

# IRF7466PBF Datasheet



DiGi Electronics Part Number	IRF7466PBF-DG
Manufacturer	<a href="#">Infineon Technologies</a>
Manufacturer Product Number	IRF7466PBF
Description	MOSFET N-CH 30V 11A 8SO
Detailed Description	N-Channel 30 V 11A (Ta) 2.5W (Ta) Surface Mount 8-SO

<https://www.DiGi-Electronics.com>



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

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## Purchase and inquiry

Manufacturer Product Number:

IRF7466PBF

Series:

HEXFET®

FET Type:

N-Channel

Drain to Source Voltage (Vdss):

30 V

Drive Voltage (Max Rds On, Min Rds On):

4.5V, 10V

Vgs(th) (Max) @ Id:

3V @ 250µA

Vgs (Max):

±20V

FET Feature:

-

Operating Temperature:

-55°C ~ 150°C (Tj)

Supplier Device Package:

8-SO

Manufacturer:

Infineon Technologies

Product Status:

Obsolete

Technology:

MOSFET (Metal Oxide)

Current - Continuous Drain (Id) @ 25°C:

11A (Ta)

Rds On (Max) @ Id, Vgs:

12.5mOhm @ 11A, 10V

Gate Charge (Qg) (Max) @ Vgs:

23 nC @ 4.5 V

Input Capacitance (Ciss) (Max) @ Vds:

2100 pF @ 15 V

Power Dissipation (Max):

2.5W (Ta)

Mounting Type:

Surface Mount

Package / Case:

8-SOIC (0.154", 3.90mm Width)

## Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0095

International  
**IR** Rectifier

**SMPS MOSFET**

**IRF7466PbF**

PD- 95730

### Applications

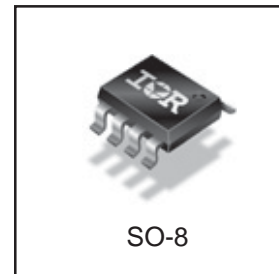
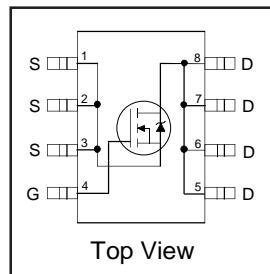
- High Frequency Isolated DC-DC Converters with Synchronous Rectification for Telecom and Industrial Use
- High Frequency Buck Converters for Computer Processor Power
- Lead-Free

HEXFET® Power MOSFET

$V_{DSS}$	$R_{DS(on)}$ max(m $\Omega$ )	$I_D$
<b>30V</b>	<b>12.5@<math>V_{GS} = 10V</math></b>	<b>11A</b>

### 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	30	V
$V_{GS}$	Gate-to-Source Voltage	$\pm 20$	V
$I_D @ T_A = 25^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 10V$	11	A
$I_D @ T_A = 70^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 10V$	9.0	
$I_{DM}$	Pulsed Drain Current <sup>①</sup>	90	
$P_D @ T_A = 25^\circ\text{C}$	Maximum Power Dissipation <sup>③</sup>	2.5	W
$P_D @ T_A = 70^\circ\text{C}$	Maximum Power Dissipation <sup>③</sup>	1.6	W
	Linear Derating Factor	0.02	mW/ $^\circ\text{C}$
$T_J, T_{STG}$	Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

### Thermal Resistance

Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JL}$	Junction-to-Drain Lead	—	20	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Junction-to-Ambient <sup>④</sup>	—	50	

Notes <sup>①</sup> through <sup>④</sup> are on page 8  
www.irf.com

## IRF7466PbF

International  
IR RectifierStatic @  $T_J = 25^\circ\text{C}$  (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	30	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.028	—	V/ $^\circ\text{C}$	Reference to $25^\circ\text{C}, I_D = 1\text{mA}$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	9.8	12.5	$\text{m}\Omega$	$V_{GS} = 10V, I_D = 11A$ ③
		—	13	17		$V_{GS} = 4.5V, I_D = 8.8A$ ③
$V_{GS(th)}$	Gate Threshold Voltage	1.0	—	3.0	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
$I_{DSS}$	Drain-to-Source Leakage Current	—	—	20	$\mu A$	$V_{DS} = 24V, V_{GS} = 0V$
		—	—	100		$V_{DS} = 24V, V_{GS} = 0V, T_J = 125^\circ\text{C}$
$I_{GSS}$	Gate-to-Source Forward Leakage	—	—	200	nA	$V_{GS} = 16V$
	Gate-to-Source Reverse Leakage	—	—	-200		$V_{GS} = -16V$

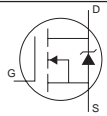
Dynamic @  $T_J = 25^\circ\text{C}$  (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$g_{fs}$	Forward Transconductance	22	—	—	S	$V_{DS} = 15V, I_D = 8.8A$
$Q_g$	Total Gate Charge	—	16	23	nC	$I_D = 8.8A$
$Q_{gs}$	Gate-to-Source Charge	—	7.4	11		$V_{DS} = 15V$
$Q_{gd}$	Gate-to-Drain ("Miller") Charge	—	5.3	8.0		$V_{GS} = 4.5V$ ③
$Q_{oss}$	Output Gate Charge	—	19	29		$V_{GS} = 0V, V_{DS} = 15V$
$t_{d(on)}$	Turn-On Delay Time	—	10	—	ns	$V_{DD} = 15V$
$t_r$	Rise Time	—	2.8	—		$I_D = 8.8A$
$t_{d(off)}$	Turn-Off Delay Time	—	13	—		$R_G = 1.8\Omega$
$t_f$	Fall Time	—	3.6	—		$V_{GS} = 4.5V$ ③
$C_{iss}$	Input Capacitance	—	2100	—	pF	$V_{GS} = 0V$
$C_{oss}$	Output Capacitance	—	710	—		$V_{DS} = 15V$
$C_{riss}$	Reverse Transfer Capacitance	—	52	—		$f = 1.0\text{MHz}$

## Avalanche Characteristics

Symbol	Parameter	Typ.	Max.	Units
$E_{AS}$	Single Pulse Avalanche Energy②	—	230	mJ
$I_{AR}$	Avalanche Current①	—	8.8	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	—	—	90		
$V_{SD}$	Diode Forward Voltage	—	0.8	1.3	V	$T_J = 25^\circ\text{C}, I_S = 8.8A, V_{GS} = 0V$ ③
		—	0.66	—		$T_J = 125^\circ\text{C}, I_S = 8.8A, V_{GS} = 0V$ ③
$t_{rr}$	Reverse Recovery Time	—	42	63	ns	$T_J = 25^\circ\text{C}, I_F = 8.8A, V_R = 15V$
$Q_{rr}$	Reverse Recovery Charge	—	59	89	nC	$di/dt = 100A/\mu s$ ③
$t_{rr}$	Reverse Recovery Time	—	42	63	ns	$T_J = 125^\circ\text{C}, I_F = 8.8A, V_R = 15V$
$Q_{rr}$	Reverse Recovery Charge	—	61	92	nC	$di/dt = 100A/\mu s$ ③

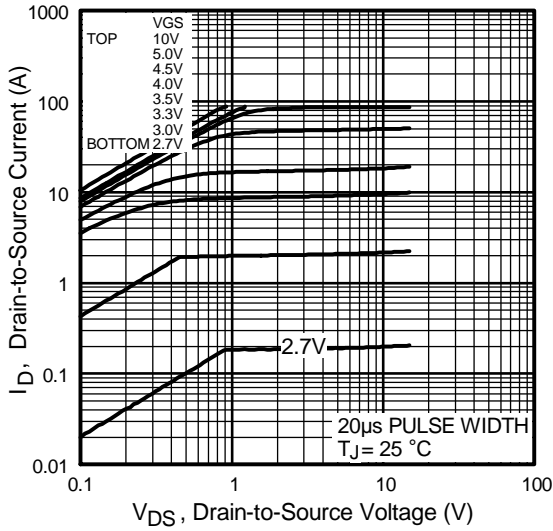


Fig 1. Typical Output Characteristics

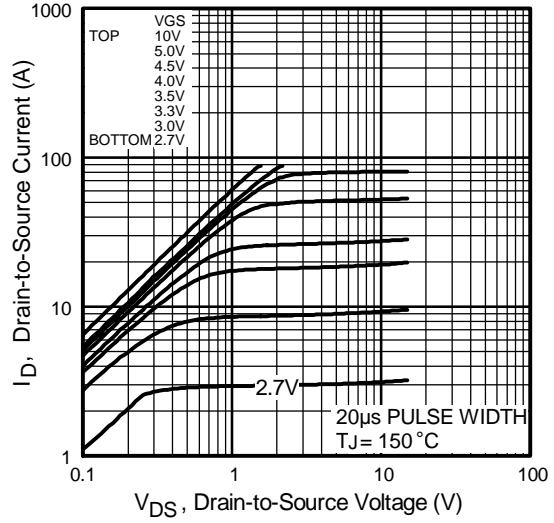


Fig 2. Typical Output Characteristics

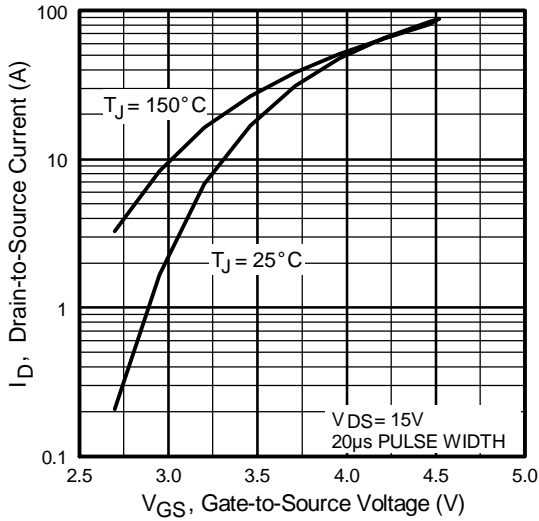


Fig 3. Typical Transfer Characteristics

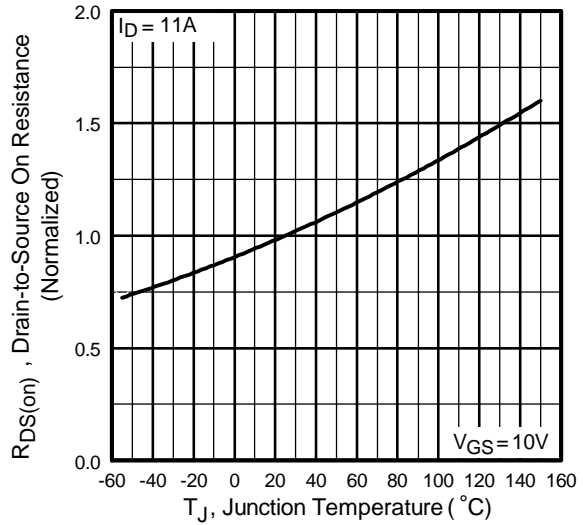
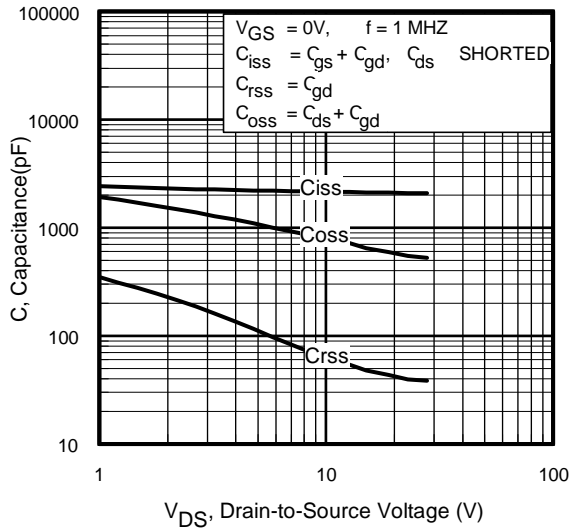


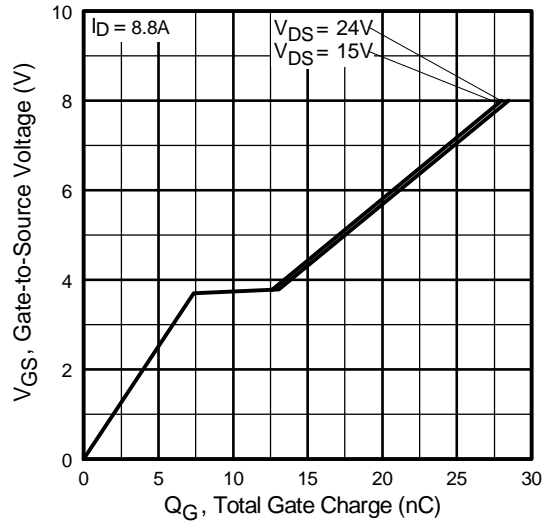
Fig 4. Normalized On-Resistance Vs. Temperature

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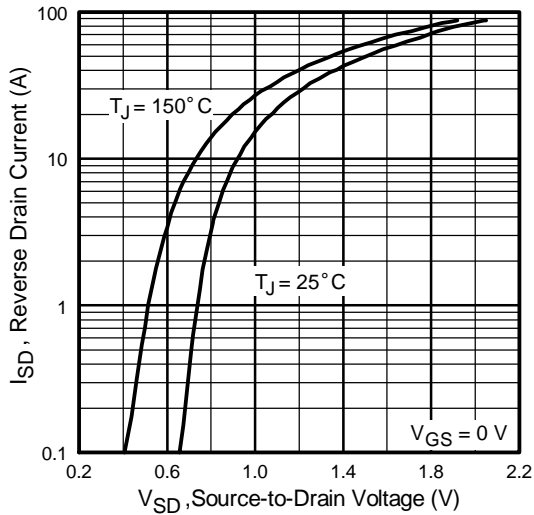
International  
**IR** Rectifier



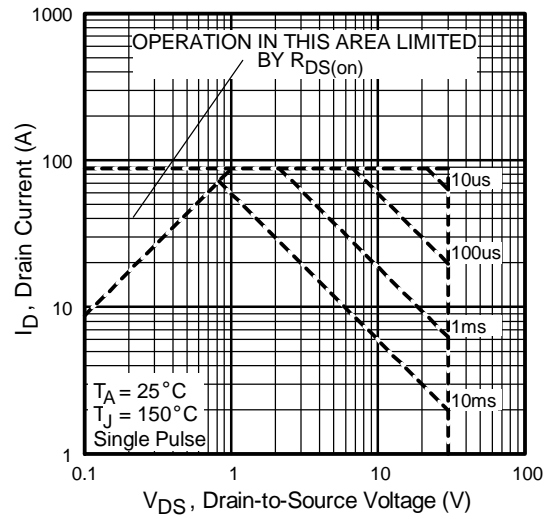
**Fig 5.** Typical Capacitance Vs. Drain-to-Source Voltage



**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 6. On-Resistance Vs. Drain Current

International  
IR Rectifier

IRF7466PbF

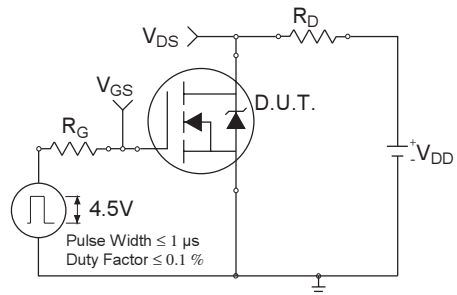
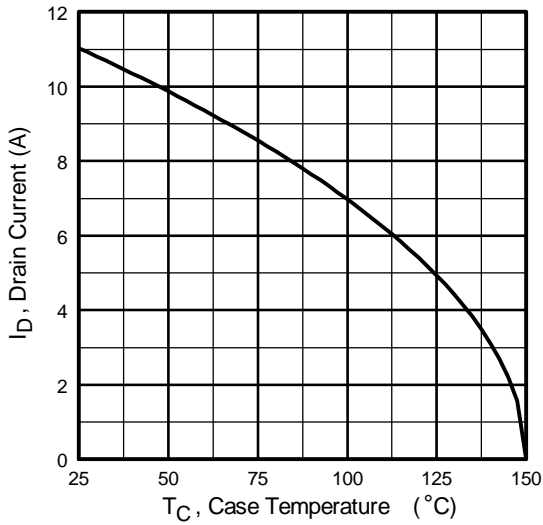


Fig 10a. Switching Time Test Circuit

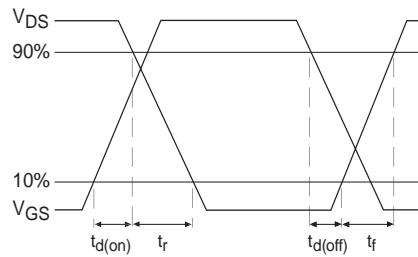


Fig 10b. Switching Time Waveforms

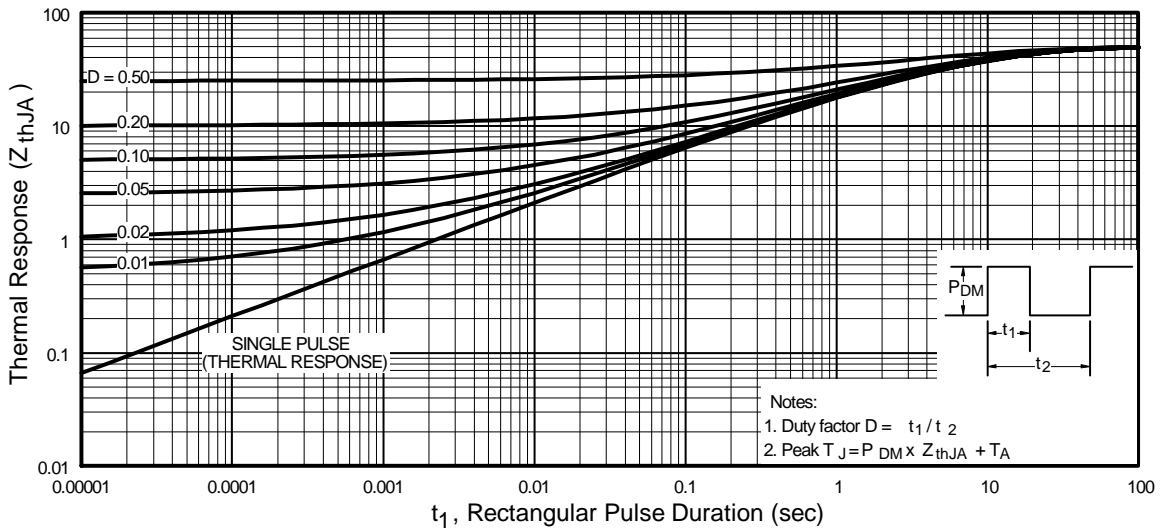
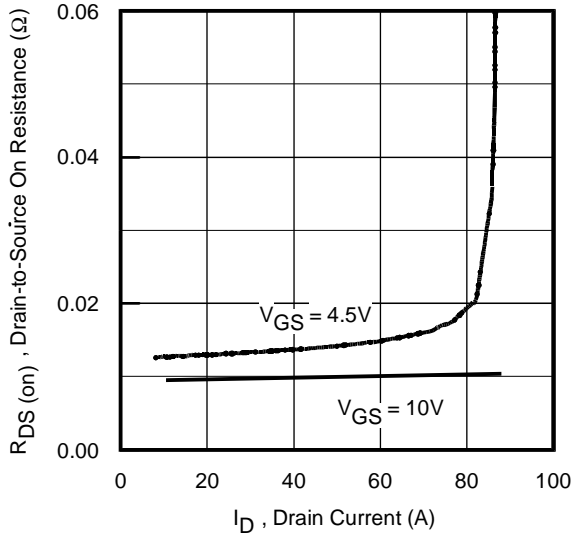


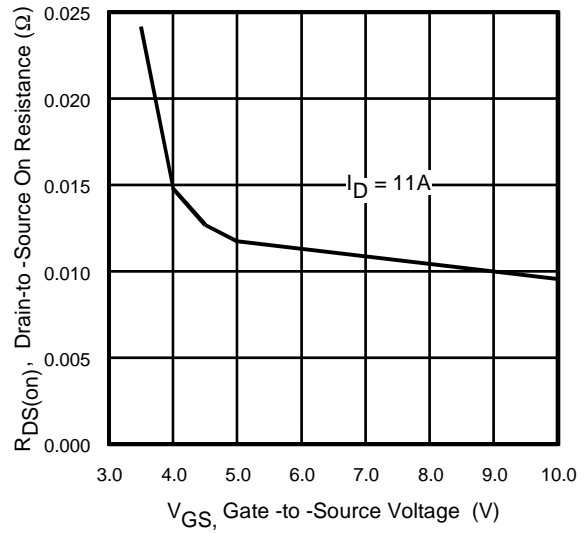
Fig 10. Maximum Effective Transient Thermal Impedance, Junction-to-Case

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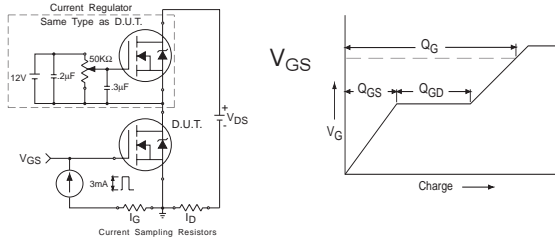
International  
**IR** Rectifier



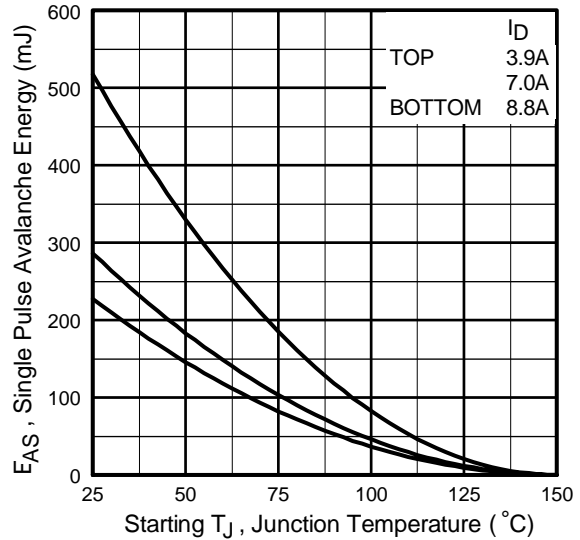
**Fig 12.** On-Resistance Vs. Drain Current



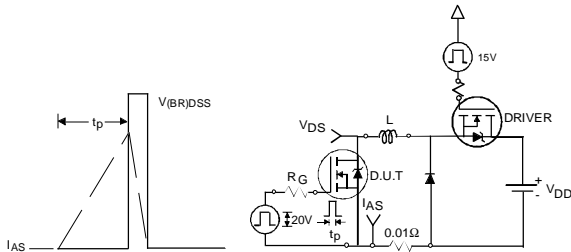
**Fig 13.** On-Resistance Vs. Gate Voltage



**Fig 13a&b.** Basic Gate Charge Test Circuit and Waveform



**Fig 14c.** Maximum Avalanche Energy Vs. Drain Current



**Fig 14a&b.** Unclamped Inductive Test circuit and Waveforms

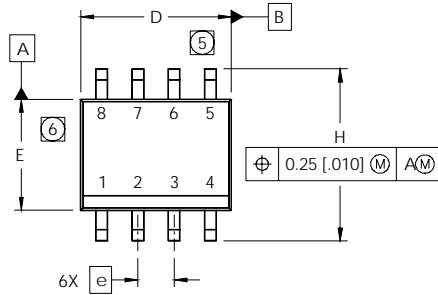




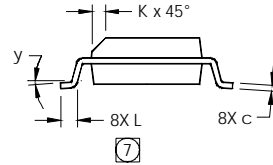
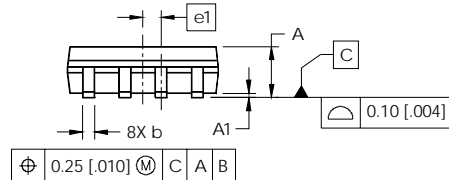
# IRF7466PbF

## SO-8 Package Outline

Dimensions are shown in millimeters (inches)

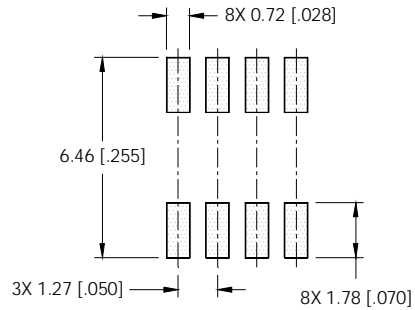


DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.0532	.0688	1.35	1.75
A1	.0040	.0098	0.10	0.25
b	.013	.020	0.33	0.51
c	.0075	.0098	0.19	0.25
D	.189	.1968	4.80	5.00
E	.1497	.1574	3.80	4.00
e	.050 BASIC		1.27 BASIC	
e1	.025 BASIC		0.635 BASIC	
H	.2284	.2440	5.80	6.20
K	.0099	.0196	0.25	0.50
L	.016	.050	0.40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



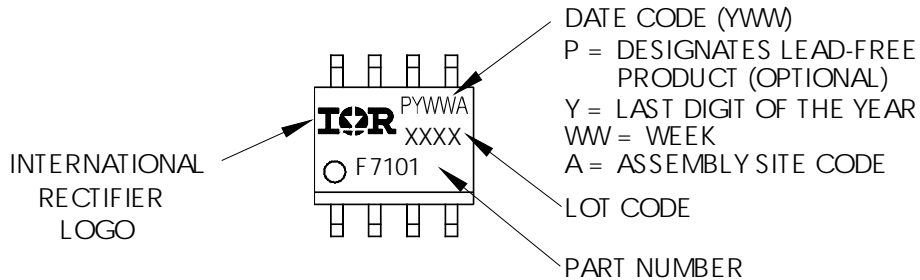
- NOTES:
1. DIMENSIONING & TOLERANCING PER ASME Y14.5M-1994.
  2. CONTROLLING DIMENSION: MILLIMETER
  3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
  4. OUTLINE CONFORMS TO JEDEC OUTLINE MS-012AA
  - ⑤ DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.15 [0.006].
  - ⑥ 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 A SUBSTRATE.

### FOOTPRINT



## SO-8 Part Marking

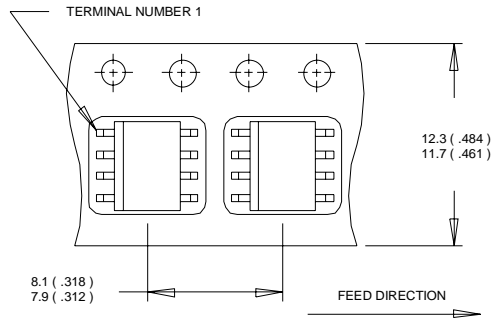
EXAMPLE: THIS IS AN IRF7101 (MOSFET)



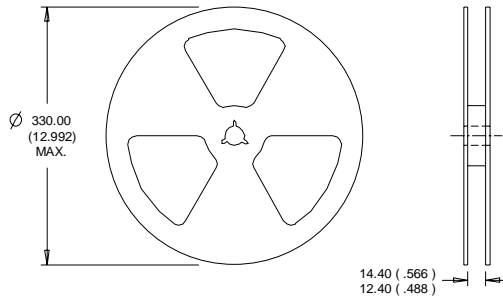
# IRF7466PbF

## SO-8 Tape and Reel

Dimensions are shown in millimeters (inches)



- 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  $T_J = 25^\circ\text{C}$ ,  $L = 5.9\text{mH}$   
 $R_G = 25\Omega$ ,  $I_{AS} = 8.8\text{A}$ .
- ③ Pulse width  $\leq 400\mu\text{s}$ ; duty cycle  $\leq 2\%$ .
- ④ When mounted on 1 inch square copper board,  $t < 10$  sec

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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