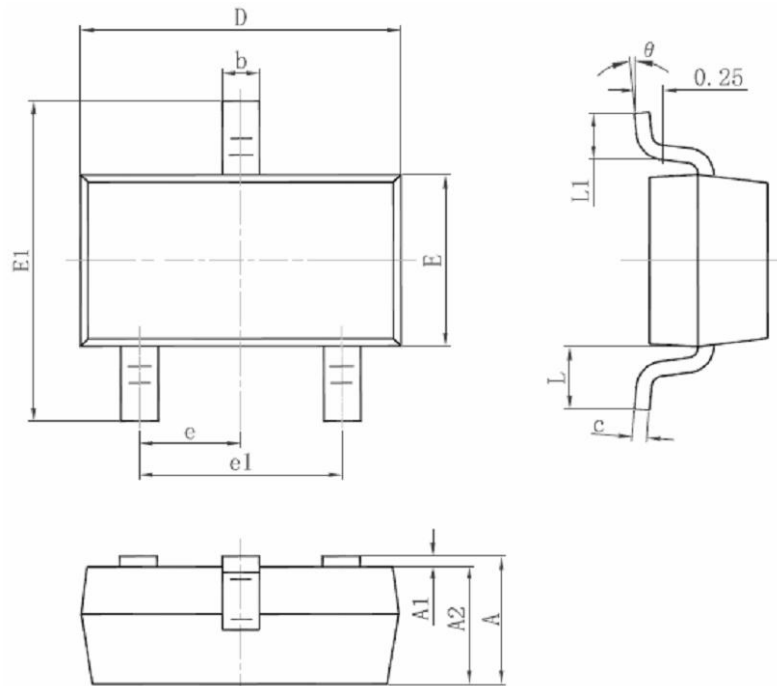


2302C (文件编号: S&CIC1844)

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°