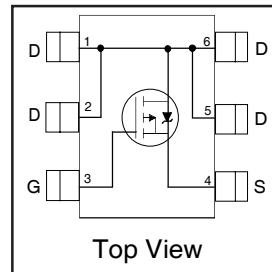


IRLMS6802PbF

HEXFET® Power MOSFET

- Ultra Low On-Resistance
- P-Channel MOSFET
- Surface Mount
- Available in Tape & Reel
- Lead-Free

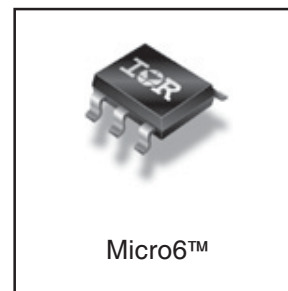


$V_{DSS} = -20V$
$R_{DS(on)} = 0.050\Omega$

Description

These P-Channel MOSFETs from International Rectifier utilize advanced processing techniques to achieve extremely low on-resistance per silicon area. This benefit provides the designer with an extremely efficient device for use in battery and load management applications.

The Micro6™ package with its customized leadframe produces a HEXFET® power MOSFET with $R_{DS(on)}$ 60% less than a similar size SOT-23. This package is ideal for applications where printed circuit board space is at a premium. The unique thermal design and $R_{DS(on)}$ reduction enables a current-handling increase of nearly 300% compared to the SOT-23.



Absolute Maximum Ratings

	Parameter	Max.	Units
V_{DS}	Drain- Source Voltage	-20	V
$I_D @ T_A = 25^\circ C$	Continuous Drain Current, $V_{GS} @ -4.5V$	-5.6	A
$I_D @ T_A = 70^\circ C$	Continuous Drain Current, $V_{GS} @ -4.5V$	-4.5	
I_{DM}	Pulsed Drain Current ①	-45	
$P_D @ T_A = 25^\circ C$	Power Dissipation	2.0	W
$P_D @ T_A = 70^\circ C$	Power Dissipation	1.3	
	Linear Derating Factor	0.016	W/°C
E_{AS}	Single Pulse Avalanche Energy②	31	mJ
V_{GS}	Gate-to-Source Voltage	± 12	V
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to + 150	°C

Thermal Resistance

	Parameter	Max.	Units
$R_{\theta JA}$	Maximum Junction-to-Ambient③	62.5	°C/W

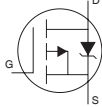
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International
IR Rectifier

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

	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	—	-0.005	—	V/ $^\circ\text{C}$	Reference to 25°C , $I_D = -1\text{mA}$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	—	0.050	Ω	$V_{GS} = -4.5V, I_D = -5.1A$ ②
		—	—	0.100		$V_{GS} = -2.5V, I_D = -3.4A$ ②
$V_{GS(th)}$	Gate Threshold Voltage	-0.60	—	-1.2	V	$V_{DS} = V_{GS}, I_D = -250\mu A$
g_{fs}	Forward Transconductance	1.5	—	—	S	$V_{DS} = -10V, I_D = -0.80A$
I_{DSS}	Drain-to-Source Leakage Current	—	—	-1.0	μA	$V_{DS} = -16V, V_{GS} = 0V$
		—	—	-25		$V_{DS} = -16V, V_{GS} = 0V, T_J = 125^\circ\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	$V_{GS} = -12V$
	Gate-to-Source Reverse Leakage	—	—	100		$V_{GS} = 12V$
Q_g	Total Gate Charge	—	11	16	nC	$I_D = -4.5A$
Q_{gs}	Gate-to-Source Charge	—	2.2	3.3		$V_{DS} = -10V$
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	2.9	4.3		$V_{GS} = -5.0V$ ②
$t_{d(on)}$	Turn-On Delay Time	—	12	—	ns	$V_{DD} = -10V$
t_r	Rise Time	—	33	—		$I_D = -1.0A$
$t_{d(off)}$	Turn-Off Delay Time	—	70	—		$R_G = 6.0\Omega$
t_f	Fall Time	—	72	—		$R_D = 10\Omega$ ②
C_{iss}	Input Capacitance	—	1079	—	pF	$V_{GS} = 0V$
C_{oss}	Output Capacitance	—	220	—		$V_{DS} = -10V$
C_{rss}	Reverse Transfer Capacitance	—	152	—		$f = 1.0\text{MHz}$

Source-Drain Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	-2.0	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	-45		
V_{SD}	Diode Forward Voltage	—	—	-1.2	V	$T_J = 25^\circ\text{C}, I_S = -1.6A, V_{GS} = 0V$ ③
t_{rr}	Reverse Recovery Time	—	74	110	ns	$T_J = 25^\circ\text{C}, I_F = -3.0A$
Q_{rr}	Reverse Recovery Charge	—	45	67	nC	$di/dt = -100A/\mu s$ ②

Notes:

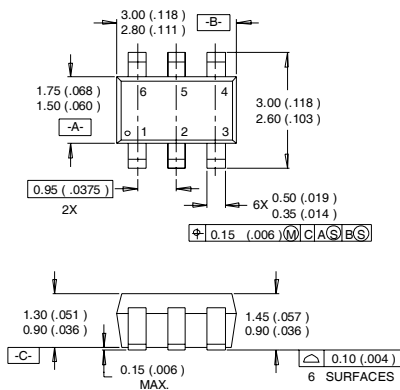
- ① Repetitive rating; pulse width limited by max. junction temperature. (See fig. 11)
- ② Pulse width $\leq 400\mu s$; duty cycle $\leq 2\%$.
- ③ Surface mounted on FR-4 board, $t \leq 5\text{sec}$.
- ④ Starting $T_J = 25^\circ\text{C}$, $L = 6.8\text{mH}$
 $R_G = 25\Omega, I_{AS} = -3.0A$. (See Figure 12)

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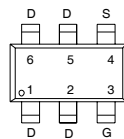


Micro6 (SOT23 6L) Package Outline

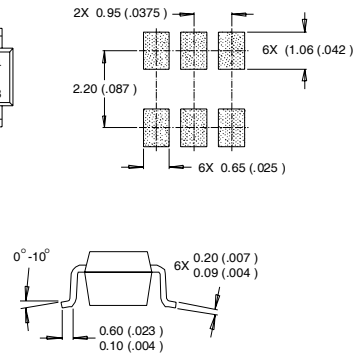
Dimensions are shown in millimeters (inches)



LEAD ASSIGNMENTS

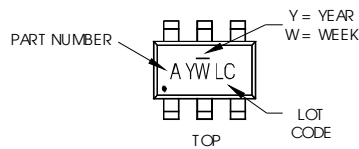


RECOMMENDED FOOTPRINT



- NOTES:
1. DIMENSIONING & TOLERANCING PER ANSI Y14.5M-1982.
 2. CONTROLLING DIMENSION: MILLIMETER.
 3. DIMENSIONS ARE SHOWN IN MILLIMETERS (INCHES).

Micro6 (SOT23 6L) Part Marking Information



PART NUMBER CODE REFERENCE:

- A = IRLMS1902
- B = IRLMS1503
- C = IRLMS6702
- D = IRLMS5703
- E = IRLMS6802
- F = IRLMS4502
- G = IRLMS2002
- H = IRLMS6803

Note: A line above the work week (as shown here) indicates Lead-Free.

W = (1-26) IF PRECEDED BY LAST DIGIT OF CALENDAR YEAR

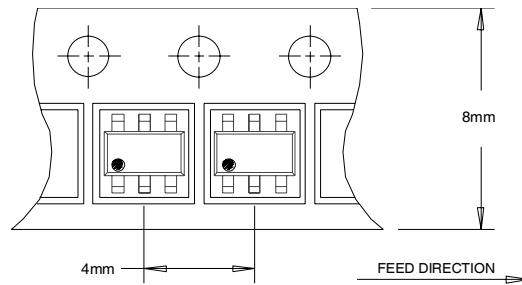
YEAR	Y	WORK WEEK	W
2001	1	01	A
2002	2	02	B
2003	3	03	C
2004	4	04	D
2005	5		
2006	6		
2007	7		
2008	8		
2009	9		
2010	0	24	X
		25	Y
		26	Z

W = (27-52) IF PRECEDED BY A LETTER

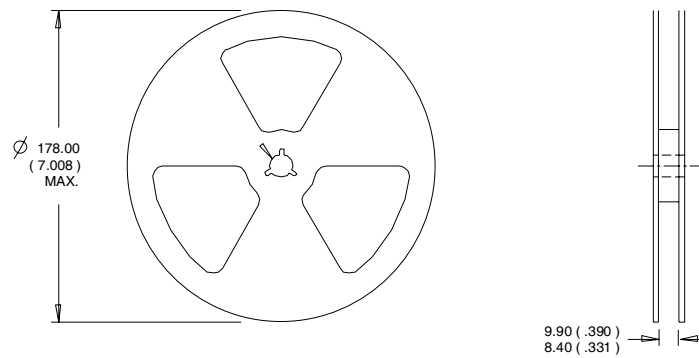
YEAR	Y	WORK WEEK	W
2001	A	27	A
2002	B	28	B
2003	C	29	C
2004	D	30	D
2005	E		
2006	F		
2007	G		
2008	H		
2009	J		
2010	K	50	X
		51	Y
		52	Z

Micro6 Tape & Reel Information

Dimensions are shown in millimeters (inches)



NOTES:
 1. OUTLINE CONFORMS TO EIA-481 & EIA-541.



NOTES:
 1. CONTROLLING DIMENSION : MILLIMETER.
 2. OUTLINE CONFORMS TO EIA-481 & EIA-541.

This product has been designed and qualified for the consumer market.
 Data and specifications subject to change without notice.