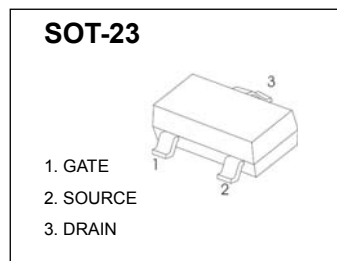


SOT-23 Plastic-Encapsulate MOSFETS

IRLML2502 N-Channel 20-V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	50mΩ@4.5V	3.0A
	70mΩ@2.5V	



FEATURE

- TrenchFET Power MOSFET

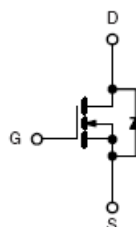
APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

MARKING



Equivalent Circuit



Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current	I_D	3.0	A
Continuous Source-Drain Current(Diode Conduction)	I_S	0.6	
Power Dissipation	P_D	0.4	W
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	$R_{\theta JA}$	312.5	$^{\circ}\text{C/W}$
Operating Junction	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	

MOSFET ELECTRICAL CHARACTERISTICS
T_a=25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =10μA		20		V
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =50μA	0.65	0.95	1.2	
Gate-body leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
Drain-source on-resistance ^a	r _{DS(on)}	V _{GS} =4.5V, I _D =3.0A		0.040	0.050	Ω
		V _{GS} =2.5V, I _D =1.5A		0.055	0.070	
Forward transconductance ^a	g _{fs}	V _{DS} =5V, I _D =3.6A		8		S
Diode forward voltage	V _{SD}	I _S =0.94A,V _{GS} =0V		0.76	1.2	V
Dynamic						
Total gate charge	Q _g	V _{DS} =10V,V _{GS} =4.5V,I _D =3.0A		4.0	10	nC
Gate-source charge	Q _{gs}			0.65		
Gate-drain charge	Q _{gd}			1.5		
Input capacitance ^b	C _{iss}	V _{DS} =10V,V _{GS} =0V,f=1MHz		300		pF
Output capacitance ^b	C _{oss}			120		
Reverse transfer capacitance ^b	C _{rss}			80		
Switching ^b						
Turn-on delay time	t _{d(on)}	V _{DD} =10V, R _L =5.5Ω, I _D ≈3.0A, V _{GEN} =4.5V,R _g =6Ω		7	15	ns
Rise time	t _r			55	80	
Turn-off delay time	t _{d(off)}			16	60	
Fall time	t _f			10	25	

Notes :

- a. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
- b. These parameters have no way to verify.