

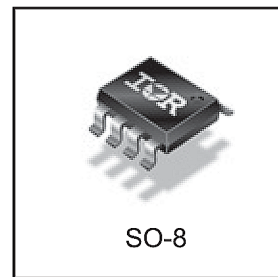
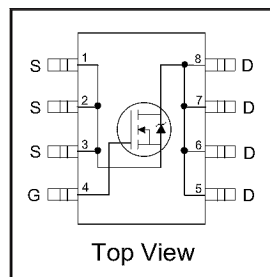
Applications

- High Frequency Isolated DC-DC Converters with Synchronous Rectification for Telecom and Industrial Use
- High Frequency Buck Converters for Computer Processor Power
- Lead-Free

V_{DS}	R_{DS(on)} max(mΩ)	I_D
40V	17@V_{GS} = 10V	9.0A

Benefits

- Ultra-Low Gate Impedance
- Very Low R_{DS(on)}
- Fully Characterized Avalanche Voltage and Current



Absolute Maximum Ratings

Symbol	Parameter	Max.	Units
V _{DS}	Drain-Source Voltage	40	V
V _{GS}	Gate-to-Source Voltage	± 20	V
I _D @ T _A = 25°C	Continuous Drain Current, V _{GS} @ 10V	9.0	A
I _D @ T _A = 70°C	Continuous Drain Current, V _{GS} @ 10V	7.3	
I _{DM}	Pulsed Drain Current①	73	
P _D @ T _A = 25°C	Maximum Power Dissipation③	2.5	W
P _D @ T _A = 70°C	Maximum Power Dissipation③	1.6	W
	Linear Derating Factor	0.02	mW/°C
T _J , T _{STG}	Junction and Storage Temperature Range	-55 to + 150	°C

Thermal Resistance

Symbol	Parameter	Typ.	Max.	Units
R _{θJL}	Junction-to-Drain Lead	—	20	°C/W
R _{θJA}	Junction-to-Ambient ④	—	50	

Notes ① through ④ are on page 8

IRF7469PbF

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Static @ T_J = 25°C (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source Breakdown Voltage	40	—	—	V	V _{GS} = 0V, I _D = 250μA
ΔV _{(BR)DSS} /ΔT _J	Breakdown Voltage Temp. Coefficient	—	0.04	—	V/°C	Reference to 25°C, I _D = 1mA
R _{DS(on)}	Static Drain-to-Source On-Resistance	—	12	17	mΩ	V _{GS} = 10V, I _D = 9.0A ③
		—	15.5	21		V _{GS} = 4.5V, I _D = 7.2A ③
V _{GS(th)}	Gate Threshold Voltage	1.0	—	3.0	V	V _{DS} = V _{GS} , I _D = 250μA
I _{DSS}	Drain-to-Source Leakage Current	—	—	20	μA	V _{DS} = 32V, V _{GS} = 0V
		—	—	100		V _{DS} = 32V, V _{GS} = 0V, T _J = 125°C
I _{GSS}	Gate-to-Source Forward Leakage	—	—	200	nA	V _{GS} = 16V
	Gate-to-Source Reverse Leakage	—	—	-200		V _{GS} = -16V

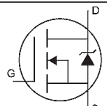
Dynamic @ T_J = 25°C (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
g _{fs}	Forward Transconductance	17	—	—	S	V _{DS} = 20V, I _D = 7.2A
Q _g	Total Gate Charge	—	15	23	nC	I _D = 7.2A
Q _{gs}	Gate-to-Source Charge	—	7.0	11		V _{DS} = 20V
Q _{gd}	Gate-to-Drain ("Miller") Charge	—	5.0	8.0		V _{GS} = 4.5V ③
Q _{oss}	Output Gate Charge	—	16	24		V _{GS} = 0V, V _{DS} = 16V
t _{d(on)}	Turn-On Delay Time	—	11	—	ns	V _{DD} = 20V
t _r	Rise Time	—	2.2	—		I _D = 7.2A
t _{d(off)}	Turn-Off Delay Time	—	14	—		R _G = 1.8Ω
t _f	Fall Time	—	3.5	—		V _{GS} = 4.5V ③
C _{iss}	Input Capacitance	—	2000	—	pF	V _{GS} = 0V
C _{oss}	Output Capacitance	—	480	—		V _{DS} = 20V
C _{rss}	Reverse Transfer Capacitance	—	28	—		f = 1.0MHz

Avalanche Characteristics

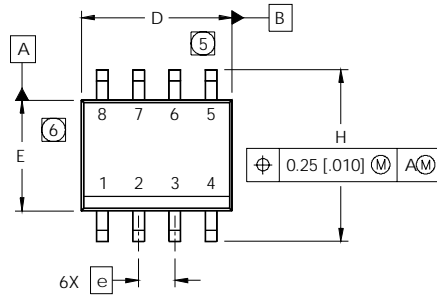
Symbol	Parameter	Typ.	Max.	Units
E _{AS}	Single Pulse Avalanche Energy②	—	210	mJ
I _{AR}	Avalanche Current①	—	7.2	A

Diode Characteristics

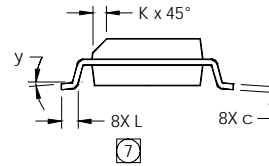
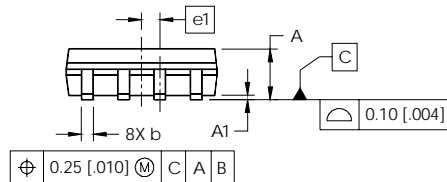
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode)	—	—	2.3	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I _{SM}	Pulsed Source Current (Body Diode) ①	—	—	73		
V _{SD}	Diode Forward Voltage	—	0.80	1.3	V	T _J = 25°C, I _S = 7.2A, V _{GS} = 0V ③
		—	0.65	—		T _J = 125°C, I _S = 7.2A, V _{GS} = 0V ③
t _{rr}	Reverse Recovery Time	—	47	71	ns	T _J = 25°C, I _F = 7.2A, V _R = 15V
Q _{rr}	Reverse Recovery Charge	—	91	140	nC	di/dt = 100A/μs ③
t _{rr}	Reverse Recovery Time	—	77	120	ns	T _J = 125°C, I _F = 7.2A, V _R = 20V
Q _{rr}	Reverse Recovery Charge	—	150	230	nC	di/dt = 100A/μs ③

SO-8 Package Outline

Dimensions are shown in millimeters (inches)



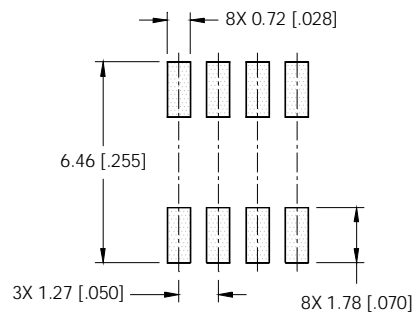
DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.0532	.0688	1.35	1.75
A1	.0040	.0098	0.10	0.25
b	.013	.020	0.33	0.51
c	.0075	.0098	0.19	0.25
D	.189	.1968	4.80	5.00
E	.1497	.1574	3.80	4.00
e	.050 BASIC		1.27 BASIC	
e1	.025 BASIC		0.635 BASIC	
H	.2284	.2440	5.80	6.20
K	.0099	.0196	0.25	0.50
L	.016	.050	0.40	1.27
y	0°	8°	0°	8°



NOTES:

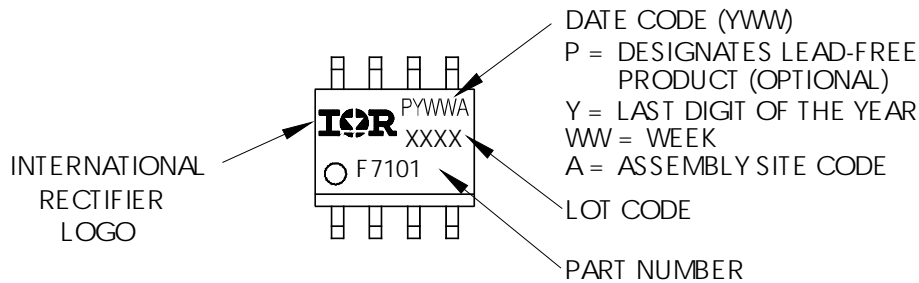
1. DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994.
2. CONTROLLING DIMENSION: MILLIMETER
3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
4. OUTLINE CONFORMS TO JEDEC OUTLINE MS-012AA.
- ⑤ DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.15 [0.006].
- ⑥ DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.25 [0.010].
- ⑦ DIMENSION IS THE LENGTH OF LEAD FOR SOLDERING TO ASUBSTRATE.

FOOTPRINT



SO-8 Part Marking

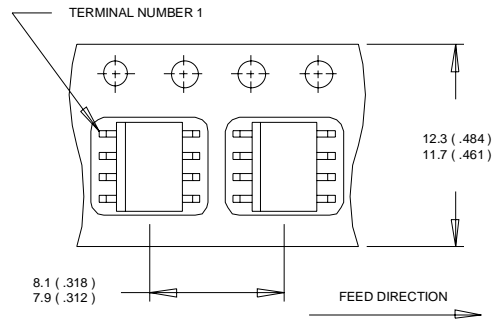
EXAMPLE: THIS IS AN IRF7101 (MOSFET)



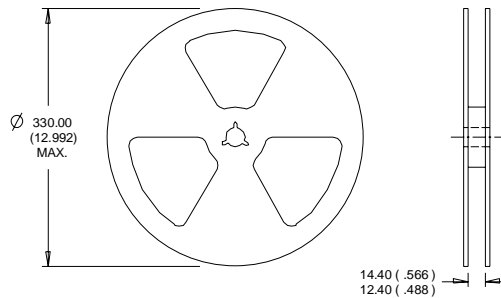
IRF7469PbF

SO-8 Tape and Reel

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- 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.

Notes:

- ① Repetitive rating; pulse width limited by max. junction temperature.
- ② Starting $T_J = 25^\circ\text{C}$, $L = 8.1\text{mH}$
 $R_G = 25\Omega$, $I_{AS} = 7.2\text{A}$.
- ③ Pulse width $\leq 400\mu\text{s}$; duty cycle $\leq 2\%$.
- ④ When mounted on 1 inch square copper board.

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

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