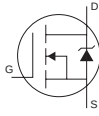


Electrical Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

	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	—	0.041	—	V/ $^\circ\text{C}$	Reference to 25°C , $I_D = 1mA$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	0.085	0.135	Ω	$V_{GS} = 4.5V, I_D = 1.7A$ ④
		—	0.120	0.20		$V_{GS} = 2.7V, I_D = 0.85A$ ④
$V_{GS(th)}$	Gate Threshold Voltage	0.70	—	—	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
g_{fs}	Forward Transconductance	2.6	—	—	S	$V_{DS} = 10V, I_D = 0.85A$
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	—	5.3	8.0	nC	$I_D = 1.7A$
Q_{gs}	Gate-to-Source Charge	—	0.84	1.3		$V_{DS} = 16V$
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	2.2	3.3		$V_{GS} = 4.5V$, See Fig. 9 ④
$t_{d(on)}$	Turn-On Delay Time	—	5.7	—	ns	$V_{DD} = 10V$
t_r	Rise Time	—	24	—		$I_D = 1.7A$
$t_{d(off)}$	Turn-Off Delay Time	—	15	—		$R_G = 6.0\Omega$
t_f	Fall Time	—	16	—		$R_D = 5.7\Omega$ ④
C_{iss}	Input Capacitance	—	260	—	pF	$V_{GS} = 0V$
C_{oss}	Output Capacitance	—	130	—		$V_{DS} = 15V$
C_{rss}	Reverse Transfer Capacitance	—	61	—		$f = 1.0MHz$, See Fig. 8

Source-Drain Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	1.25	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	19		
V_{SD}	Diode Forward Voltage	—	—	1.2	V	$T_J = 25^\circ\text{C}, I_S = 1.7A, V_{GS} = 0V$ ③
t_{rr}	Reverse Recovery Time	—	39	59	ns	$T_J = 25^\circ\text{C}, I_F = 1.7A$
Q_{rr}	Reverse Recovery Charge	—	37	56	nC	$di/dt = 100A/\mu s$ ③

Notes:

① Repetitive rating; pulse width limited by max. junction temperature. (See fig. 10)

② $I_{SD} \leq 1.7A$, $di/dt \leq 66A/\mu s$, $V_{DD} \leq V_{(BR)DSS}$, $T_J \leq 150^\circ\text{C}$

③ Pulse width $\leq 300\mu s$; duty cycle $\leq 2\%$

④ Surface mounted on FR-4 board, $t \leq 10sec$

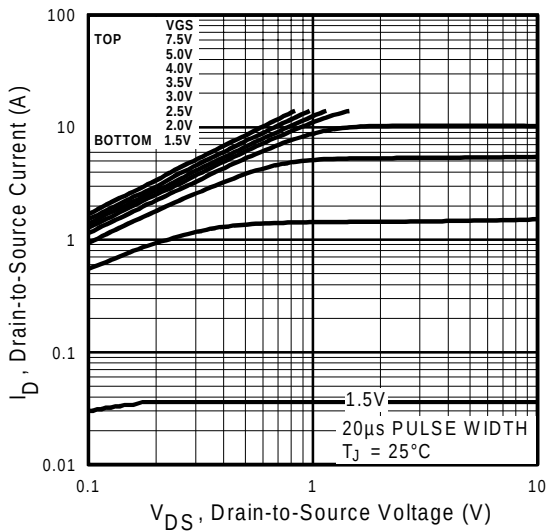


Fig 1. Typical Output Characteristics

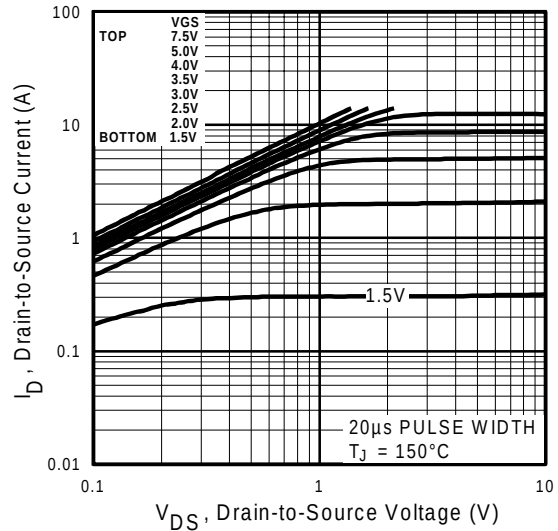


Fig 2. Typical Output Characteristics

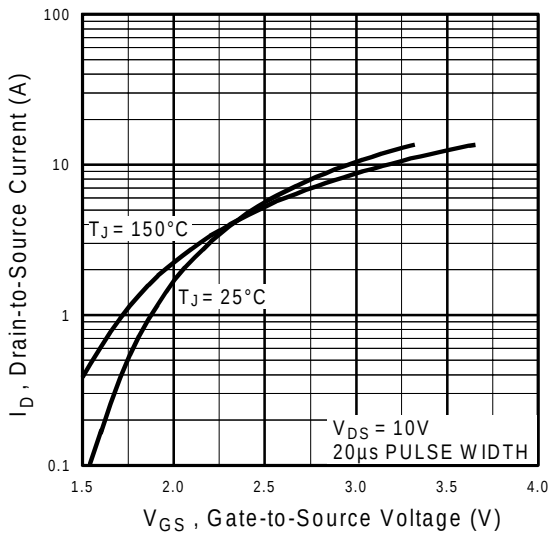


Fig 3. Typical Transfer Characteristics

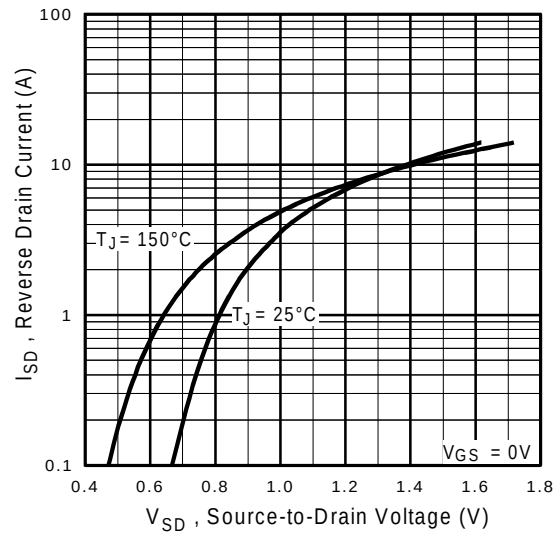


Fig 7. Typical Source-Drain Diode Forward Voltage

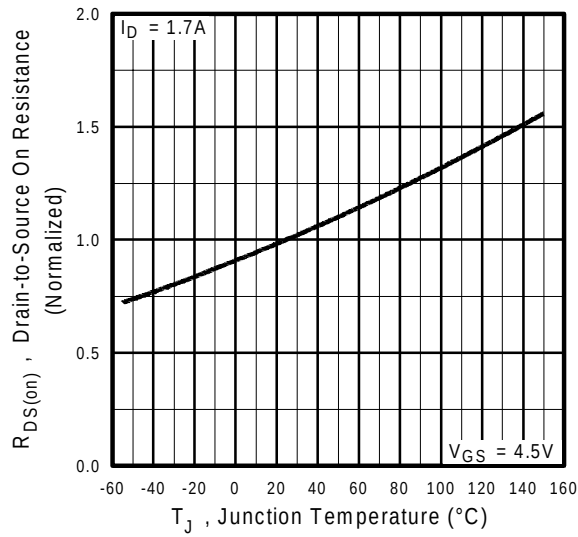


Fig 5. Normalized On-Resistance Vs. Temperature

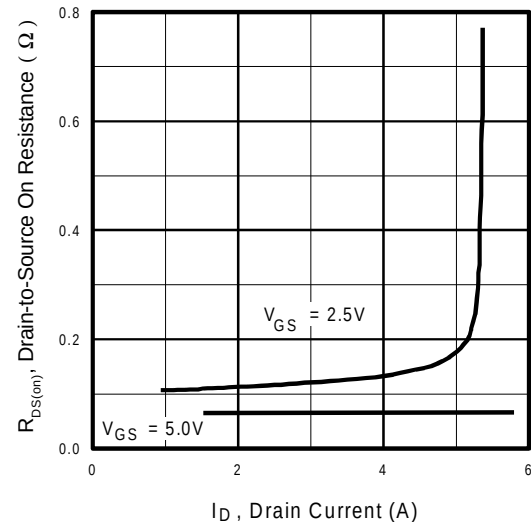


Fig 6. Typical On-Resistance Vs. Drain Current

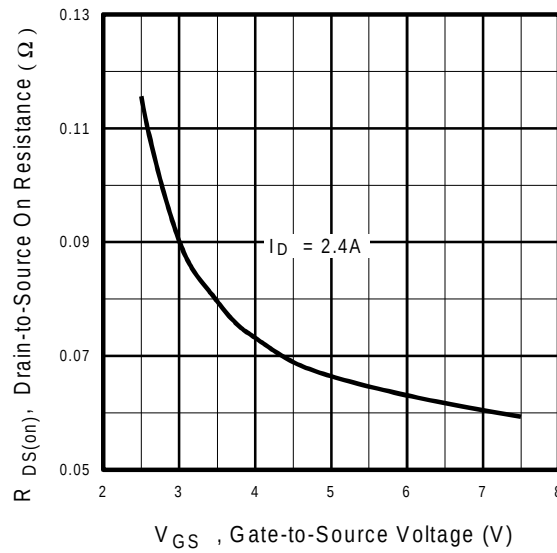
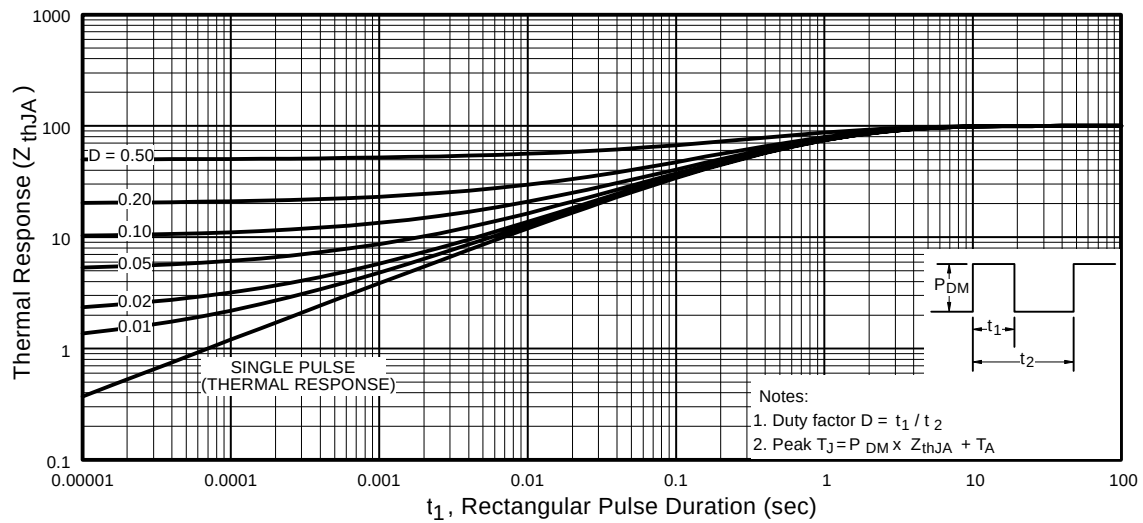
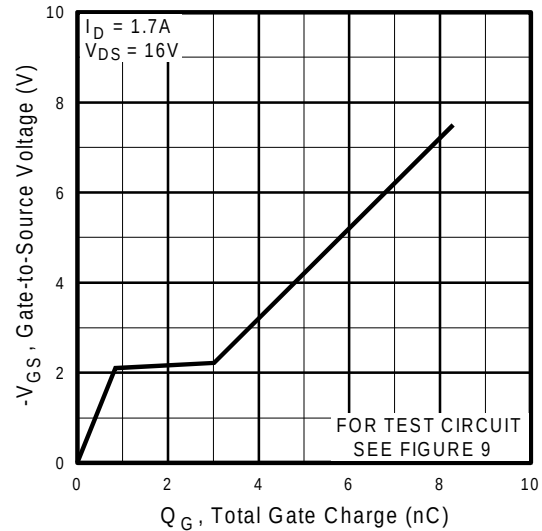
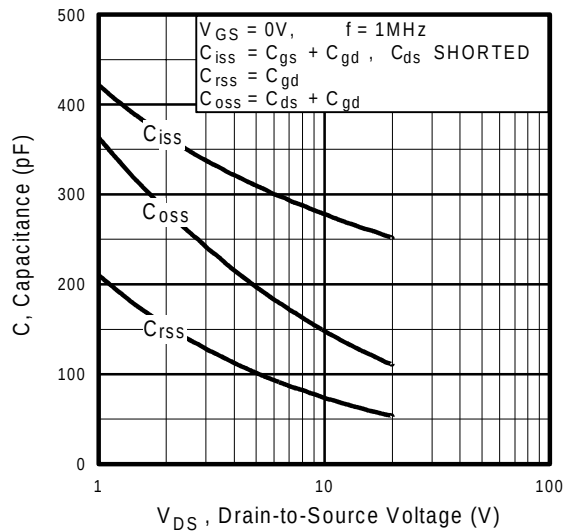


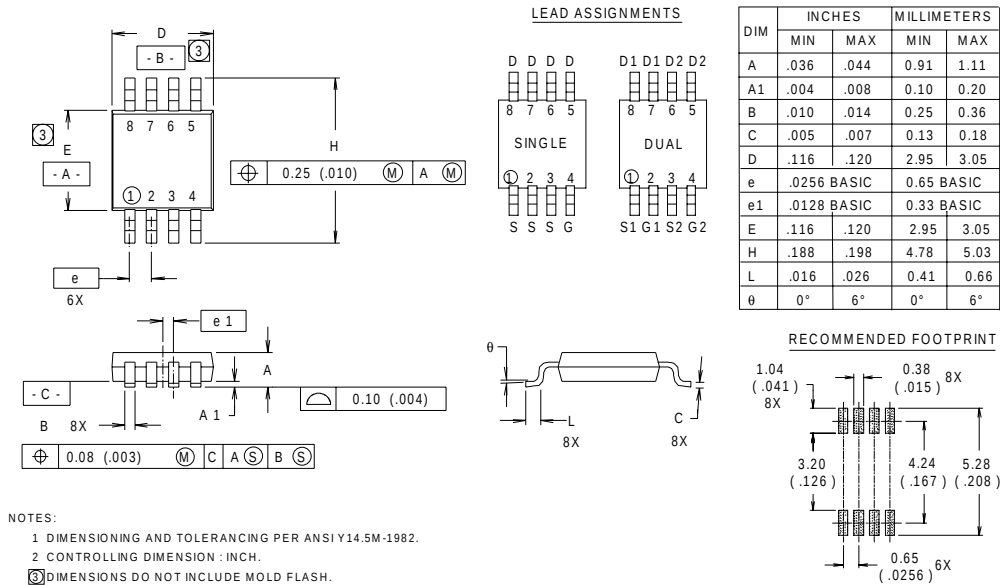
Fig 7. Typical On-Resistance Vs. Gate Voltage



IRF7501

International
IOR Rectifier

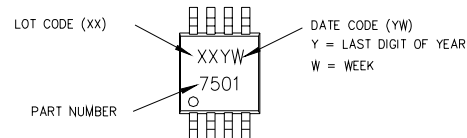
Micro8 Package Outline



Part Marking Information

IRF7501 example

EXAMPLE: THIS IS AN IRF7501



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

DATE CODE EXAMPLES:

YWW = 9503 = 5C
 YWW = 9532 = EF

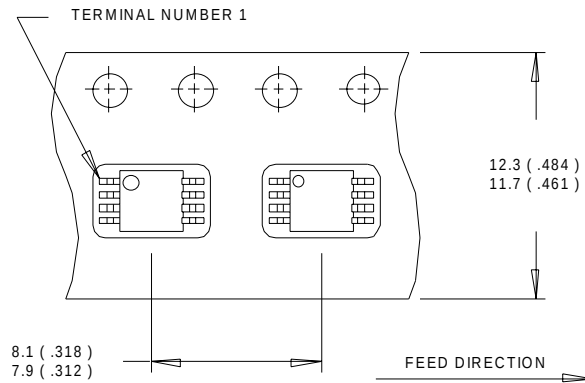
YEAR	Y	WORK WEEK	W
2001	1	01	A
2002	2	02	B
2003	3	03	C
1994	4	04	D
1995	5		
1996	6		
1997	7		
1998	8		
1999	9		
2000	0	24	X
		25	Y
		26	Z

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

YEAR	Y	WORK WEEK	W
2001	A	27	A
2002	B	28	B
2003	C	29	C
1994	D	30	D
1995	E		
1996	F		
1997	G		
1998	H		
1999	J		
2000	K	50	X
		51	Y
		52	Z

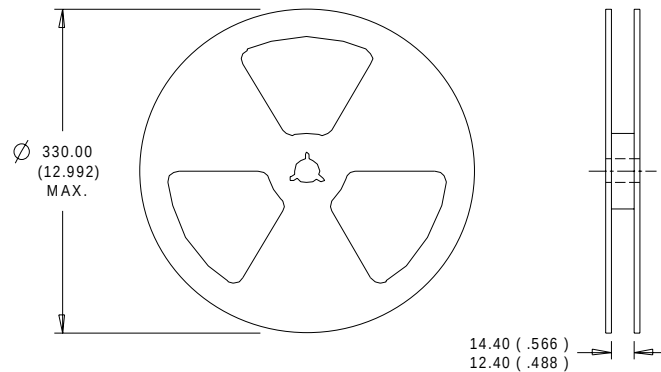
Tape & Reel

Dimensions are shown in millimeters (inches)



NOTES:

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



NOTES :

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

International
IR Rectifier

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IR CANADA: 7321 Victoria Park Ave., Suite 201, Markham, Ontario L3R 2Z8, Tel: (905) 475 1897

IR GERMANY: Saalburgstrasse 157, 61350 Bad Homburg Tel: ++ 49 6172 96590

IR ITALY: Via Liguria 49, 10071 Borgaro, Torino Tel: ++ 39 11 451 0111

IR FAR EAST: K&H Bldg., 2F, 30-4 Nishi-Ikebukuro 3-Chome, Toshima-Ku, Tokyo Japan 171 Tel: 81 3 3983 0086

IR SOUTHEAST ASIA: 315 Outram Road, #10-02 Tan Boon Liat Building, Singapore 0316 Tel: 65 221 8371

<http://www.irf.com/>

Data and specifications subject to change without notice.

4/98

www.irf.com

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