KEEN SIDE electronics

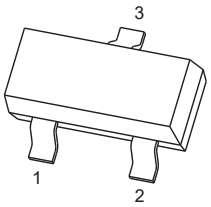
IRLML6346

SOT-23 Plastic-Encapsulate MOSFETS

N-Channel MOSFET

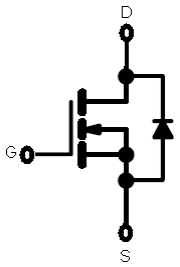
$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
30 V	63mΩ@10V	3.4A
	80mΩ@4.5V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

Equivalent Circuit



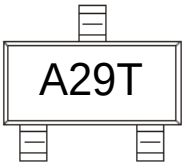
FEATURE

- TrenchFET Power MOSFET

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

MARKING



Maximum ratings (at T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current (T_J=150℃)[a,b]	I_D	3.4	A
Pulsed Drain Current	I_{DM}	15	
Continuous Source Current(Diode Conduction)[a,b]	I_S	0.62	
Maximum Power Dissipation[a,b]	P_D	1.3	W
Thermal Resistance from Junction to Ambient (t≤5s)	$R_{\theta JA}$	100	℃/W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to150	℃

Notes :

a. Surface Mounted on 1” ×1” FR4 board, t≤5s.

b. Pulse width limited by maximum junction temperature.

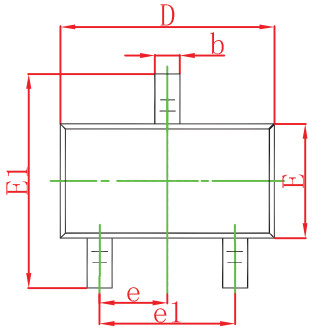
MOSFET ELECTRICAL CHARACTERISTICS

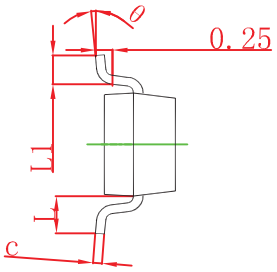
T_a=25℃ unless otherwise specified

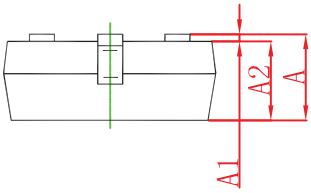
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DS}$	V_{GS} = 0V, I_D =250μA	30			V
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.9	1.3	
Gate-Body Leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =30V, V_{GS} =0V			1	μA
Drain-Source On-Resistance[a]	$R_{DS(on)}$	V_{GS} =10V, I_D =4A			63	mΩ
		V_{GS} =4.5V, I_D =2A			80	
Forward Transconductance[a]	g_{fs}	V_{DS} =4.5V, I_D =3.4A		7.0		S
Diode Forward Voltage	V_{SD}	I_S=1.25A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Gate Charge	Q_g	V_{DS} =15V,V_{GS} =5V,I_D =2.5A		3.0	4.5	nC
Total Gate Charge	Q_{gt}	V_{DS} =15V,V_{GS} =10V,I_D =2.5A		6	9	
Gate-Source Charge	Q_{gs}			1.6		
Gate-Drain Charge	Q_{gd}			0.6		
Gate Resistance	R_g	f =1.0MHz	2.5	5	7.5	Ω
Input Capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz		270		pF
Output Capacitance	C_{oss}			32		
Reverse Transfer Capacitance	C_{rss}			21		
Switching						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=15V, R_L=15Ω, I_D ≈1A, V_{GEN}=10V,Rg=6Ω		7	11	ns
Rise Time	t_r			12	18	
Turn-Off Delay Time	$t_{d(off)}$			14	25	
Fall Time	t_f			6	10	

Notes :

a.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

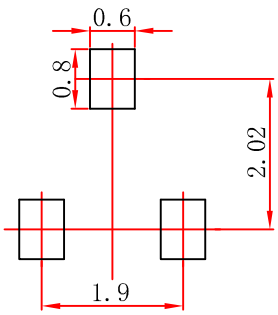






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.