阅读申明

1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描叙上的差异，建议读者做出适当判断。
4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.

2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader’ s learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.

3. All product information provided on the website refer to solutions from manufacturers’ technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.

4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with “Datasheets”.

Downloaded from www.iczoom.com

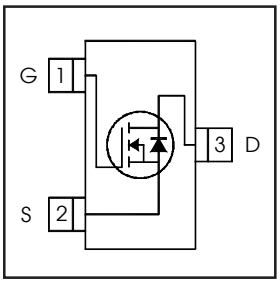
International
IOR Rectifier

PD - 97529A

IRLML6246TRPbF

HEXFET® Power MOSFET

V_{DS}	20	V
$V_{GS\ Max}$	± 12	V
$R_{DS(on)\ max}$ (@V_{GS} = 4.5V)	46	mΩ
$R_{DS(on)\ max}$ (@V_{GS} = 2.5V)	66	mΩ



Micro3™ (SOT-23)
IRLML6246TRPbF

Application(s)

- Load/ System Switch

Features and Benefits

Features		Benefits
Industry-standard SOT-23 Package		Multi-vendor compatibility
RoHS compliant containing no lead, no bromide and no halogen	results in	Environmentally friendly

Absolute Maximum Ratings

Symbol	Parameter	Max.	Units
V_{DS}	Drain-Source Voltage	20	V
I_D @ T_A = 25°C	Continuous Drain Current, V_{GS} @ 10V	4.1	A
I_D @ T_A = 70°C	Continuous Drain Current, V_{GS} @ 10V	3.3	
I_{DM}	Pulsed Drain Current	16	
P_D @T_A = 25°C	Maximum Power Dissipation	1.3	W
P_D @T_A = 70°C	Maximum Power Dissipation	0.8	
	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	

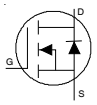
ORDERING INFORMATION:
See detailed ordering and shipping information on the last page of this data sheet.

Notes ① through ④ are on page 10

Electric Characteristics @ T_J = 25°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 = 250µA
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.03	—	V/°C	Reference to 25°C, I_D = 1mA
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	30	46	mΩ	V_{GS} = 4.5V, I_D = 4.1A ②
		—	45	66		V_{GS} = 2.5V, I_D = 3.3A ②
$V_{GS(th)}$	Gate Threshold Voltage	0.5	0.8	1.1	V	V_{DS} = V_{GS}, I_D = 5µA
I_{DSS}	Drain-to-Source Leakage Current	—	—	1.0	µA	V_{DS} =16V, V_{GS} = 0V
		—	—	10		V_{DS} = 16V, V_{GS} = 0V, T_J = 55°C
		—	—	150		V_{DS} = 16V, V_{GS} = 0V, T_J = 125°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	—	4.0	—	Ω	
gfs	Forward Transconductance	10	—	—	S	V_{DS} = 10V, I_D = 4.1A
Q_g	Total Gate Charge	—	3.5	—	nC	I_D = 4.1A
Q_{gs}	Gate-to-Source Charge	—	0.26	—		V_{DS} =10V
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	1.7	—		V_{GS} = 4.5V ②
$t_{d(on)}$	Turn-On Delay Time	—	3.6	—	ns	V_{DD} =10V ②
t_r	Rise Time	—	4.9	—		I_D = 1.0A
$t_{d(off)}$	Turn-Off Delay Time	—	11	—		R_G = 6.8Ω
t_f	Fall Time	—	6.0	—		V_{GS} = 4.5V
C_{iss}	Input Capacitance	—	290	—	pF	V_{GS} = 0V
C_{oss}	Output Capacitance	—	64	—		V_{DS} = 16V
C_{rss}	Reverse Transfer Capacitance	—	41	—		f = 1.0MHz

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	—	—	16		
V_{SD}	Diode Forward Voltage	—	—	1.2	V	T_J = 25°C, I_S = 4.1A, V_{GS} = 0V ②
t_{rr}	Reverse Recovery Time	—	8.6	13	ns	T_J = 25°C, V_R = 15V, I_F=1.3A
Q_{rr}	Reverse Recovery Charge	—	2.8	4.2	nC	di/dt = 100A/µs ②

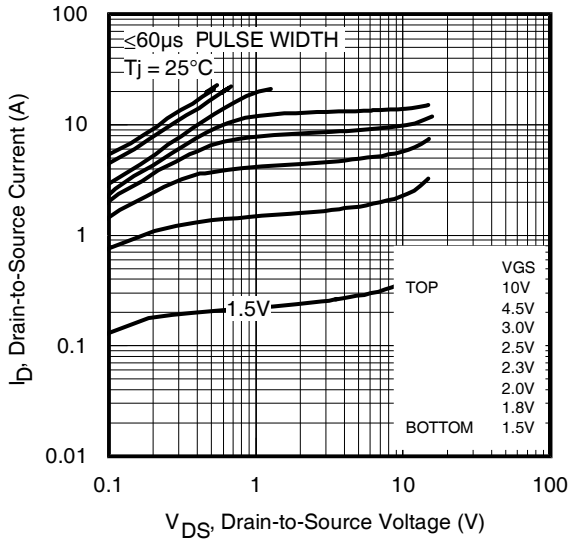


Fig 1. Typical Output Characteristics

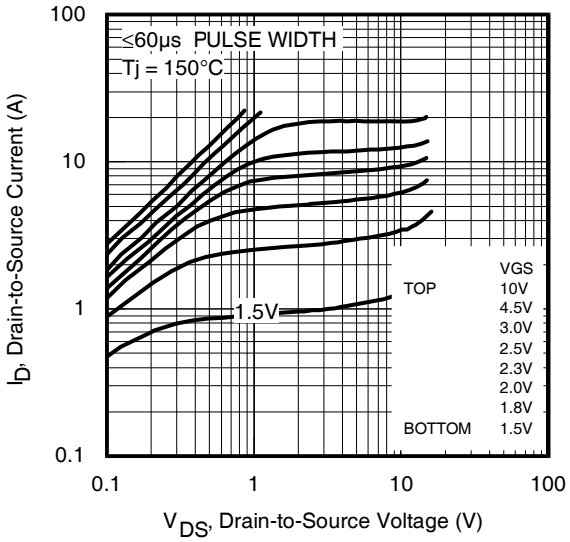


Fig 2. Typical Output Characteristics

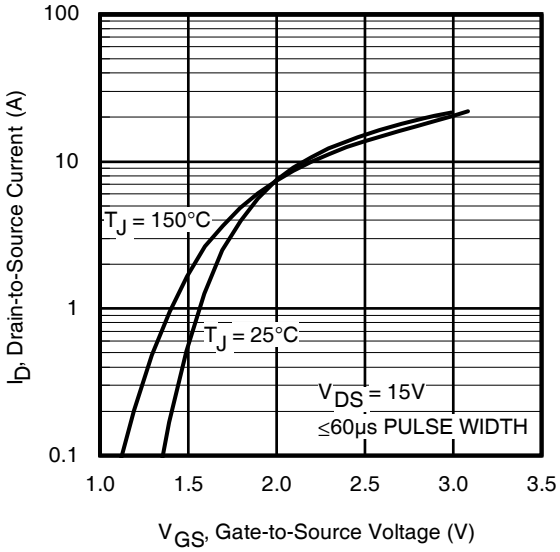


Fig 3. Typical Transfer Characteristics

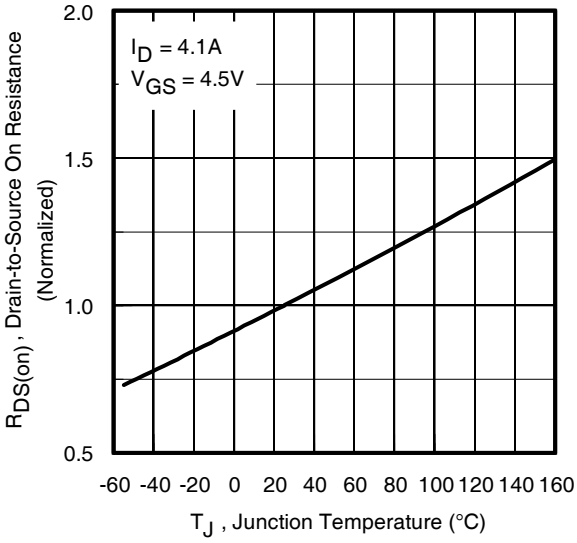


Fig 4. Normalized On-Resistance Vs. Temperature

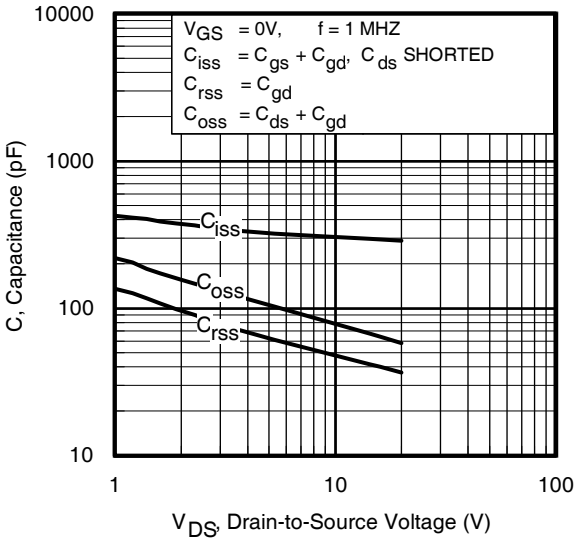


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

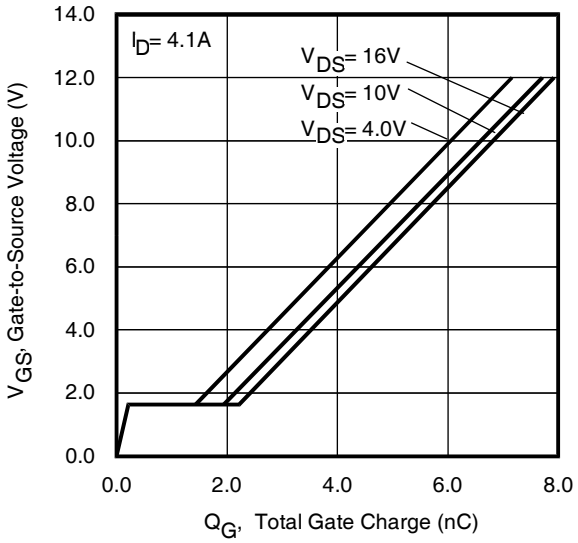


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

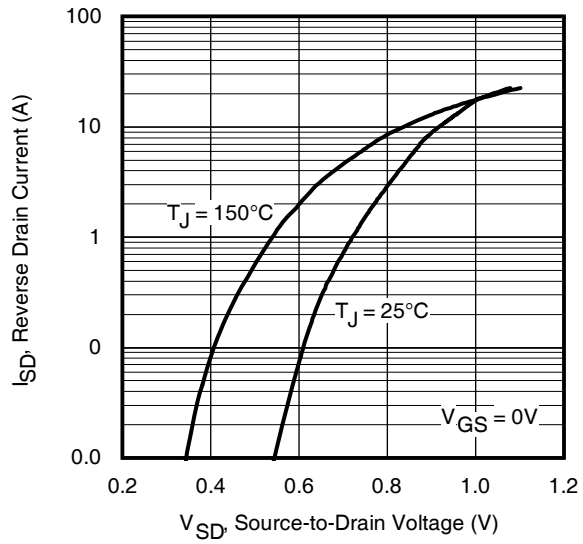


Fig 7. Typical Source-Drain Diode Forward Voltage

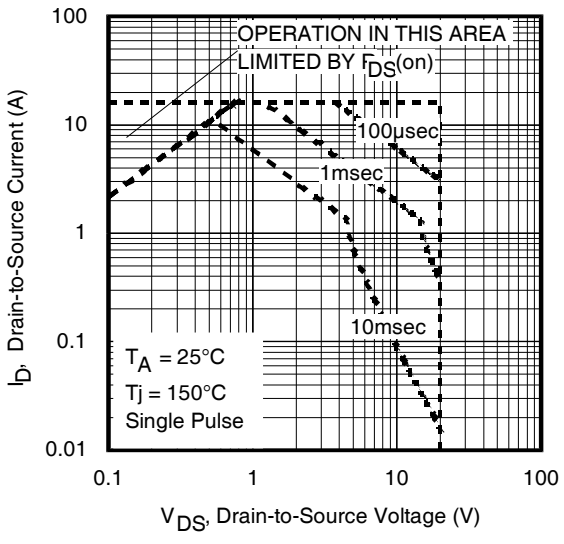


Fig 8. Maximum Safe Operating Area

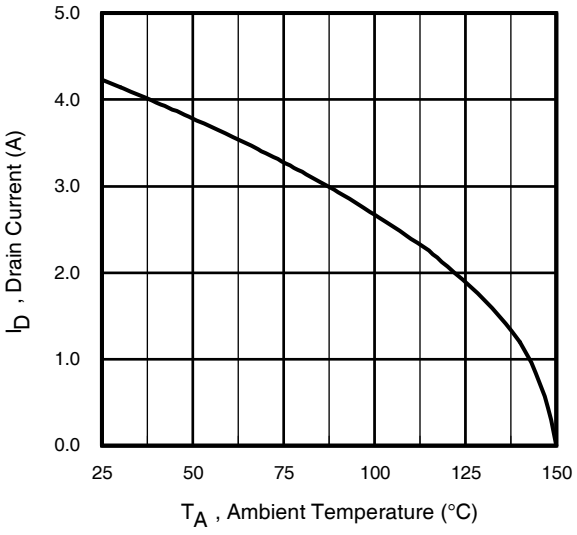


Fig 9. Maximum Drain Current Vs. Ambient Temperature

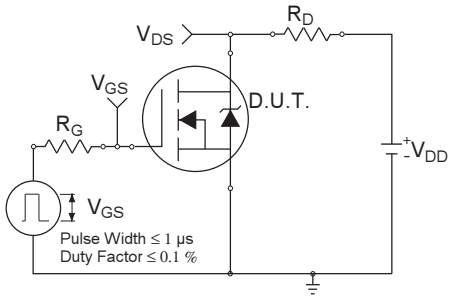


Fig 10a. Switching Time Test Circuit

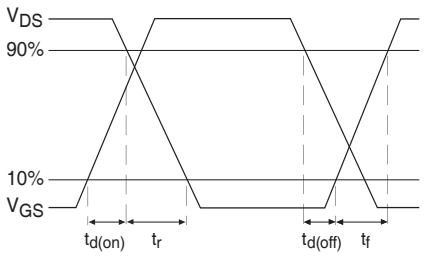


Fig 10b. Switching Time Waveforms

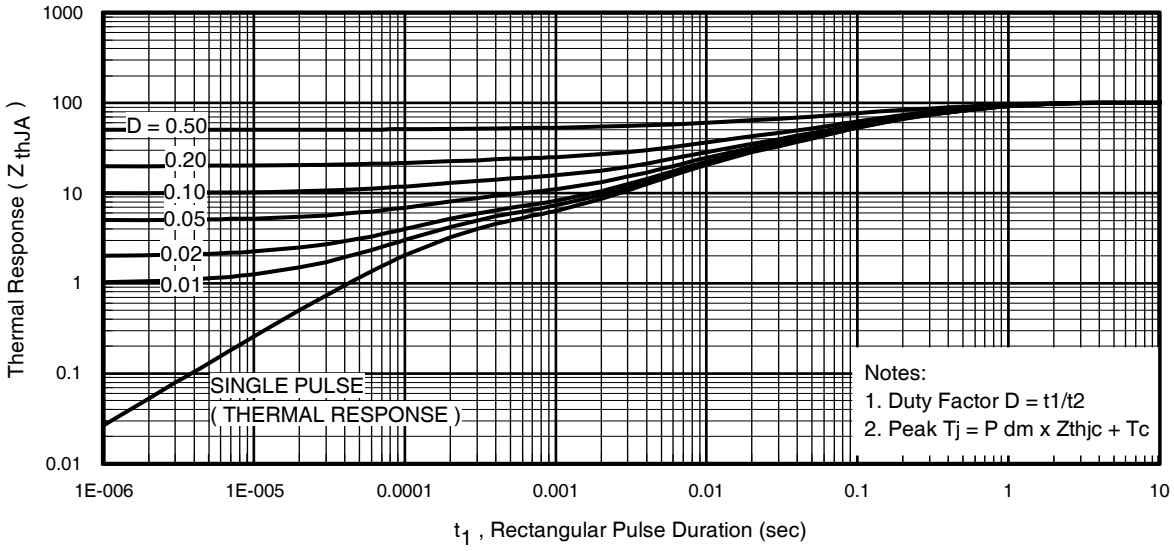


Fig 11. Typical Effective Transient Thermal Impedance, Junction-to-Ambient

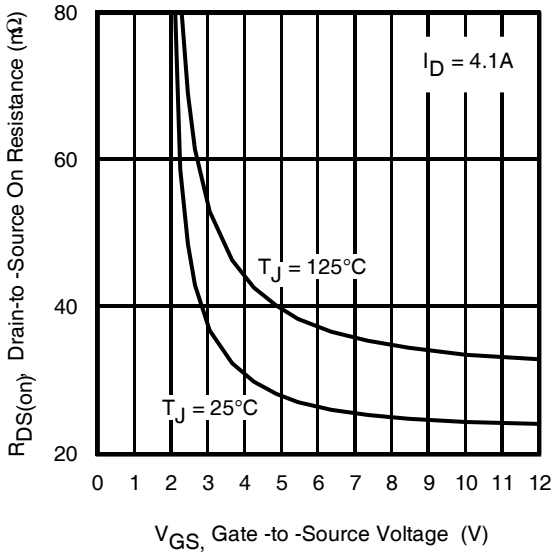


Fig 12. Typical On-Resistance Vs. Gate Voltage

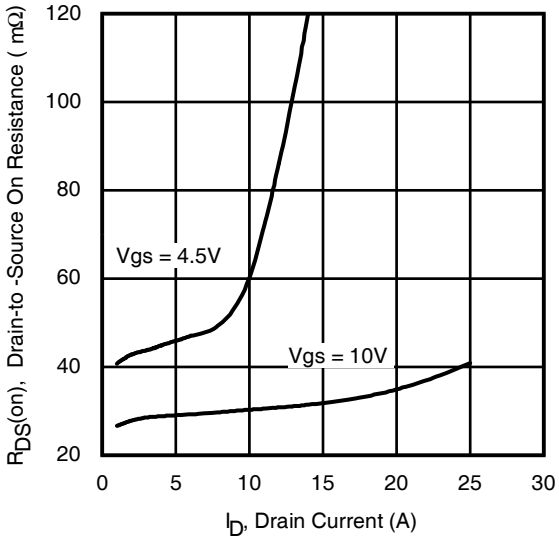


Fig 13. Typical On-Resistance Vs. Drain Current

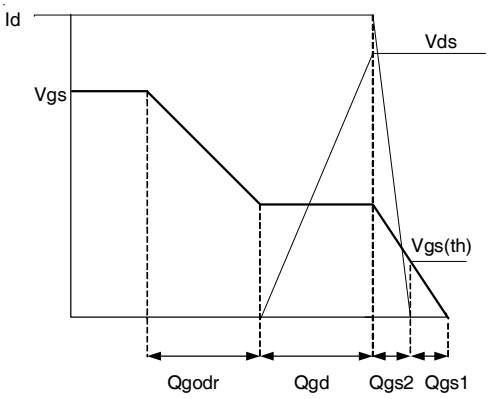


Fig 14a. Basic Gate Charge Waveform

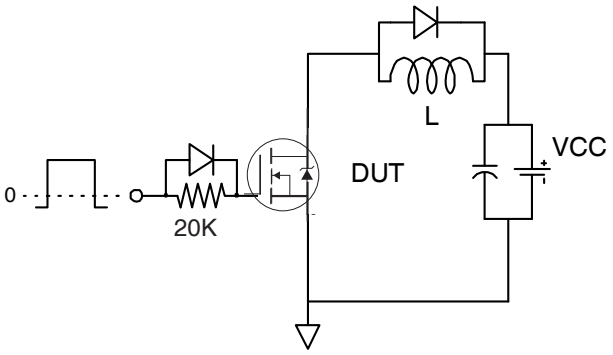


Fig 14b. Gate Charge Test Circuit

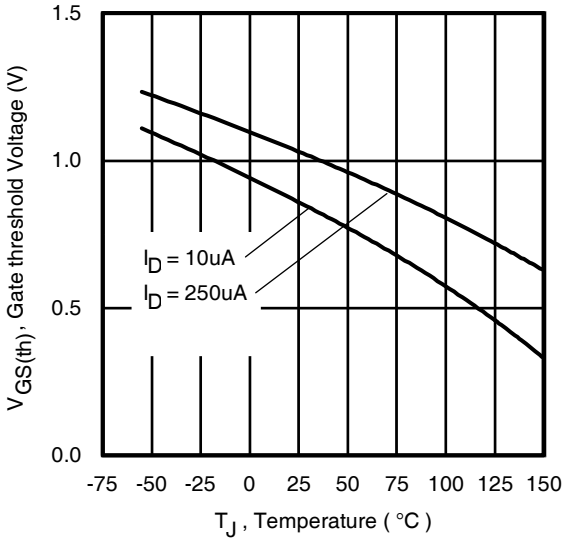


Fig 15. Typical Threshold Voltage Vs. Junction Temperature

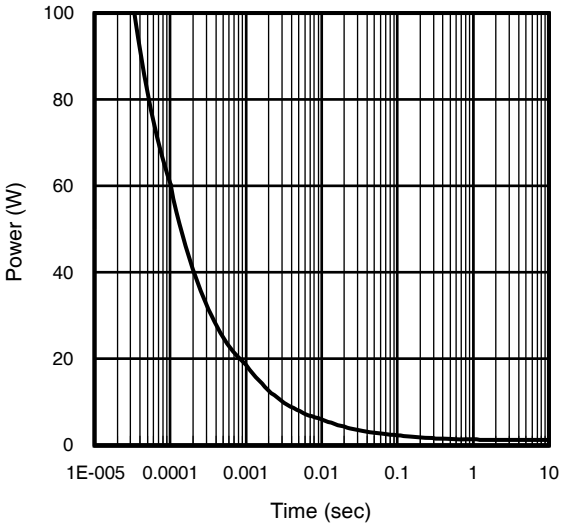
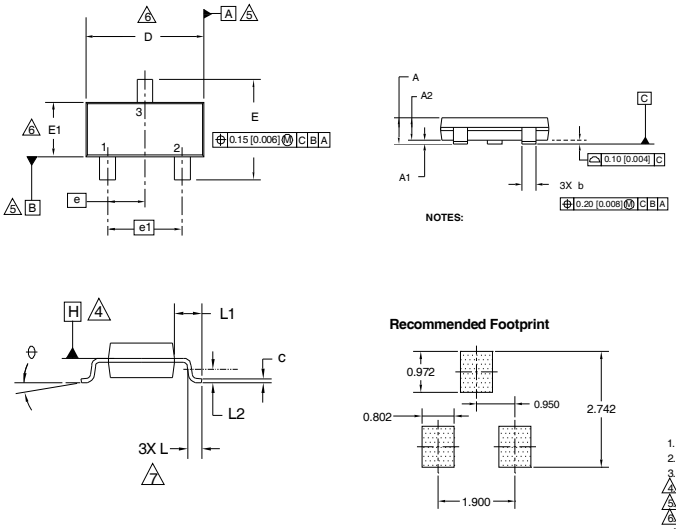


Fig 16. Typical Power Vs. Time

Micro3™(SOT-23) Package Outline

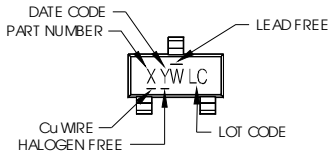
Dimensions are shown in millimeters (inches)



DIMENSIONS				
SYMBOL	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.89	1.12	0.035	0.044
A1	0.01	0.10	0.0004	0.004
A2	0.88	1.02	0.035	0.040
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95	BSC	0.037	BSC
e1	1.90	BSC	0.075	BSC
L	0.40	0.60	0.016	0.024
L1	0.54	REF	0.021	REF
L2	0.25	BSC	0.010	BSC
θ	0	8	0	8

1. DIMENSIONING & TOLERANCING PER ANSI Y14.5M-1994
2. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
3. CONTROLLING DIMENSION: MILLIMETER.
4. DATUM PLANE H IS LOCATED AT THE MOLD PARTING LINE.
5. DATUM A AND B TO BE DETERMINED AT DATUM PLANE H.
6. DIMENSIONS D AND E1 ARE MEASURED AT DATUM PLANE H. DIMENSIONS DOES NOT INCLUDE MOLD PROTRUSIONS OR INTERLEAD FLASH. MOLD PROTRUSIONS OR INTERLEAD FLASH SHALL NOT EXCEED 0.25 MM [0.010 INCH] PER SIDE.
7. DIMENSION L IS THE LEAD LENGTH FOR SOLDERING TO A SUBSTRATE.
8. OUTLINE CONFORMS TO JEDEC OUTLINE TO-236 AB.

Micro3™(SOT-23) Part Marking Information



X = PART NUMBER CODE REFERENCE:

A = IRLML2402
B = IRLML2803
C = IRLML6302
D = IRLML5103
E = IRLML6402
F = IRLML6401
G = IRLML2502
H = IRLML5203
I = IRLML0030
J = IRLML2030
K = IRLML0100
L = IRLML0060
M = IRLML0040
N = IRLML2060
P = IRLML9301
R = IRLML9303
S = IRLML6244
T = IRLML6246
U = IRLML6344
V = IRLML6346

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

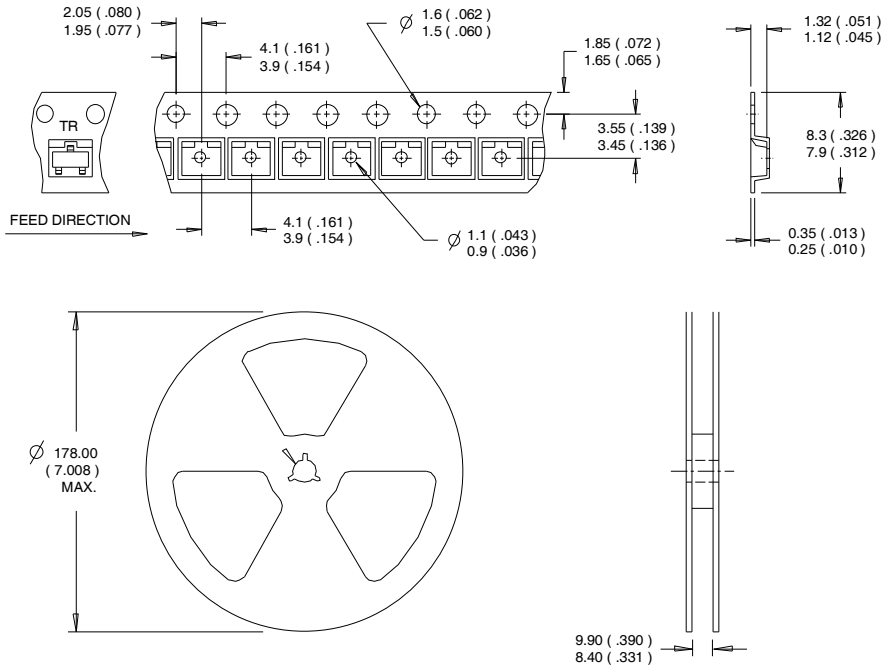
W = (27-52) IF PRECEDED BY A LETTER

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

Note: For the most current drawing please refer to IR website at: http://www.irf.com/package/

Micro3™(SOT-23) Tape & Reel Information

Dimensions are shown in millimeters (inches)



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

Note: For the most current drawing please refer to IR website at: http://www.irf.com/package/

Orderable part number	Package Type	Standard Pack		Note
		Form	Quantity	
IRLML6246TRPbF	Micro3™(SOT-23)	Tape and Reel	3000	

Qualification information†

Qualification level	Consumer†† (per JEDEC JESD47F††† guidelines)	
Moisture Sensitivity Level	Micro3™(SOT-23)	MSL1 (per IPC/JEDEC J-STD-020D†††)
RoHS compliant	Yes	

† Qualification standards can be found at International Rectifier's web site http://www.irf.com/product-info/reliability

†† Higher qualification ratings may be available should the user have such requirements. Please contact your International Rectifier sales representative for further information: http://www.irf.com/whoto-call/salesrep/

††† Applicable version of JEDEC standard at the time of product release.

Notes:

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

② Pulse width ≤ 400µs; duty cycle ≤ 2%.

③ Surface mounted on 1 in square Cu board

④ Refer to application note #AN-994.

Revision History

Date	Comments
10/12/2012	Added IDSS @ 16V, T_J = 55C-pg2

Data and specifications subject to change without notice.

International
IOR Rectifier

IR WORLD HEADQUARTERS: 101N. Sepulveda blvd, El Segundo, California 90245, USA Tel: (310) 252-7105
TAC Fax: (310) 252-7903
Visit us at www.irf.com for sales contact information.10/2012