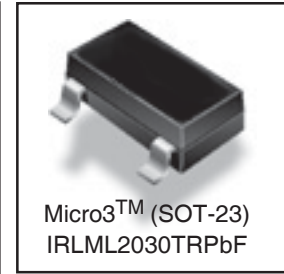
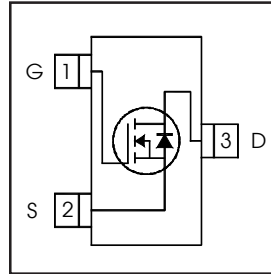


# IRLML2030TRPbF

HEXFET® Power MOSFET

$V_{DS}$	<b>30</b>	<b>V</b>
$V_{GS\ Max}$	<b>± 20</b>	<b>V</b>
$R_{DS(on)\ max}$ (@ $V_{GS} = 10V$ )	<b>100</b>	<b>mΩ</b>
$R_{DS(on)\ max}$ (@ $V_{GS} = 4.5V$ )	<b>154</b>	<b>mΩ</b>



## Application(s)

- Load/ System 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

results in  
⇒

### Benefits

Multi-vendor compatibility
Easier manufacturing
Environmentally friendly
Increased reliability

## Absolute Maximum Ratings

Symbol	Parameter	Max.	Units
$V_{DS}$	Drain-Source Voltage	30	V
$I_D @ T_A = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	2.7	A
$I_D @ T_A = 70^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	2.2	
$I_{DM}$	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	0.8	
	Linear Derating Factor	0.01	
$V_{GS}$	Gate-to-Source Voltage	± 20	V
$T_J, T_{STG}$	Junction and Storage Temperature Range	-55 to + 150	°C

## Thermal Resistance

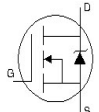
Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-Ambient <sup>③</sup>	—	100	°C/W
$R_{\theta JA}$	Junction-to-Ambient (t<10s) <sup>④</sup>	—	99	

# IRLML2030TRPbF

## 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	30	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.03	—	V/°C	Reference to $25^\circ\text{C}, I_D = 1mA$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	123	154	mΩ	$V_{GS} = 4.5V, I_D = 2.2A$ ②
		—	80	100		$V_{GS} = 10V, I_D = 2.7A$ ②
$V_{GS(th)}$	Gate Threshold Voltage	1.3	1.7	2.3	V	$V_{DS} = V_{GS}, I_D = 25\mu A$
$I_{DSS}$	Drain-to-Source Leakage Current	—	—	1	μA	$V_{DS} = 24V, V_{GS} = 0V$
		—	—	150		$V_{DS} = 24V, V_{GS} = 0V, T_J = 125^\circ\text{C}$
$I_{GSS}$	Gate-to-Source Forward Leakage	—	—	100	nA	$V_{GS} = 20V$
	Gate-to-Source Reverse Leakage	—	—	-100		$V_{GS} = -20V$
$R_G$	Internal Gate Resistance	—	7.6	—	Ω	
$g_{fs}$	Forward Transconductance	2.6	—	—	S	$V_{DS} = 10V, I_D = 2.7A$
$Q_g$	Total Gate Charge	—	1.0	—	nC	$I_D = 2.7A$
$Q_{gs}$	Gate-to-Source Charge	—	0.34	—		$V_{DS} = 15V$
$Q_{gd}$	Gate-to-Drain ("Miller") Charge	—	0.34	—		$V_{GS} = 4.5V$ ②
$t_{d(on)}$	Turn-On Delay Time	—	4.1	—	ns	$V_{DD} = 15V$ ②
$t_r$	Rise Time	—	3.3	—		$I_D = 1.0A$
$t_{d(off)}$	Turn-Off Delay Time	—	4.5	—		$R_G = 6.8\Omega$
$t_f$	Fall Time	—	2.9	—		$V_{GS} = 4.5V$
$C_{iss}$	Input Capacitance	—	110	—	pF	$V_{GS} = 0V$
$C_{oss}$	Output Capacitance	—	29	—		$V_{DS} = 15V$
$C_{rss}$	Reverse Transfer Capacitance	—	12	—		$f = 1.0MHz$

## Source - Drain Ratings and Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$I_S$	Continuous Source Current (Body Diode)	—	—	1.6	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	—	—	1.0	V	$T_J = 25^\circ\text{C}, I_S = 2.7A, V_{GS} = 0V$ ②
$t_{rr}$	Reverse Recovery Time	—	9.0	14	ns	$T_J = 25^\circ\text{C}, V_R = 15V, I_F = 2.7A$
$Q_{rr}$	Reverse Recovery Charge	—	0.3	0.4	nC	$di/dt = 100A/\mu s$ ②