IRF7324PBF Datasheet

DiGi Electronics Part Number	IRF7324PBF-DG
Manufacturer	Infineon Technologies
Manufacturer Product Number	IRF7324PBF
Description	MOSFET 2P-CH 20V 9A 8SO
Detailed Description	Mosfet Array 20V 9A 2W Surface Mount 8-SO

https://www.DiGi-Electronics.com

Tel: +00 852-30501935

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
IRF7324PBF	Infineon Technologies
Series:	Product Status:
HEXFET®	Discontinued at Digi-Key
Technology:	Configuration:
MOSFET (Metal Oxide)	2 P-Channel (Dual)
FET Feature:	Drain to Source Voltage (Vdss):
Logic Level Gate	20V
Current - Continuous Drain (Id) @ 25°C:	Rds On (Max) @ Id, Vgs:
9A	18mOhm @ 9A, 4.5V
Vgs(th) (Max) @ Id:	Gate Charge (Qg) (Max) @ Vgs:
1V @ 250µA	63nC @ 5V
Input Capacitance (Ciss) (Max) @ Vds:	Power - Max:
2940pF @ 15V	2W
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
8-SOIC (0.154", 3.90mm Width)	8-SO
Base Product Number:	
IRF732	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.29.0095	

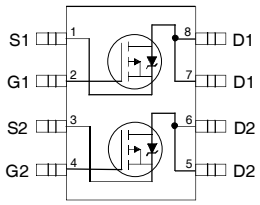
International
IOR Rectifier

PD - 95460

IRF7324PbF

HEXFET® Power MOSFET

- Trench Technology
- Ultra Low On-Resistance
- Dual P-Channel MOSFET
- Low Profile (<1.1mm)
- Available in Tape & Reel
- 2.5V Rated
- Lead-Free



Top View

V_{DSS} = -20V

$R_{DS(on)}$ = 0.018Ω

Description

New trench HEXFET® Power MOSFETs from International Rectifier utilize advanced processing techniques to achieve extremely low on-resistance per silicon area. This benefit, combined with the ruggedized device design that HEXFET power MOSFETs are well known for, provides the designer with an extremely efficient and reliable device for use in battery and load management applications.

SO-8

Absolute Maximum Ratings

	Parameter	Max.	Units
V_{DS}	Drain-Source Voltage	-20	V
I_D @ T_A = 25°C	Continuous Drain Current, V_{GS} @ -4.5V	-9.0	A
I_D @ T_A = 70°C	Continuous Drain Current, V_{GS} @ -4.5V	-7.1	
I_{DM}	Pulsed Drain Current①	-71	
P_D @T_A = 25°C	Maximum Power Dissipation③	2.0	W
P_D @T_A = 70°C	Maximum Power Dissipation③	1.3	W
	Linear Derating Factor	16	mW/°C
V_{GS}	Gate-to-Source Voltage	± 12	V
T_J , T_{STG}	Junction and Storage Temperature Range	-55 to + 150	°C

Thermal Resistance

	Parameter	Max.	Units	
$R_{\theta JA}$	Maximum Junction-to-Ambient ③	62.5		°C/W

IRF7324PbF

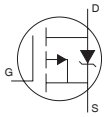
International
IOR Rectifier

Electrical Characteristics @ T_J = 25°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 = -250µA
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	——	-0.02	——	V/°C	Reference to 25°C, I_D = -1mA
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	——	——	0.018	Ω	V_{GS} = -4.5V, I_D = -9.0A ②
		——	——	0.026		V_{GS} = -2.5V, I_D = -7.7A ②
$V_{GS(th)}$	Gate Threshold Voltage	-0.45	——	-1.0	V	V_{DS} = V_{GS}, I_D = -250µA
g_{fs}	Forward Transconductance	19	——	——	S	V_{DS} = -10V, I_D = -9.0A
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°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	——	42	63	nC	I_D = -9.0A
Q_{gs}	Gate-to-Source Charge	——	7.1	11		V_{DS} = -16V
Q_{gd}	Gate-to-Drain ("Miller") Charge	——	12	18		V_{GS} = -5.0V
$t_{d(on)}$	Turn-On Delay Time	——	17	——	ns	V_{DD} = -10V
t_r	Rise Time	——	36	——		I_D = -1.0A
$t_{d(off)}$	Turn-Off Delay Time	——	170	——		R_G = 6.0Ω
t_f	Fall Time	——	190	——		R_D = 10Ω ②
C_{iss}	Input Capacitance	——	2940	——	pF	V_{GS} = 0V
C_{oss}	Output Capacitance	——	630	——		V_{DS} = -15V
C_{rss}	Reverse Transfer Capacitance	——	420	——		f = 1.0MHz

Source-Drain Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	–––	–––	-2.0	A	MOSFET symbol showing the integral reverse p-n junction diode.
I_{SM}	Pulsed Source Current (Body Diode) ①	–––	–––	-71		
V_{SD}	Diode Forward Voltage	——	——	-1.2	V	T_J = 25°C, I_S = -2.0A, V_{GS} = 0V ②
t_{rr}	Reverse Recovery Time	——	180	270	ns	T_J = 25°C, I_F = -2.0A
Q_{rr}	Reverse Recovery Charge	——	300	450	nC	di/dt = -100A/µs ②



Notes:

① Repetitive rating; pulse width limited by max. junction temperature.

② Pulse width ≤ 300µs; duty cycle ≤ 2%.

③ Surface mounted on FR-4 board, t ≤ 10sec.

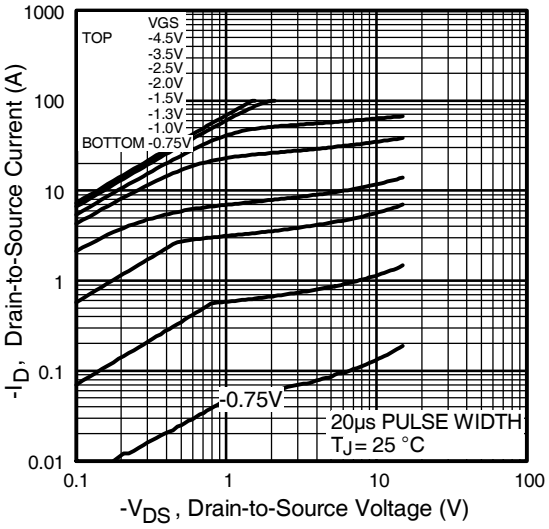


Fig 1. Typical Output Characteristics

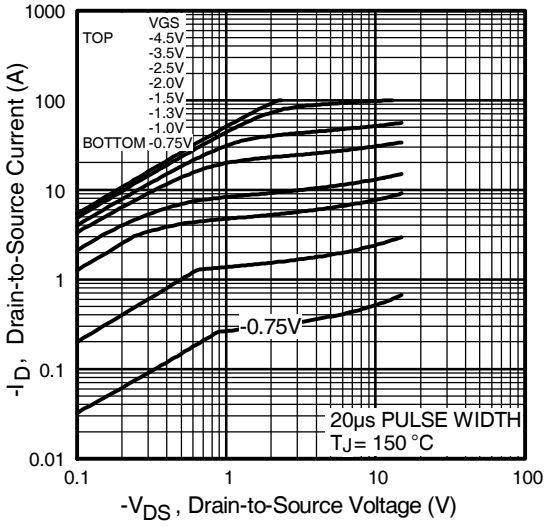


Fig 2. Typical Output Characteristics

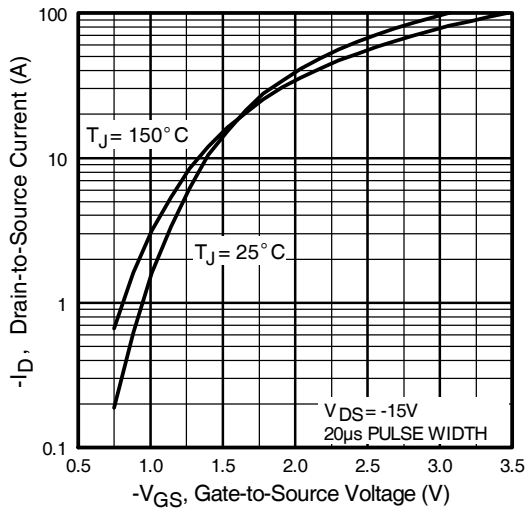


Fig 3. Typical Transfer Characteristics

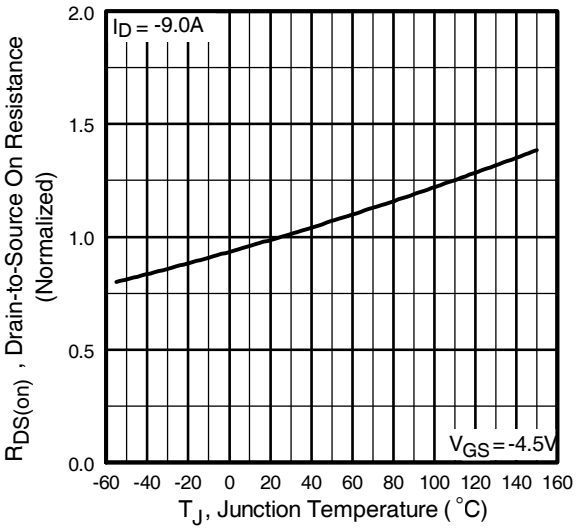


Fig 4. Normalized On-Resistance Vs. Temperature

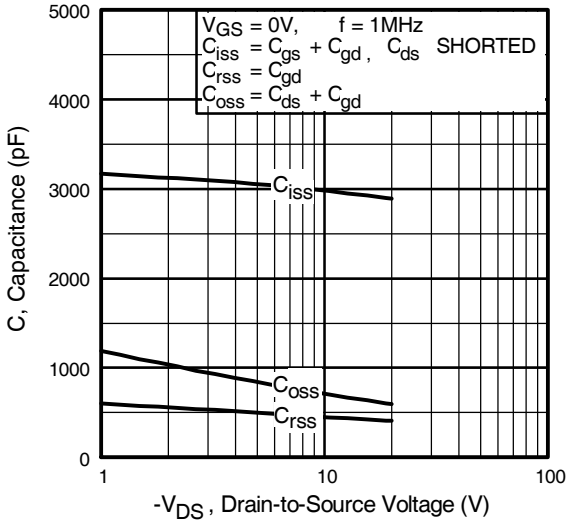


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

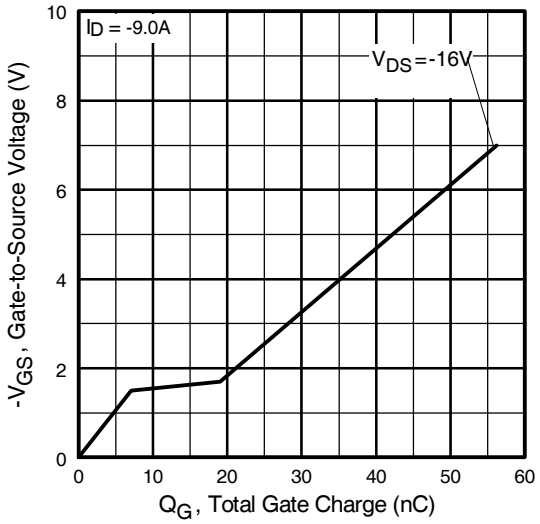


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

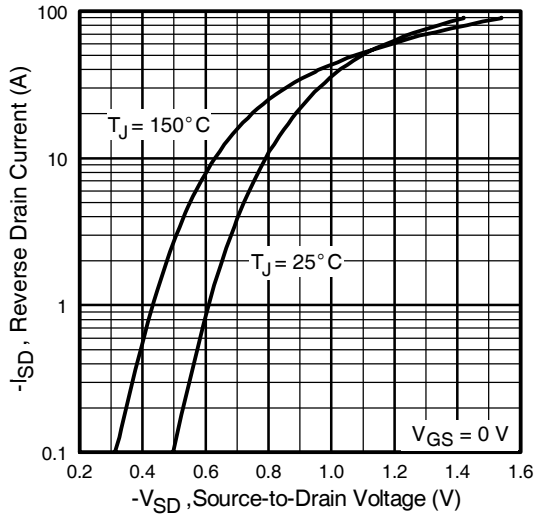


Fig 7. Typical Source-Drain Diode Forward Voltage

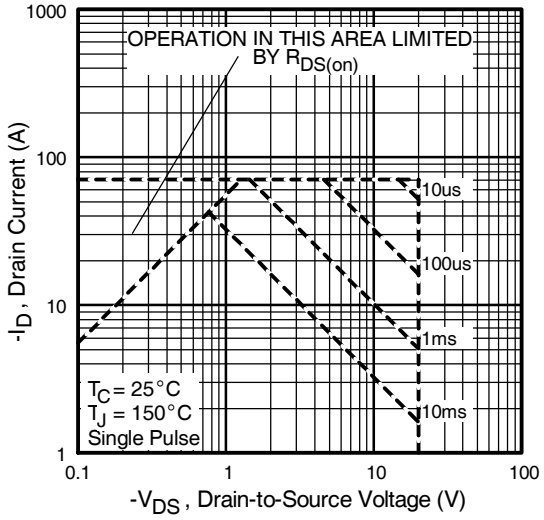


Fig 8. Maximum Safe Operating Area

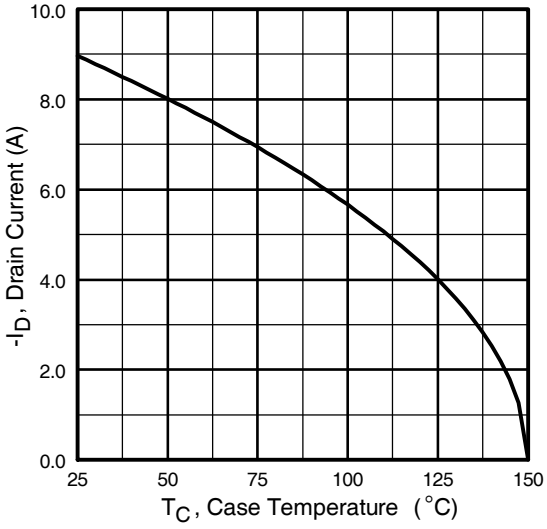


Fig 9. Maximum Drain Current Vs. Case Temperature

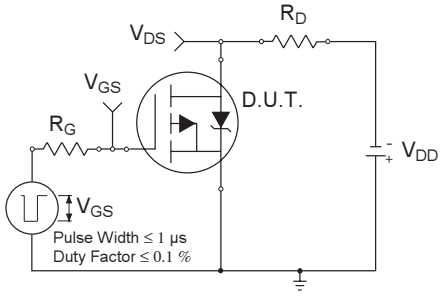


Fig 10a. Switching Time Test Circuit

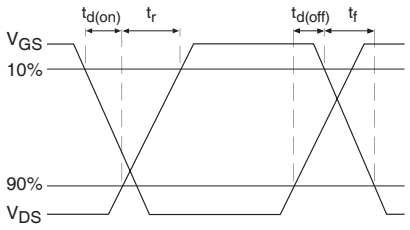


Fig 10b. Switching Time Waveforms

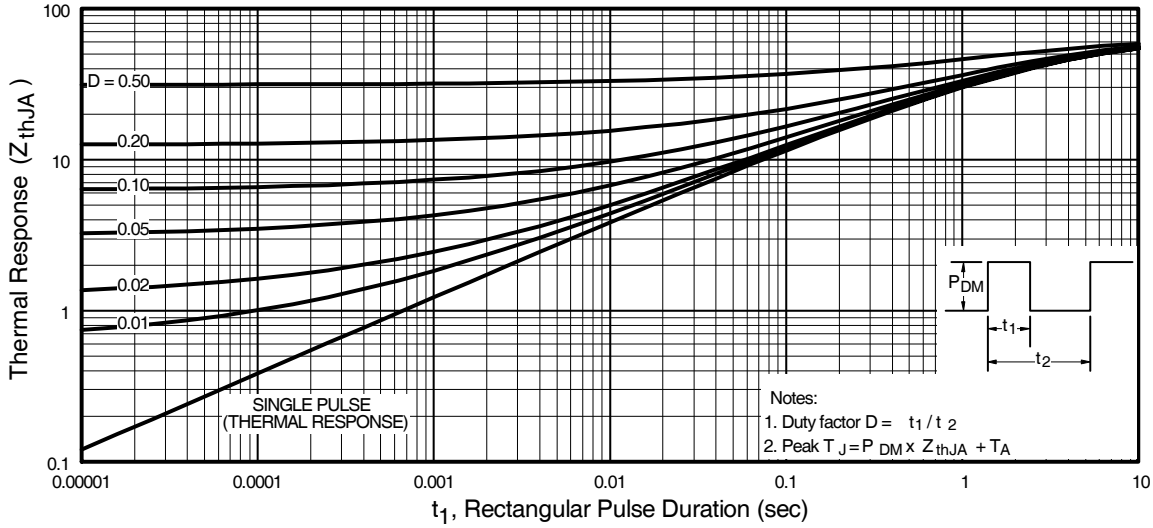


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

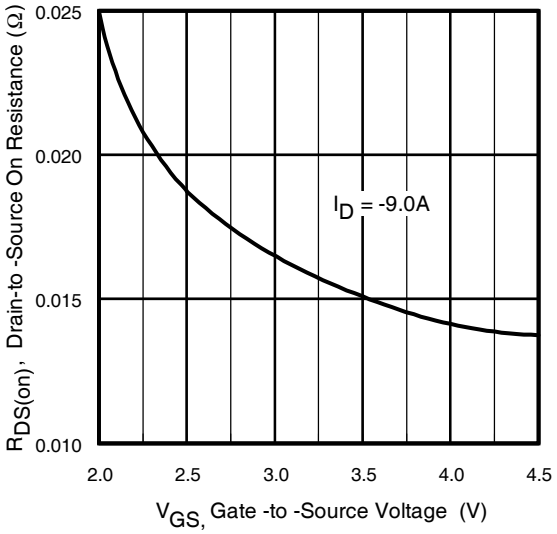


Fig 12. Typical On-Resistance Vs. Gate Voltage

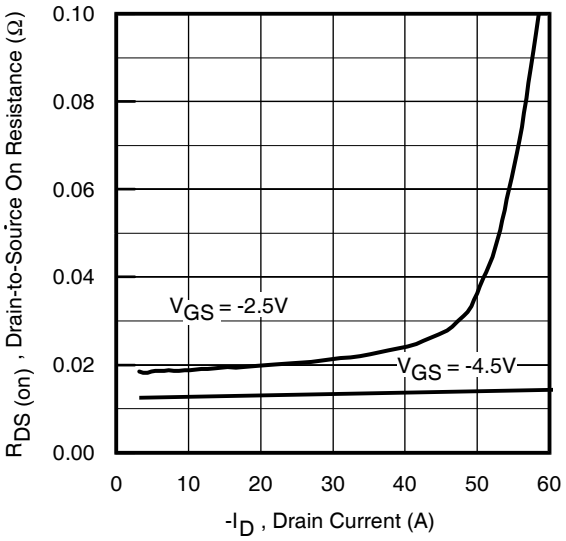


Fig 13. Typical On-Resistance Vs. Drain Current

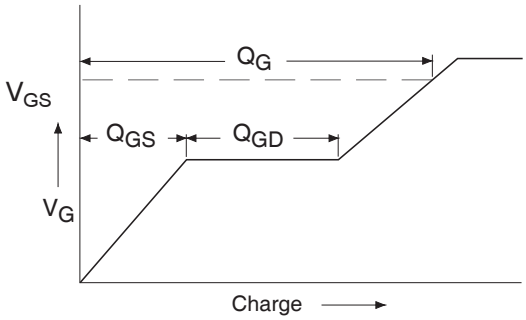


Fig 14a. Basic Gate Charge Waveform

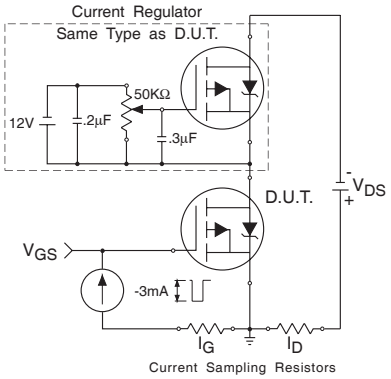
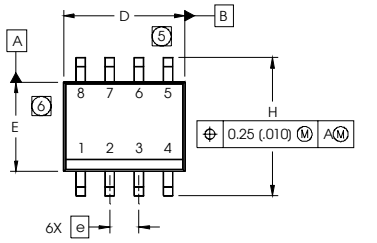


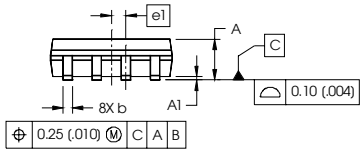
Fig 14b. Gate Charge Test Circuit

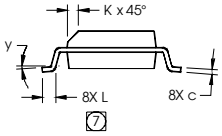
SO-8 Package Outline

Dimensions are shown in milimeters (inches)



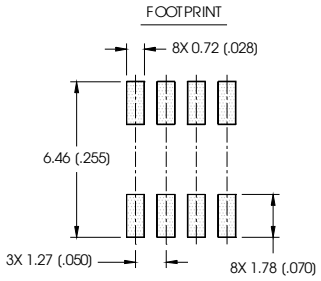
DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.0532	.0688	1.35	1.75
A1	.0040	.0098	0.10	0.25
b	.013	.020	0.33	0.51
c	.0075	.0098	0.19	0.25
D	.189	.1968	4.80	5.00
E	.1497	.1574	3.80	4.00
e	.050 BASIC		1.27 BASIC	
e1	.025 BASIC		0.635 BASIC	
H	.2284	.2440	5.80	6.20
K	.0099	.0196	0.25	0.50
L	.016	.050	0.40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





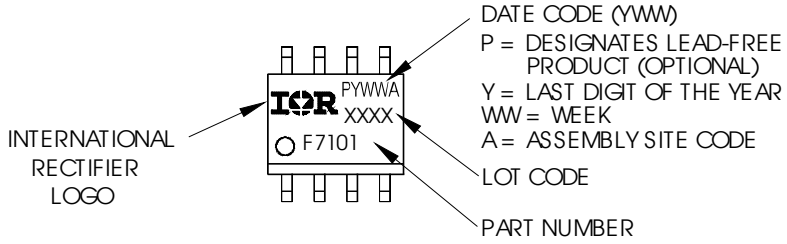
NOTES:

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 (.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.



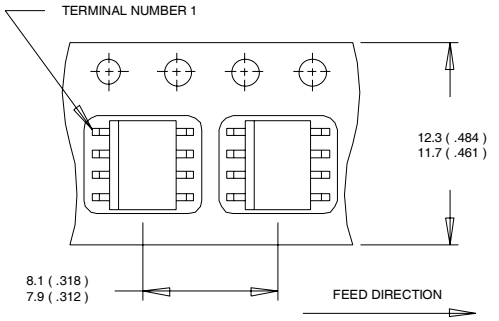
SO-8 Part Marking Information (Lead-Free)

EXAMPLE: THIS IS AN IRF7101 (MOSFET)

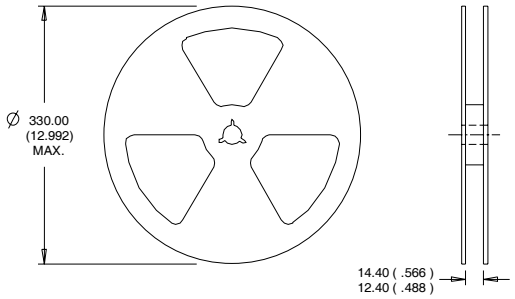


SO-8 Tape and Reel

Dimensions are shown in milimeters (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.

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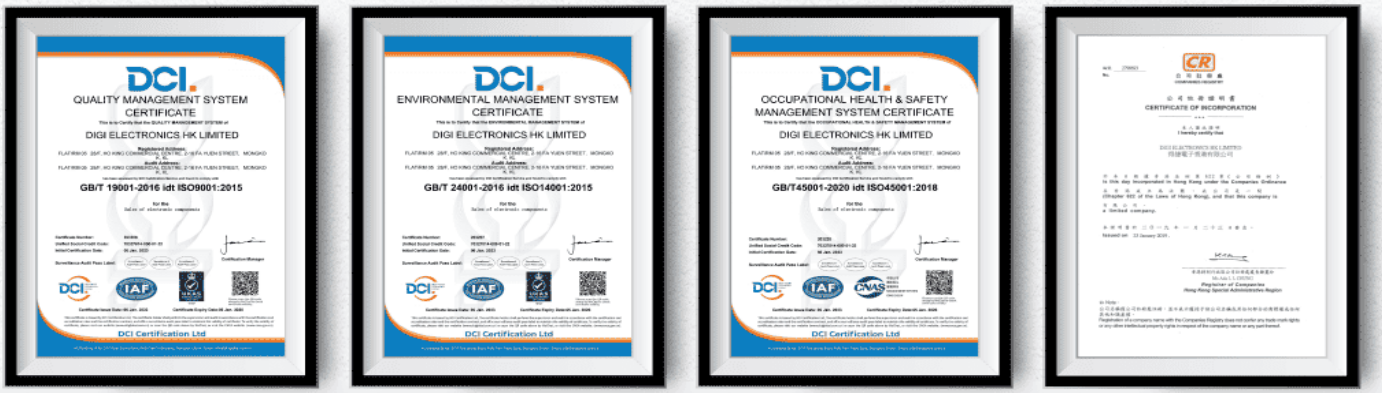

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

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