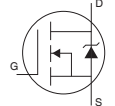


Electrical Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{\text{BR(DSS)}}$	Drain-to-Source Breakdown Voltage	20	—	—	V	$V_{\text{GS}} = 0\text{V}$, $I_D = 250\mu\text{A}$
$\Delta V_{\text{BR(DSS)}}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.01	—	V/ $^\circ\text{C}$	Reference to 25°C , $I_D = 1.0\text{mA}$
$R_{\text{DS(on)}}$	Static Drain-to-Source On-Resistance	—	0.035	0.045	Ω	$V_{\text{GS}} = 4.5\text{V}$, $I_D = 4.2\text{A}$ ②
		—	0.050	0.080		$V_{\text{GS}} = 2.5\text{V}$, $I_D = 3.6\text{A}$ ②
$V_{\text{GS(th)}}$	Gate Threshold Voltage	0.60	—	1.2	V	$V_{\text{DS}} = V_{\text{GS}}$, $I_D = 250\mu\text{A}$
$\Delta V_{\text{GS(th)}}$	Gate Threshold Voltage Coefficient	—	-3.2	—	mV/ $^\circ\text{C}$	
g_{fs}	Forward Transconductance	5.8	—	—	S	$V_{\text{DS}} = 10\text{V}$, $I_D = 4.0\text{A}$
I_{DSS}	Drain-to-Source Leakage Current	—	—	1.0	μA	$V_{\text{DS}} = 16\text{V}$, $V_{\text{GS}} = 0\text{V}$
		—	—	25		$V_{\text{DS}} = 16\text{V}$, $V_{\text{GS}} = 0\text{V}$, $T_J = 70^\circ\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	100	nA	$V_{\text{GS}} = 12\text{V}$
	Gate-to-Source Reverse Leakage	—	—	-100		$V_{\text{GS}} = -12\text{V}$
Q_g	Total Gate Charge	—	8.0	12	nC	$I_D = 4.0\text{A}$
Q_{gs}	Gate-to-Source Charge	—	1.8	2.7		$V_{\text{DS}} = 10\text{V}$
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	1.7	2.6		$V_{\text{GS}} = 5.0\text{V}$ ②
$t_{\text{d(on)}}$	Turn-On Delay Time	—	7.5	—	ns	$V_{\text{DD}} = 10\text{V}$
t_r	Rise Time	—	10	—		$I_D = 1.0\text{A}$
$t_{\text{d(off)}}$	Turn-Off Delay Time	—	54	—		$R_G = 6\Omega$
t_f	Fall Time	—	26	—		$R_D = 10\Omega$ ②
C_{iss}	Input Capacitance	—	740	—	pF	$V_{\text{GS}} = 0\text{V}$
C_{oss}	Output Capacitance	—	90	—		$V_{\text{DS}} = 15\text{V}$
C_{rss}	Reverse Transfer Capacitance	—	66	—		$f = 1.0\text{MHz}$

Source-Drain Rating and Characteristics

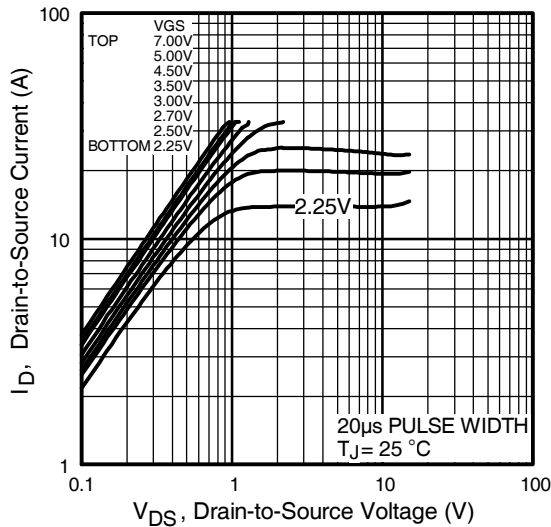
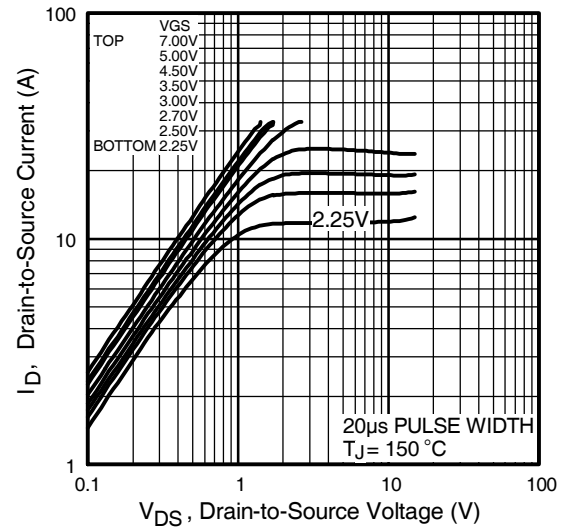
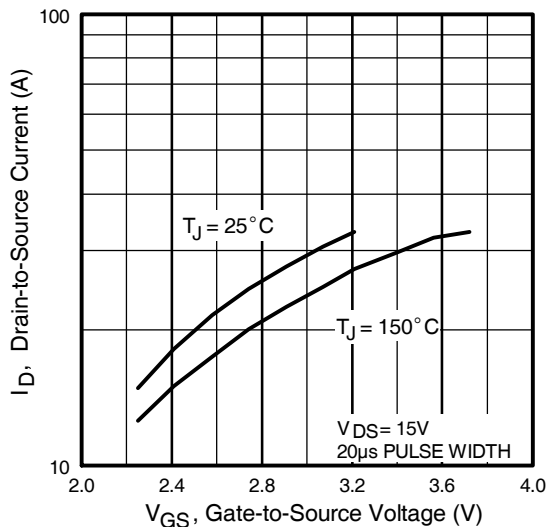
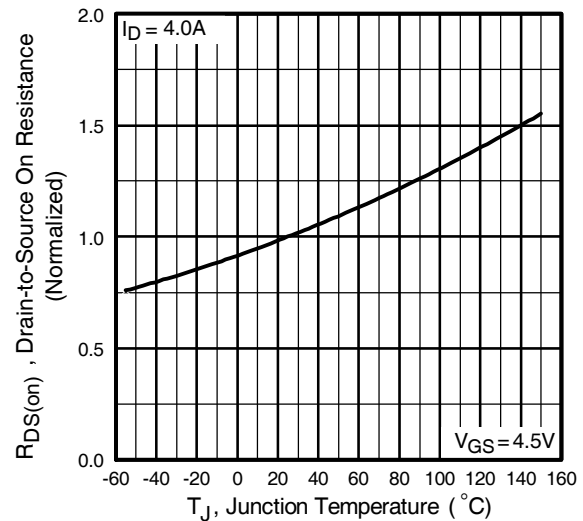
	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	1.3	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	33		
V_{SD}	Diode Forward Voltage	—	—	1.2	V	$T_J = 25^\circ\text{C}$, $I_S = 1.3\text{A}$, $V_{\text{GS}} = 0\text{V}$ ②
t_{rr}	Reverse Recovery Time	—	16	24	ns	$T_J = 25^\circ\text{C}$, $I_F = 1.3\text{A}$
Q_{rr}	Reverse Recovery Charge	—	8.6	13	nC	$di/dt = 100\text{A}/\mu\text{s}$ ②

Notes:

① Repetitive rating; pulse width limited by max. junction temperature. (See fig. 11)

② Pulse width $\leq 300\mu\text{s}$; duty cycle $\leq 2\%$.

③ Surface mounted on FR-4 board, $t \leq 5\text{sec}$.


Fig 1. Typical Output Characteristics

Fig 2. Typical Output Characteristics

Fig 3. Typical Transfer Characteristics

Fig 4. Normalized On-Resistance Vs. Temperature

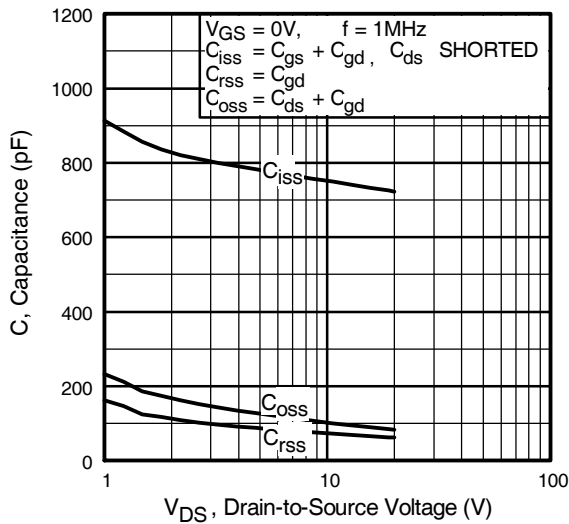


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

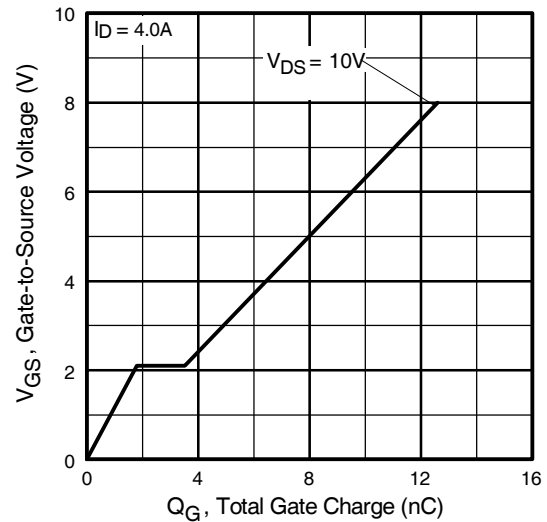


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

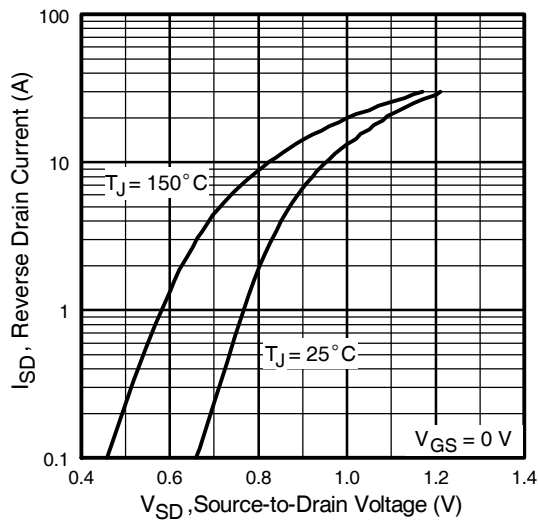


Fig 7. Typical Source-Drain Diode Forward Voltage

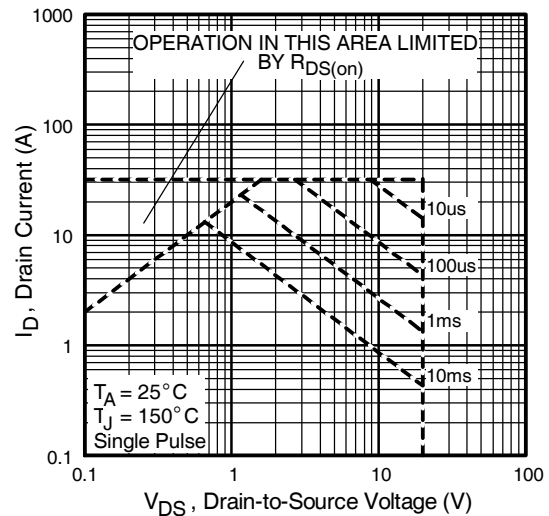


Fig 8. Maximum Safe Operating Area

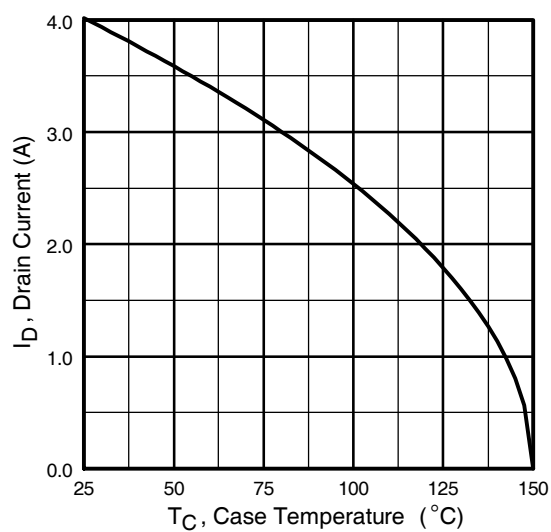


Fig 9. Maximum Drain Current Vs. Case Temperature

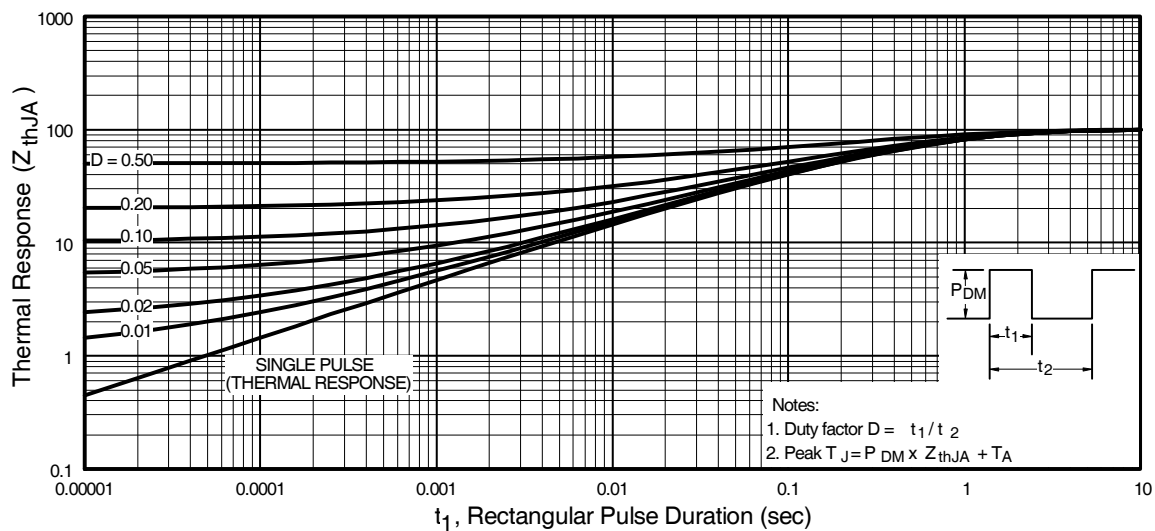
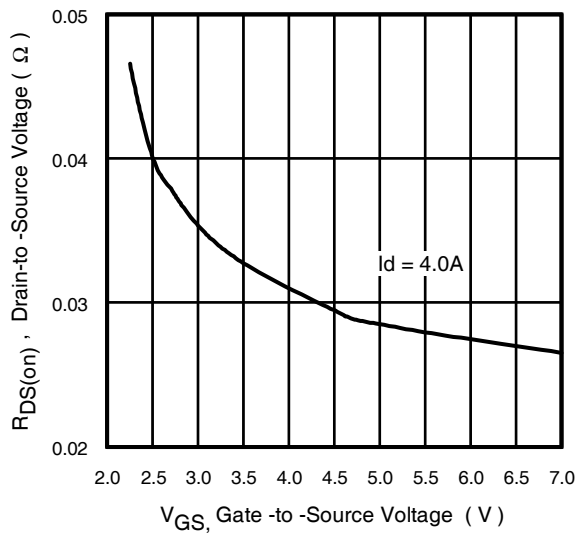
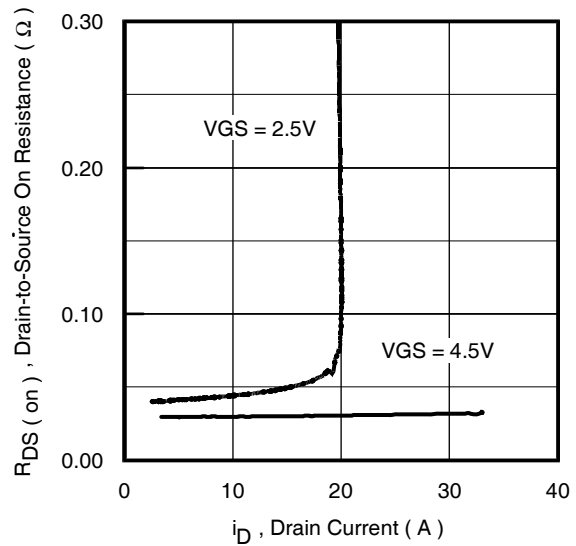
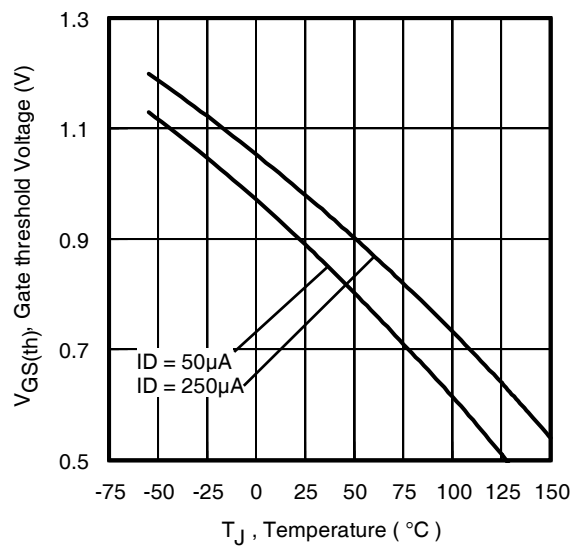
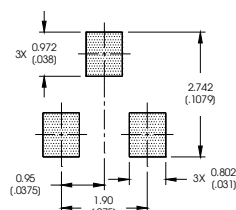


Fig 10. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient


Fig 11. On-Resistance Vs. Gate Voltage

Fig 12. On-Resistance Vs. Drain Current

Fig 13. Threshold Voltage Vs. Temperature

Dimensions are shown in millimeters (inches)

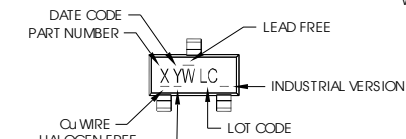


S M B C	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	MAX		MIN	MAX	
A	0.89	1.12		.036	.044	
A1	0.01	0.10		.0004	.0039	
A2	0.88	1.12		.035	.040	
b	0.30	0.60		.0119	.0196	
c	0.08	0.20		.0032	.0078	
D	2.80	3.04		.111	.119	
E	2.10	2.64		.083	.105	
E1	1.20	1.40		.048	.055	
e	.075 BSC			.0375 BSC		
e1	.190 BSC			.075 BSC		
L	0.40	0.60		.0158	.0236	
L1	.025 BSC			.0118 BSC		
R	0°	8°		0°	8°	
aaa	0.10			.004		
bbb	0.20			.008		
ccc	0.15			.006		

NOTES

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
2. DIMENSIONS ARE SHOWN IN MILLIMETERS AND INCHES.
3. CONTROLLING DIMENSION: MILLIMETER.
4. DATUM PLANE H IS LOCATED AT THE MOLD PARTING LINE.
5. DATUMA AND B TO BE DETERMINED AT DATUM PLANE H.
6. DIMENSIONS D AND E ARE MEASURED AT DATUM PLANE H.
7. DIMENSION L IS THE LEAD LENGTH FOR SOLDERING TO A SUBSTRATE.
8. OUTLINE CONFORMS TO JEDEC OUTLINE TO 236AB.

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



X = PART NUMBER CODE REFERENCE:

A = IRLML2402	S = IRLML6244
B = IRLML2803	T = IRLML6246
C = IRLML6302	U = IRLML6344
D = IRLML5103	V = IRLML6346
E = IRLML6402	W = IRFML8244
F = IRLML6401	X = IRLML2244
G = IRLML2502	Y = IRLML2246
H = IRLML5203	Z = IRFML9244

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

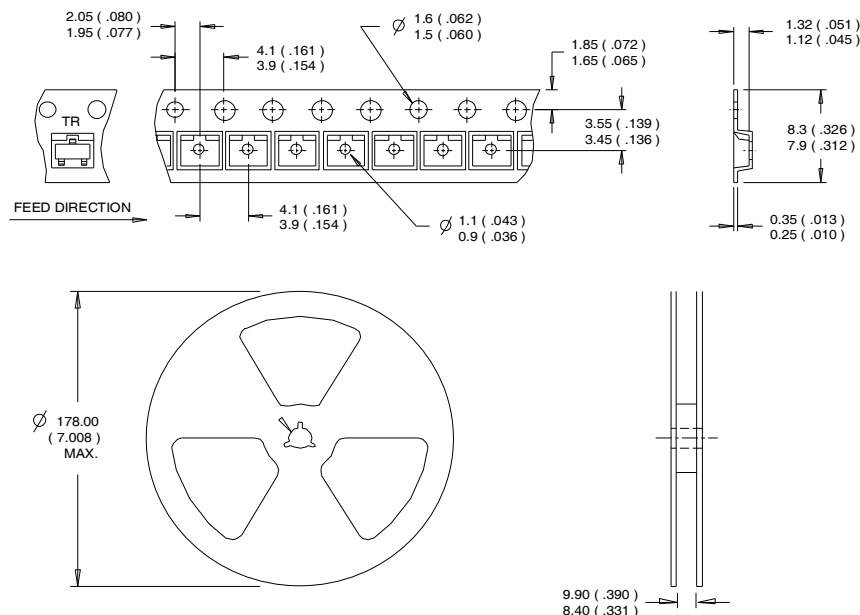
YEAR		Y	WORK WEEK	W
2011	2001	1	01	A
2012	2002	2	02	B
2013	2003	3	03	C
2014	2004	4	04	D
2015	2005	5		
2016	2006	6		
2017	2007	7		
2018	2008	8		
2019	2009	9		
2020	2010	0	24	X
			25	Y
			26	Z

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

YEAR		Y	WORK WEEK	W
2011	2001	A	27	A
2012	2002	B	28	B
2013	2003	C	29	C
2014	2004	D	30	D
2015	2005	E		
2016	2006	F		
2017	2007	G		
2018	2008	H		
2019	2009	J		
2020	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™ 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/>

Qualification information[†]

Qualification level	Industrial (per JEDEC JESD47F ^{††} guidelines)	
Moisture Sensitivity Level	Micro3™ (SOT-23)	MSL1 (per 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>

^{††} Applicable version of JEDEC standard at the time of product release

Revision History

Date	Comment
10/28/2014	• Updated partmarking to reflect Industrial partmarking on page 7.

International
IR Rectifier

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To contact International Rectifier, please visit <http://www.irf.com/whoto-call/>