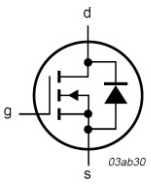
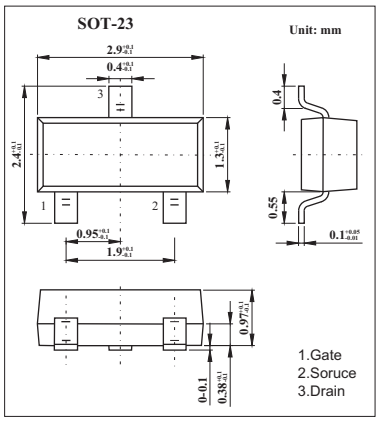
IRLML2502

■ Features

- Ultra Low On-Resistance
- N-Channel MOSFET
- Fast switching.





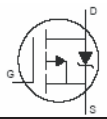
■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-to-source voltage	V_{GS}	±12	V
Continuous drain curent, @ V_{GS}=4.5V,T_A=25℃	I_D	4.2	A
Continuous drain curent, @ V_{GS}=4.5V,T_A=70℃		3.4	A
Pulsed drain current *1	I_{DM}	33	A
Power dissipation @ T_A=25℃	P_D	1.25	W
Thermal Resistance,Junction- to-Ambient	$R_{\theta JA}$	100	℃/W
Junction and storage temperature range	T_J,T_{STG}	-55 to +150	℃

*1.Reptitive rating:pulse width limited by max.junction temperature.

*2.I_{SD}≤ 0.93A,di/dt≤ 90A/μs,V_{DD} ≤$V_{(BR)DSS}$,T_J≤150℃

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test conditons	Min	Typ	Max	Unit
Drain-source Breakdown voltage	V_{DSS}	I_D= 250 μA, V_{GS} = 0V	20			V
Gate-source leakage current	I_{DSS}	V_{DS} = 16 V, V_{GS} = 0V			1	μA
		V_{DS} = 16 V, V_{GS} = 0V, T_J=125℃			25	
Gate-source leadage	I_{GSS}	V_{GS}=±12V,V_{DS}=0V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D= 250 μA	0.6		1.2	V
Static drain-source on- resistance	$R_{DS(on)}$	I_D= 4.2A, V_{GS} = 4.5V			47	mΩ
		I_D= 3.6A, V_{GS} =2.5V			83	
Forward Transconductance	g_{fs}	V_{DS} = 10 V, I_D = 4 A	5.8			S
Input capacitance	C_{iss}	V_{DS} = 15V,		745		pF
Output capacitance	C_{oss}	V_{GS} = 0 V,		93		
Reverse transfer capacitance	C_{rss}	f= 1MHz		67		
Total Gate Charge	Q_g	V_{DS} =10V ,V_{GS} = 5 V , I_D= 4 A		2.6	3.9	nC
Gate-Source Charge	Q_{gs}			0.41	0.62	
Gate-Drain Charge	Q_{gd}			1.1	1.7	
Turn-on delay time	$t_{d(on)}$	V_{DD}= 10 V, I_D= 1A,		7.5		ns
Rise time	t_r			10		
Turn-off delay time	$t_{d(off)}$	R_D= 10Ω ,R_G= 6Ω		54		
Fall time	t_f			26		
Reverse recovery time	t_{rr}	T_J=25℃, I_F =1.3 A, di / dt = 100 A/μs *2			24	ns
Reverse recovery charge	Q_{rr}				13	nC
Continuous source current	I_S	MOSFET symbo l showing the integral reverse p-n junction diode 			1.3	A
Pulsed source current *1	I_{SM}				33	
Diode forward voltage	V_{SD}	T_J=25℃,V_{GS} = 0 V, I_S = 1.3 A *2			1.2	V

*1 Repetitive rating;pulse width limited by max.junction temperature.

* 2 Pulse width ≤ 300μs, Duty cycle ≤ 2%