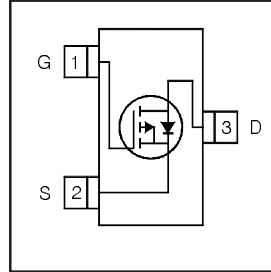


IRLML2246TRPbF

HEXFET® Power MOSFET

V_{DS}	-20	V
$V_{GS\ Max}$	±12	V
$R_{DS(on)\ max}$ (@ $V_{GS} = -4.5V$)	135	mΩ
$R_{DS(on)\ max}$ (@ $V_{GS} = -2.5V$)	236	mΩ



Application(s)

- System/Load Switch

Features and Benefits

Features

Industry-standard pinout
Compatible with existing Surface Mount Techniques
RoHS compliant containing no lead, no bromide and no halogen
MSL1, Consumer qualification

results in
⇒

Benefits

Multi-vendor compatibility
Easier manufacturing
Environmentally friendly
Increased reliability

Absolute Maximum Ratings

Symbol	Parameter	Max.	Units
V_{DS}	Drain-Source Voltage	-20	V
$I_D @ T_A = 25^\circ C$	Continuous Drain Current, $V_{GS} @ -10V$	-2.6	A
$I_D @ T_A = 70^\circ C$	Continuous Drain Current, $V_{GS} @ -10V$	-2.1	
I_{DM}	Pulsed Drain Current	-11	
$P_D @ T_A = 25^\circ C$	Maximum Power Dissipation	1.3	W
$P_D @ T_A = 70^\circ C$	Maximum Power Dissipation	0.80	
	Linear Derating Factor	0.01	W/°C
V_{GS}	Gate-to-Source Voltage	± 12	V
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to + 150	°C

Thermal Resistance

Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-Ambient ③	—	100	°C/W
$R_{\theta JA}$	Junction-to-Ambient (t<10s) ④	—	99	

IRLML2246TRPbF

Electric Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	-20	—	—	V	$V_{GS} = 0V, I_D = -250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	9.5	—	mV/°C	Reference to $25^\circ\text{C}, I_D = -1\text{mA}$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	90	135	mΩ	$V_{GS} = -4.5V, I_D = -2.6A$ ②
		—	157	236		$V_{GS} = -2.5V, I_D = -2.1A$ ②
$V_{GS(th)}$	Gate Threshold Voltage	-0.4	—	-1.1	V	$V_{DS} = V_{GS}, I_D = -10\mu A$
I_{DSS}	Drain-to-Source Leakage Current	—	—	-1.0	μA	$V_{DS} = -16V, V_{GS} = 0V$
		—	—	-150		$V_{DS} = -16V, V_{GS} = 0V, T_J = 125^\circ\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	100	nA	$V_{GS} = 12V$
	Gate-to-Source Reverse Leakage	—	—	-100		$V_{GS} = -12V$
R_G	Internal Gate Resistance	—	16	—	Ω	
g_{fs}	Forward Transconductance	3.4	—	—	S	$V_{DS} = -10V, I_D = -2.6A$
Q_g	Total Gate Charge	—	2.9	—	nC	$I_D = -2.6A$
Q_{gs}	Gate-to-Source Charge	—	0.52	—		$V_{DS} = -10V$
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	1.2	—		$V_{GS} = -4.5V$ ②
$t_{d(on)}$	Turn-On Delay Time	—	5.3	—	ns	$V_{DD} = -10V$ ②
t_r	Rise Time	—	7.7	—		$I_D = -1.0A$
$t_{d(off)}$	Turn-Off Delay Time	—	26	—		$R_G = 6.8\Omega$
t_f	Fall Time	—	16	—		$V_{GS} = -4.5V$
C_{iss}	Input Capacitance	—	220	—	pF	$V_{GS} = 0V$
C_{oss}	Output Capacitance	—	70	—		$V_{DS} = -16V$
C_{rss}	Reverse Transfer Capacitance	—	48	—		$f = 1.0\text{KHz}$

Source - Drain Ratings and Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	-1.3	A	MOSFET symbol showing the integral reverse p-n junction diode.
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	-11		
V_{SD}	Diode Forward Voltage	—	—	-1.2	V	$T_J = 25^\circ\text{C}, I_S = -2.6A, V_{GS} = 0V$ ②
t_{rr}	Reverse Recovery Time	—	17	26	ns	$T_J = 25^\circ\text{C}, V_R = -15V, I_F = -2.6A$
Q_{rr}	Reverse Recovery Charge	—	6.2	9.3	nC	$di/dt = 100A/\mu s$ ②

