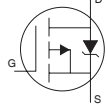


Electrical Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	-12	—	—	V	$V_{GS} = 0V$, $I_D = -250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.006	—	V/ $^\circ\text{C}$	Reference to 25°C , $I_D = -1mA$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	—	7	m Ω	$V_{GS} = -4.5V$, $I_D = -16A$ ②
		—	—	9		$V_{GS} = -2.5V$, $I_D = -13.6A$ ②
		—	—	13		$V_{GS} = -1.8V$, $I_D = -11.5A$ ②
$V_{GS(th)}$	Gate Threshold Voltage	-0.4	—	-0.9	V	$V_{DS} = V_{GS}$, $I_D = -250\mu A$
g_{fs}	Forward Transconductance	55	—	—	S	$V_{DS} = -10V$, $I_D = -16A$
I_{DSS}	Drain-to-Source Leakage Current	—	—	-1.0	μA	$V_{DS} = -9.6V$, $V_{GS} = 0V$
		—	—	-25		$V_{DS} = -9.6V$, $V_{GS} = 0V$, $T_J = 70^\circ\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	$V_{GS} = -8V$
	Gate-to-Source Reverse Leakage	—	—	100		$V_{GS} = 8V$
Q_g	Total Gate Charge	—	91	—	nC	$I_D = -16A$
Q_{gs}	Gate-to-Source Charge	—	18	—		$V_{DS} = -9.6V$
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	25	—		$V_{GS} = -4.5V$ ②
$t_{d(on)}$	Turn-On Delay Time	—	13	20	ns	$V_{DD} = -6V$, $V_{GS} = -4.5V$
t_r	Rise Time	—	12	18		$I_D = -1.0A$
$t_{d(off)}$	Turn-Off Delay Time	—	271	407		$R_D = 6\Omega$
t_f	Fall Time	—	200	300		$R_G = 6\Omega$ ②
C_{iss}	Input Capacitance	—	8676	—	pF	$V_{GS} = 0V$
C_{oss}	Output Capacitance	—	2344	—		$V_{DS} = -10V$
C_{rss}	Reverse Transfer Capacitance	—	1604	—		$f = 1.0MHz$

Source-Drain Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	-2.5	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	-65		
V_{SD}	Diode Forward Voltage	—	—	-1.2	V	$T_J = 25^\circ\text{C}$, $I_S = -2.5A$, $V_{GS} = 0V$ ②
t_{rr}	Reverse Recovery Time	—	97	145	ns	$T_J = 25^\circ\text{C}$, $I_F = -2.5A$
Q_{rr}	Reverse Recovery Charge	—	134	201	μC	$di/dt = -100A/\mu s$ ②

Notes:

- ① Repetitive rating; pulse width limited by max. junction temperature.
- ② Pulse width $\leq 400\mu s$; duty cycle $\leq 2\%$.
- ③ Surface mounted on 1 in square Cu board, $t \leq 10sec$.

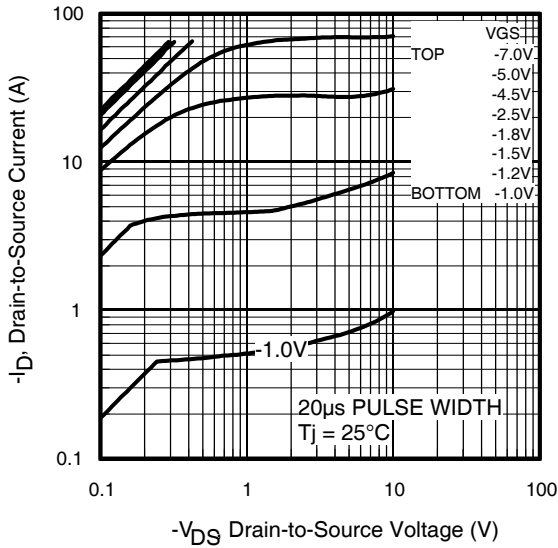


Fig 1. Typical Output Characteristics

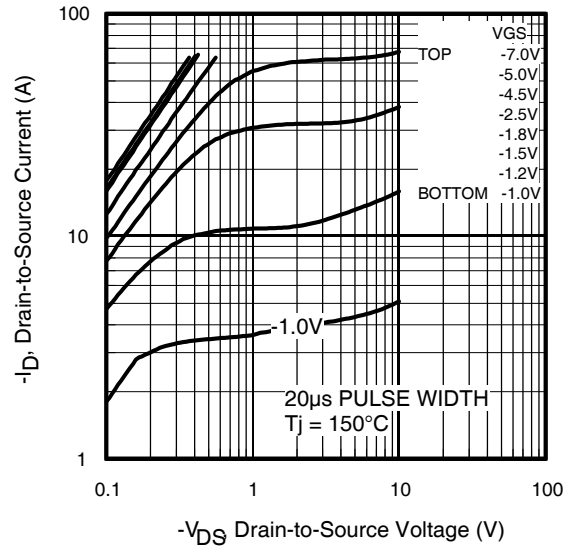


Fig 2. Typical Output Characteristics

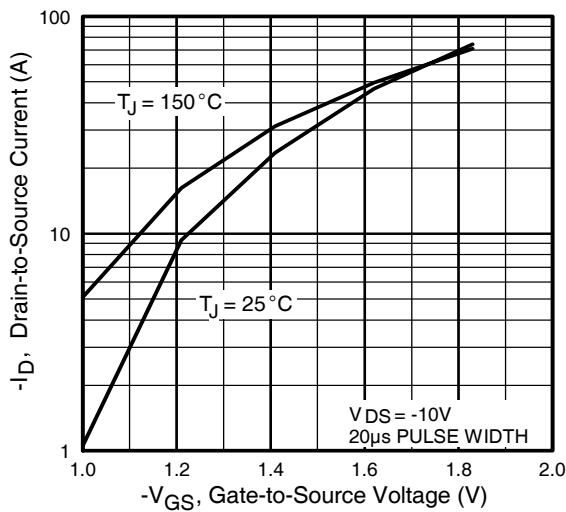


Fig 3. Typical Transfer Characteristics

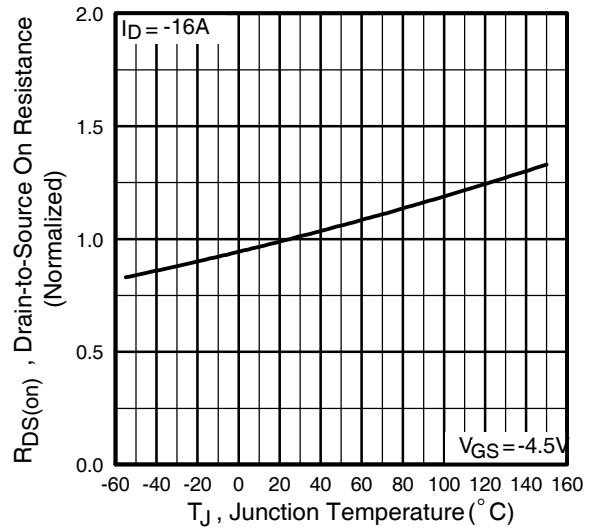
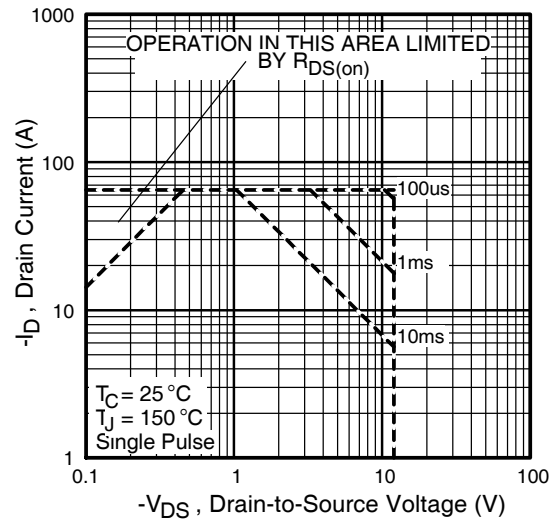
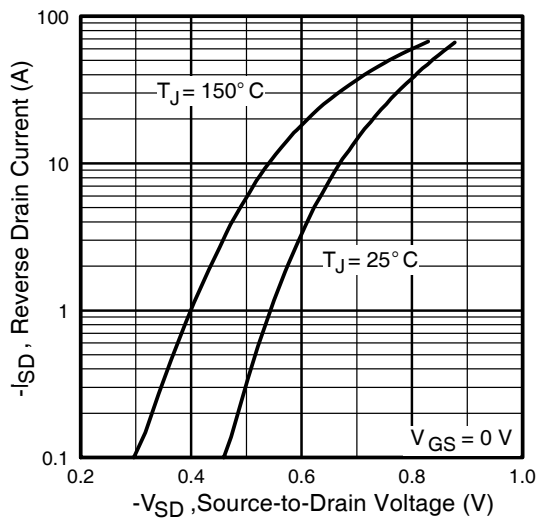
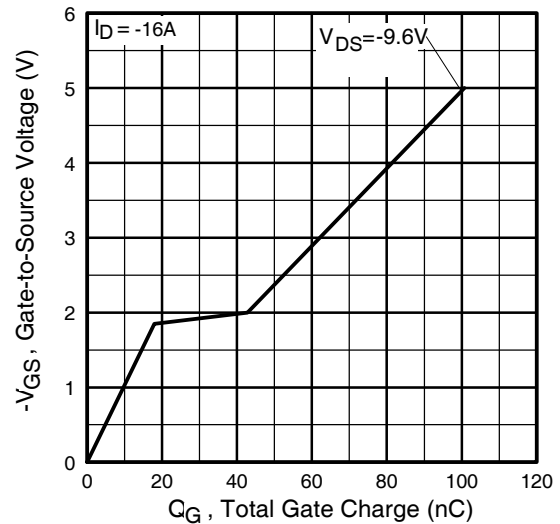
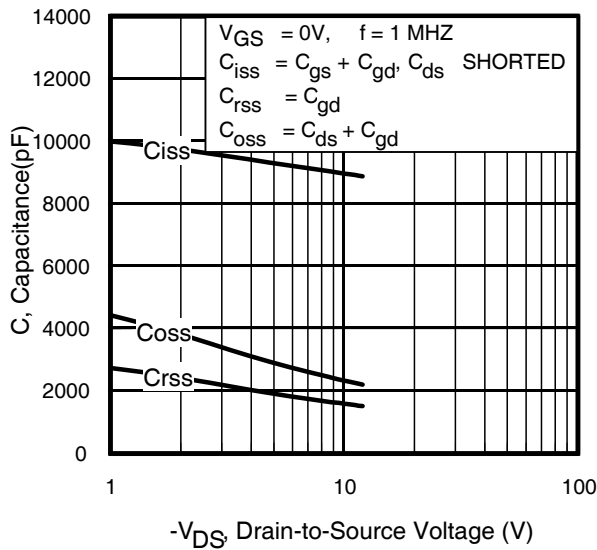


Fig 4. Normalized On-Resistance
Vs. Temperature

IRF7410

International
IR Rectifier



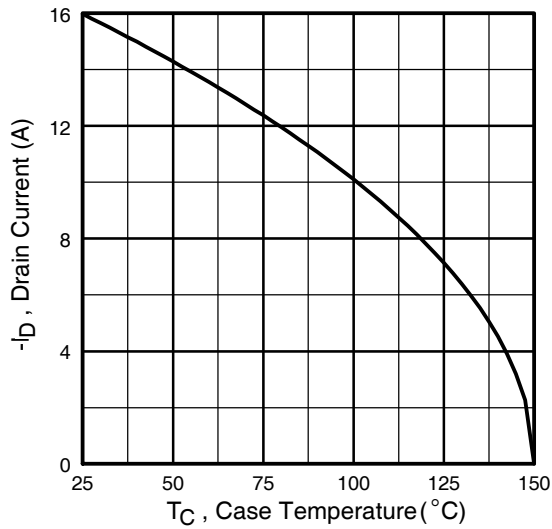


Fig 9. Maximum Drain Current Vs. Case Temperature

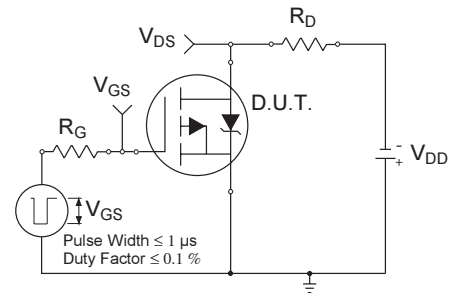


Fig 10a. Switching Time Test Circuit

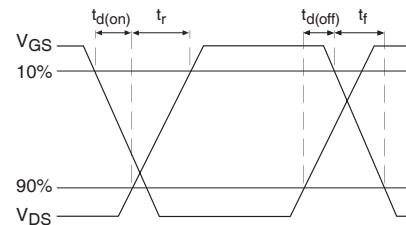


Fig 10b. Switching Time Waveforms

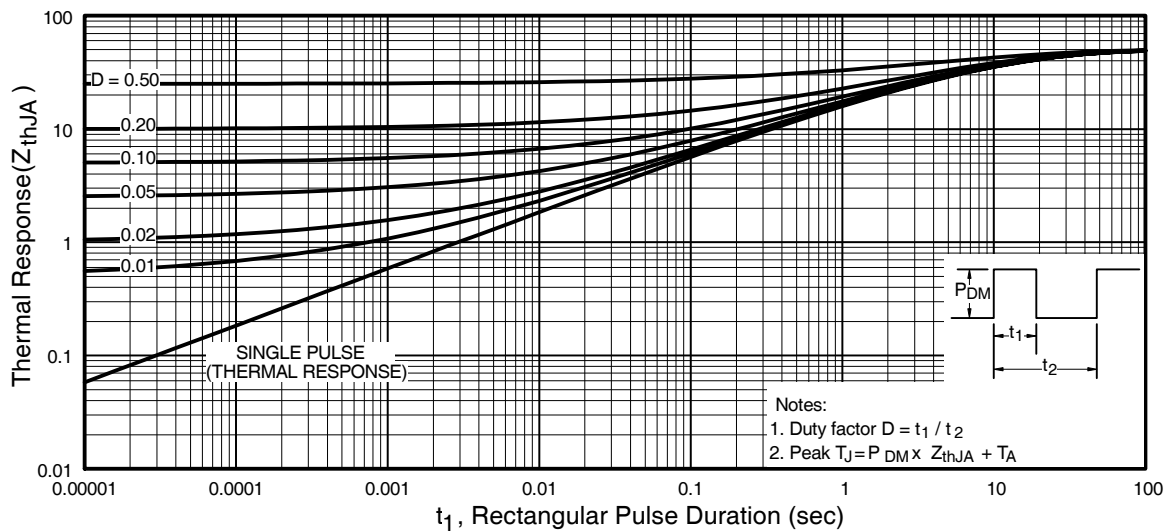


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

IRF7410

International
IR Rectifier

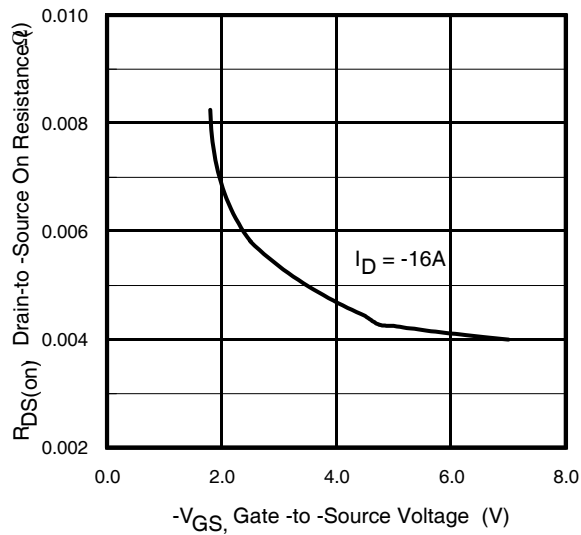


Fig 12. Typical On-Resistance Vs. Gate Voltage

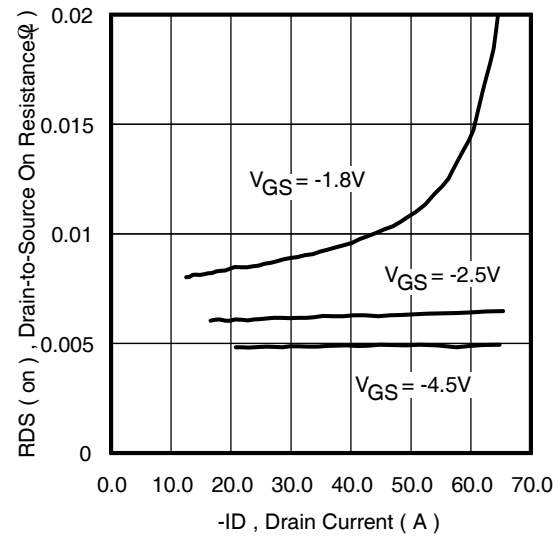


Fig 13. Typical On-Resistance Vs. Drain Current

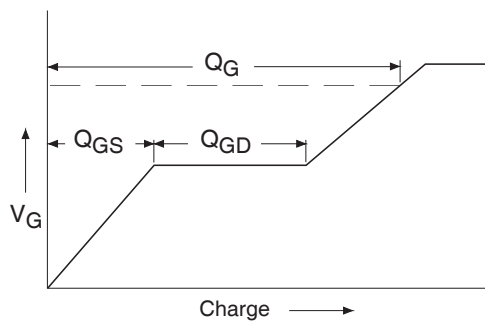


Fig 14a. Basic Gate Charge Waveform

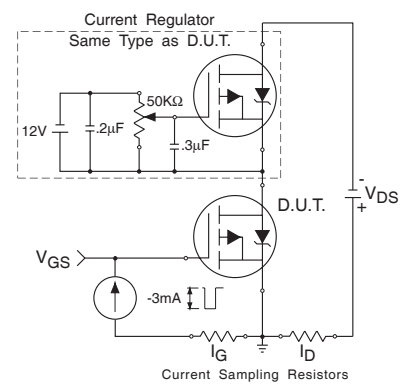


Fig 14b. Gate Charge Test Circuit

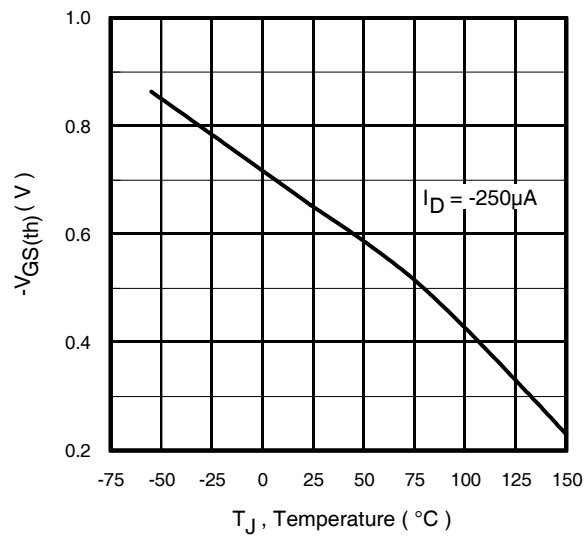


Fig 15. Typical $V_{GS(th)}$ Vs. Junction Temperature

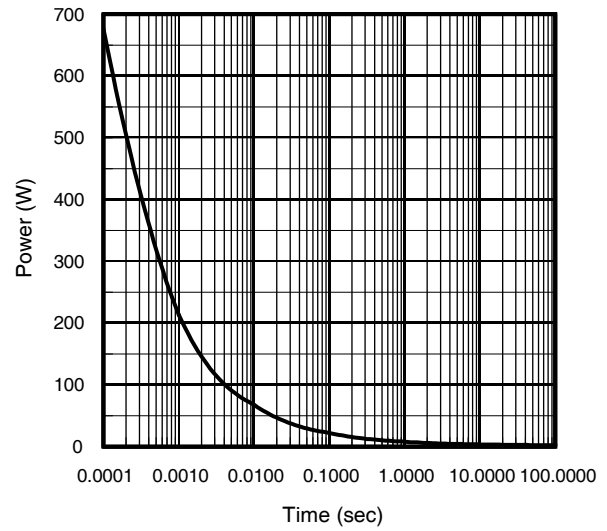
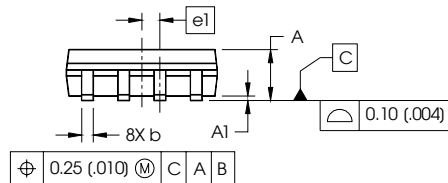


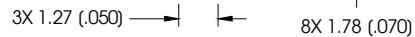
Fig 16. Typical Power Vs. Time

SO-8 Package Details

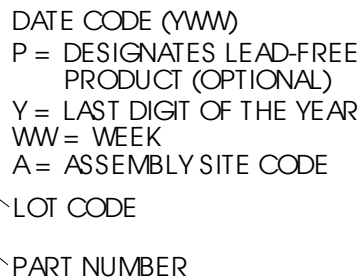
IOR Rectifier



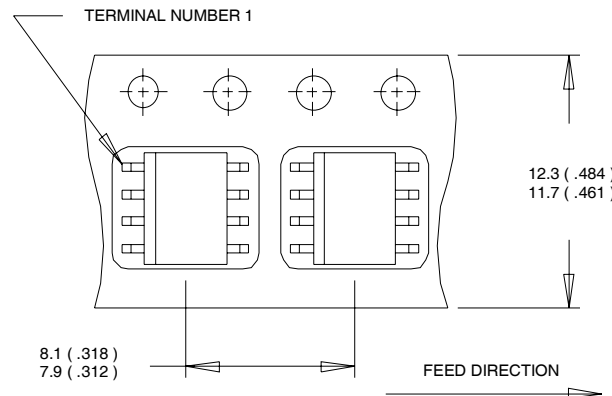
1. DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994.
2. CONTROLLING DIMENSION: MILLIMETER
3. DIMENSIONS ARE SHOWN IN MILLIMETERS (INCHES).
4. OUTLINE CONFORMS TO JEDEC OUTLINE MS-012AA.
- ⑤ DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS.
MOLD PROTRUSIONS NOT TO EXCEED 0.15 (.006).
- ⑥ DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS.
MOLD PROTRUSIONS NOT TO EXCEED 0.25 (.010).
- ⑦ DIMENSION IS THE LENGTH OF LEAD FOR SOLDERING TO A SUBSTRATE.



EXAMPLE: THIS IS AN IRF7101 (MOSFET)

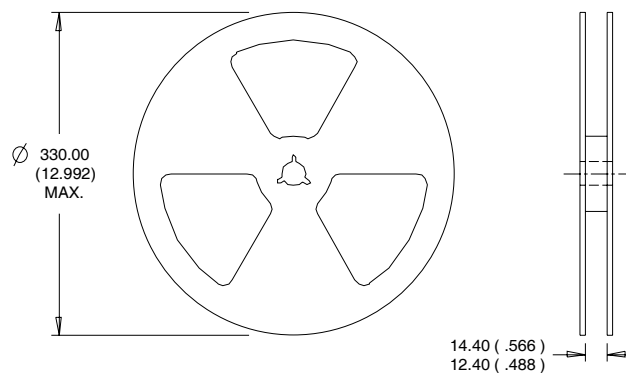


Tape and Reel



NOTES:

1. CONTROLLING DIMENSION : MILLIMETER.
2. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS(INCHES).
3. OUTLINE CONFORMS TO EIA-481 & EIA-541.



NOTES :

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

Data and specifications subject to change without notice.
This product has been designed and qualified for the Industrial market.
Qualification Standards can be found on IR's Web site.

International
IR Rectifier

IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105
TAC Fax: (310) 252-7903

Visit us at www.irf.com for sales contact information.08/06