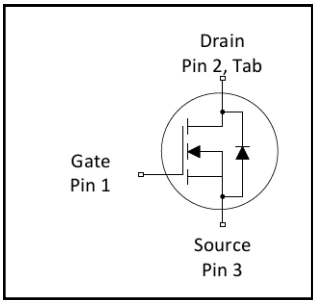
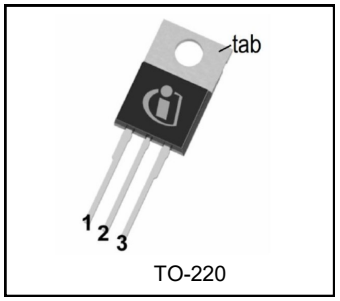
IRLB4132PbF

$V_{(BR)DSS}$	30V
$R_{DS(on)}$ max. (@ V_{GS} = 10V)	3.5mΩ
(@ V_{GS} = 4.5V)	4.5mΩ
$Q_{g\ (typical)}$	36nC
$I_{D\ (Silicon\ Limited)}$	150A④
$I_{D\ (Package\ Limited)}$	78A





G	D	S
Gate	Drain	Source

Applications

- Optimized for UPS/Inverter Applications
- Low Voltage Power Tools

Benefits

- Best in Class Performance for UPS/Inverter Applications
- Very Low $R_{DS(ON)}$ at 4.5V V_{GS}
- Ultra-Low Gate Impedance
- Fully Characterized Avalanche Voltage and Current
- Lead Free, RoHS Compliant

Base part number	Package Type	Standard Pack		Orderable Part Number
		Form	Quantity	
IRLB4132PbF	TO-220	Tube	50	IRLB4132PbF

Absolute Maximum Ratings

Symbol	Parameter	Max.	Units
V_{DS}	Drain-to-Source Voltage	30	V
V_{GS}	Gate-to-Source Voltage	± 20	V
I_D @ T_C = 25°C	Continuous Drain Current, V_{GS} @ 10V (Silicon Limited)	150④	A
I_D @ T_C = 100°C	Continuous Drain Current, V_{GS} @ 10V (Silicon Limited)	100	
I_D @ T_C = 25°C	Continuous Drain Current, V_{GS} @ 10V (Package Limited)	78	
I_{DM}	Pulsed Drain Current ①	620	
P_D @T_C = 25°C	Maximum Power Dissipation ⑥	140	W
P_D @T_C = 100°C	Maximum Power Dissipation ⑥	68	W
	Linear Derating Factor	0.90	W/°C
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to + 175	°C
	Soldering Temperature, for 10 seconds (1.6mm from case)	300	
	Mounting torque, 6-32 or M3 screw	10 lbf•in (1.1N•m)	

Thermal Resistance

Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JC}$	Junction-to-Case ⑥	—	1.11	°C/W
$R_{\theta CS}$	Case-to-Sink, Flat, Greased Surface	0.50	—	
$R_{\theta JA}$	Junction-to-Ambient ⑤	—	62	

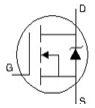
Static @ T_J = 25°C (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
BV_{DSS}	Drain-to-Source Breakdown Voltage	30	—	—	V	V_{GS} = 0V, I_D = 250µA
$\Delta BV_{DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	17	—	mV/°C	Reference to 25°C, I_D = 1mA ①
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	2.5	3.5	mΩ	V_{GS} = 10V, I_D = 40A ③
		—	3.5	4.5		V_{GS} = 4.5V, I_D = 32A ③
$V_{GS(th)}$	Gate Threshold Voltage	1.35	1.8	2.35	V	V_{DS} = V_{GS}, I_D = 100µA
$\Delta V_{GS(th)}/\Delta T_J$	Gate Threshold Voltage Coefficient	—	-7.7	—	mV/°C	
I_{DSS}	Drain-to-Source Leakage Current	—	—	1.0	µA	V_{DS} =24 V, V_{GS} = 0V
		—	—	100		V_{DS} =24V,V_{GS} = 0V,T_J =125°C
I_{GSS}	Gate-to-Source Forward Leakage	—	—	100	nA	V_{GS} = 20V
	Gate-to-Source Reverse Leakage	—	—	-100		V_{GS} = -20V
gfs	Forward Transconductance	190	—	—	S	V_{DS} = 15V, I_D =32A
Q_g	Total Gate Charge	—	36	54	nC	V_{DS} = 15V V_{GS} = 4.5V I_D = 32A
Q_{gs1}	Pre-Vth Gate-to-Source Charge	—	9.1	—		
Q_{gs2}	Post-Vth Gate-to-Source Charge	—	4.2	—		
Q_{gd}	Gate-to-Drain Charge	—	13	—		
Q_{godr}	Gate Charge Overdrive	—	13	—		
Q_{sw}	Switch Charge (Qgs2 + Qgd)	—	17.2	—		
Q_{oss}	Output Charge	—	21	—	nC	V_{DS} = 16V, V_{GS} = 0V
R_G	Gate Resistance	—	0.85	1.5	Ω	
$t_{d(on)}$	Turn-On Delay Time	—	23	—	ns	V_{DD} = 15V I_D = 32A R_G= 1.8Ω V_{GS} = 4.5V③
t_r	Rise Time	—	92	—		
$t_{d(off)}$	Turn-Off Delay Time	—	25	—		
t_f	Fall Time	—	36	—		
C_{iss}	Input Capacitance	—	5110	—	pF	V_{GS} = 0V V_{DS} = 15V f = 1.0MHz
C_{oss}	Output Capacitance	—	960	—		
C_{rss}	Reverse Transfer Capacitance	—	440	—		

Avalanche Characteristics

$E_{AS\ (Thermally\ limited)}$	Single Pulse Avalanche Energy ②	310	mJ
$E_{AS\ (tested)}$	Single Pulse Avalanche Energy Tested Value ⑦	900	
I_{AR}	Avalanche Current ①	32	A
E_{AR}	Repetitive Avalanche Energy ①	14	mJ

Diode Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)①	—	—	150④	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	620		
V_{SD}	Diode Forward Voltage	—	—	1.0	V	T_J = 25°C,I_S = 32A,V_{GS} = 0V ③
t_{rr}	Reverse Recovery Time	—	29	44	ns	T_J = 25°C I_F = 32A ,V_{DD}=15V
Q_{rr}	Reverse Recovery Charge	—	49	74	nC	di/dt = 200A/µs ③

Notes:

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

② Limited by T_{Jmax}, starting T_J = 25°C, L = 0.61mH, R_G = 25Ω, I_{AS} = 32A,

③ Pulse width ≤ 400µs; duty cycle ≤ 2%.

④ Calculated continuous current based on maximum allowable junction temperature. Package limitation current limit is 78A

⑤ When mounted on 1" square PCB (FR-4 or G-10 Material). For recommended footprint and soldering techniques refer to application note #AN-994.

⑥ R_θ is measured at T_J approximately 90°C.

⑦ Starting T_J =25°C, L=0.50mH, R_G = 25Ω, I_{AS} = 60A, V_{DD} = 25V. (Statistical Limit)

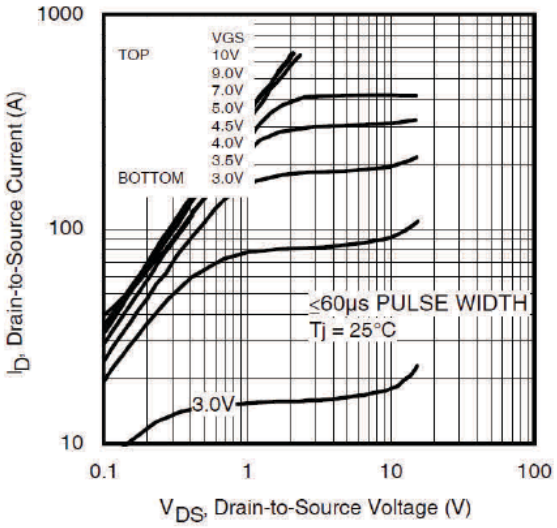


Fig. 1 Typical Output Characteristics

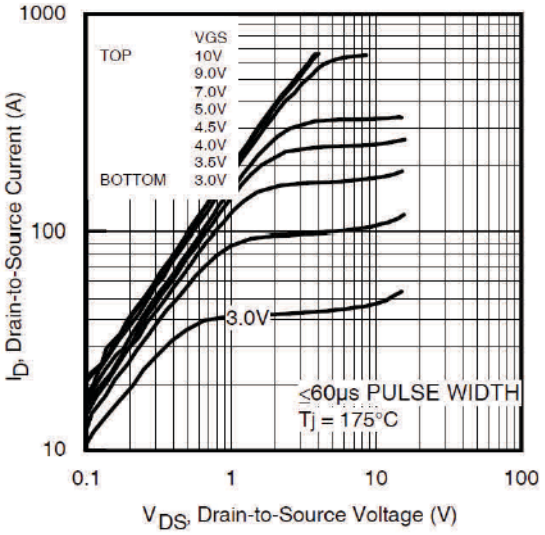


Fig. 2 Typical Output Characteristics

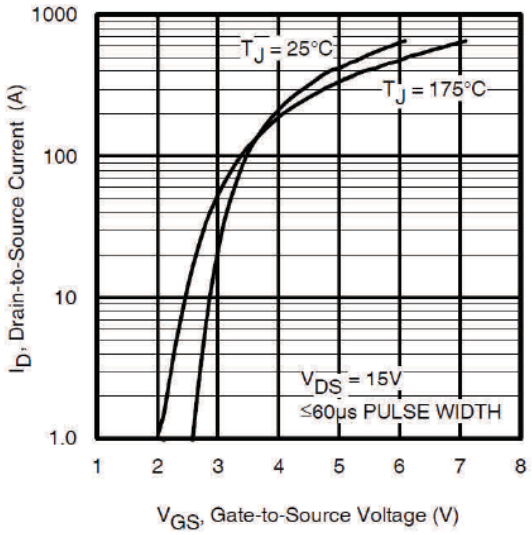


Fig. 3 Typical Transfer Characteristics

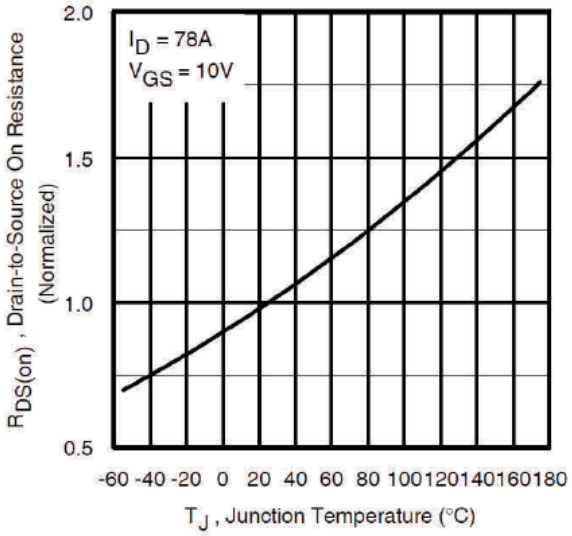


Fig. 4 Normalized On-Resistance vs. Temperature

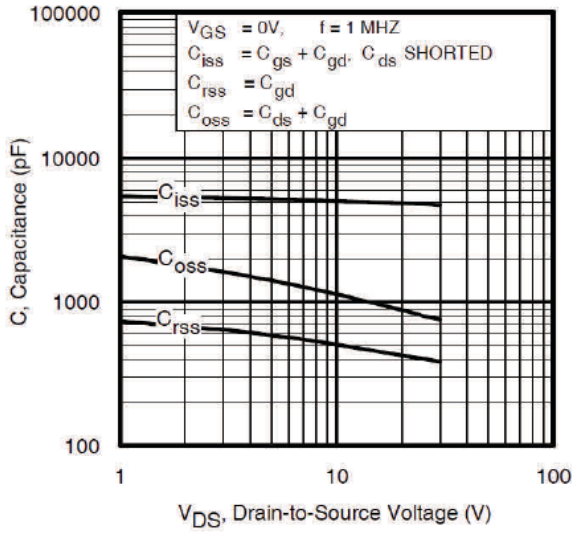


Fig 5. Typical Capacitance vs. Drain-to-Source Voltage

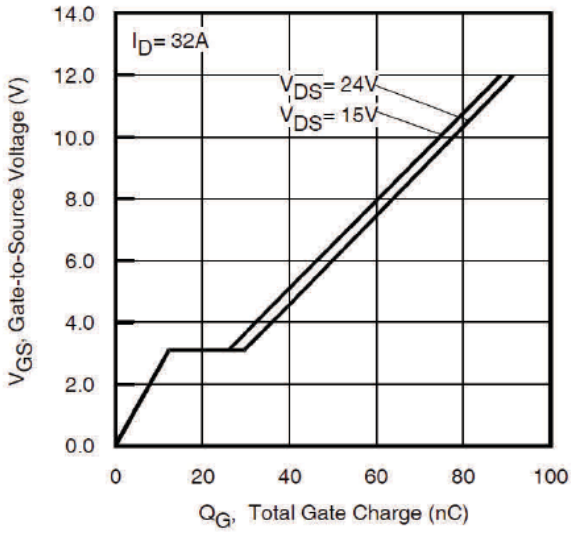


Fig 6. Typical Gate Charge vs. Gate-to-Source Voltage

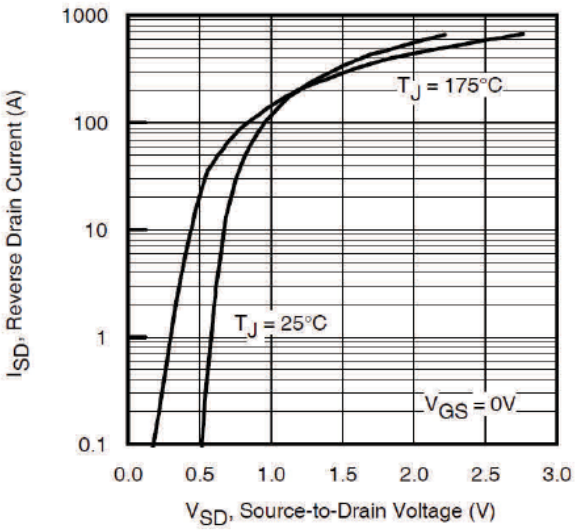


Fig. 7 Typical Source-to-Drain Diode Forward Voltage

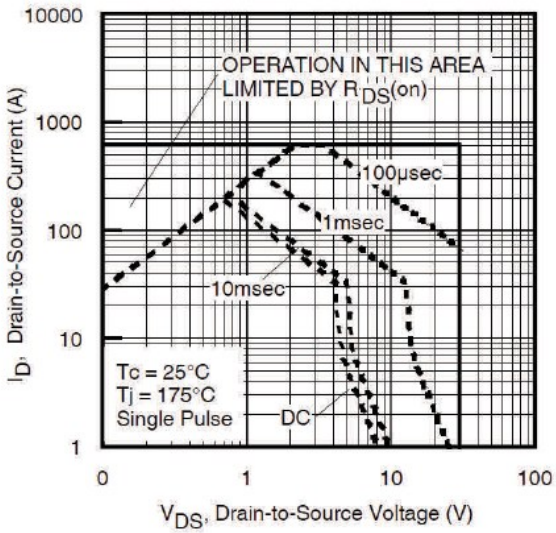


Fig 8. Maximum Safe Operating Area

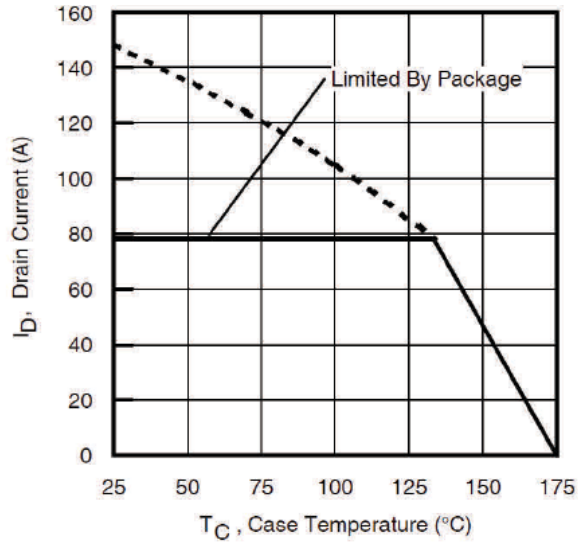


Fig 9. Maximum Drain Current vs. Case Temperature

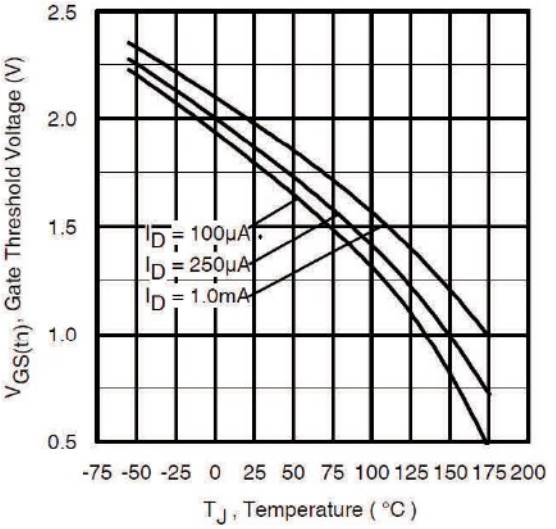


Fig 10. Threshold Voltage vs. Temperature

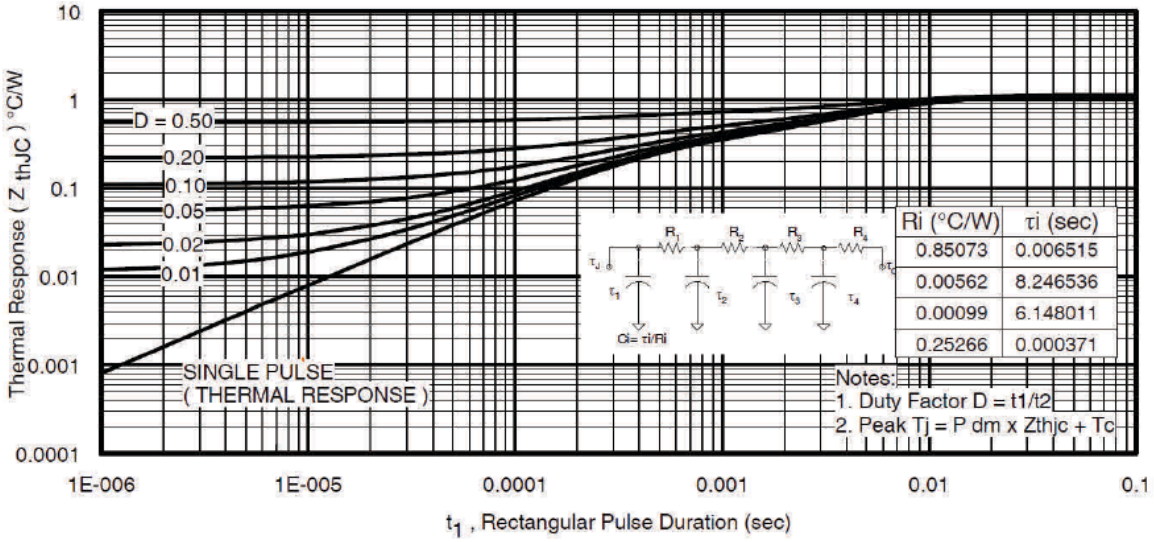


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Case

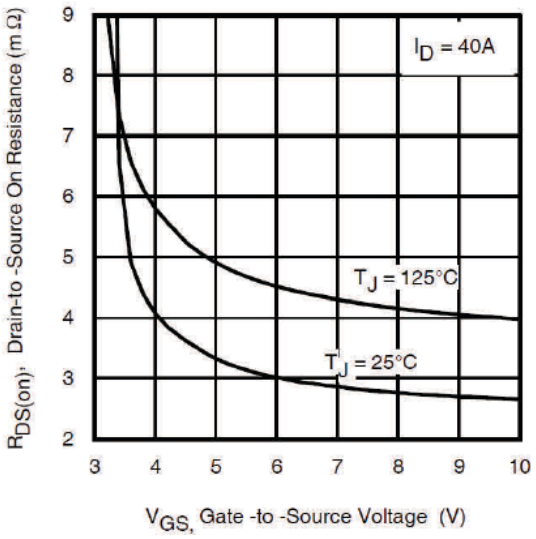


Fig 12. Typical On-Resistance vs. Gate Voltage

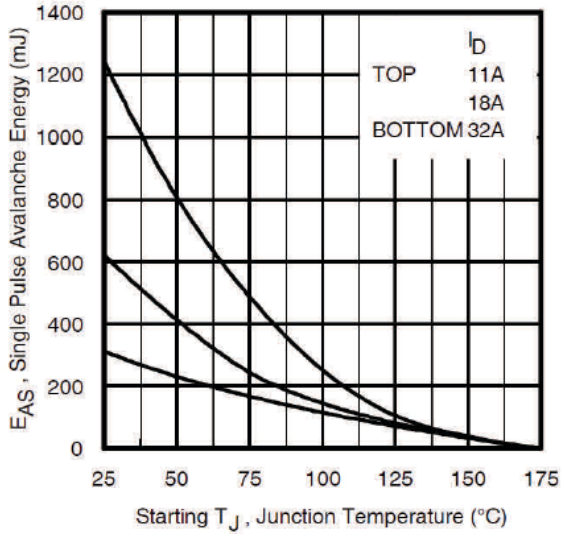


Fig. 13 - Maximum Avalanche Energy vs. Drain Current

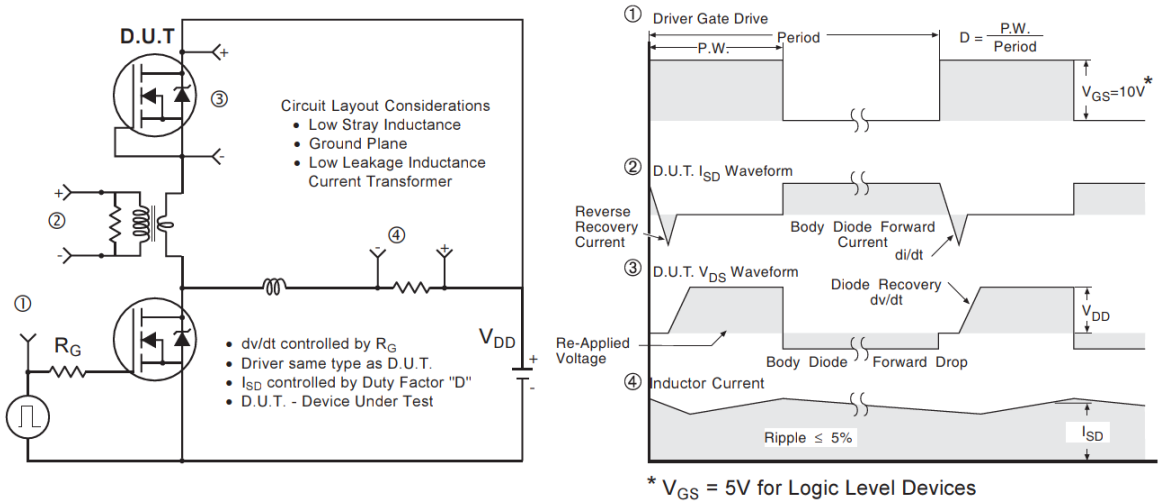


Fig 14. Peak Diode Recovery dv/dt Test Circuit for N-Channel HEXFET® Power MOSFETs

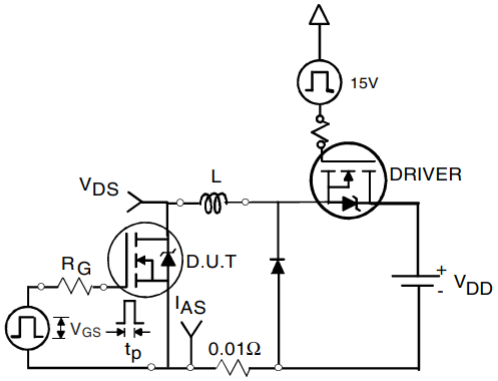


Fig 15a. Unclamped Inductive Test Circuit

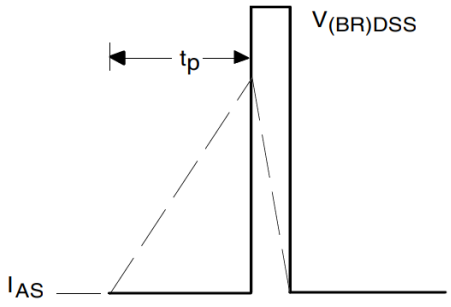


Fig 15b. Unclamped Inductive Waveforms

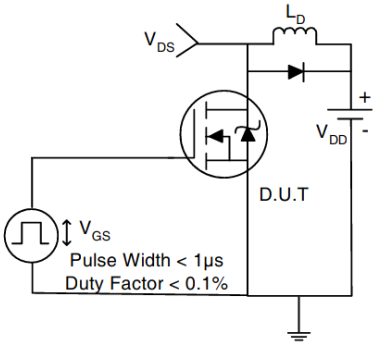


Fig 16a. Switching Time Test Circuit

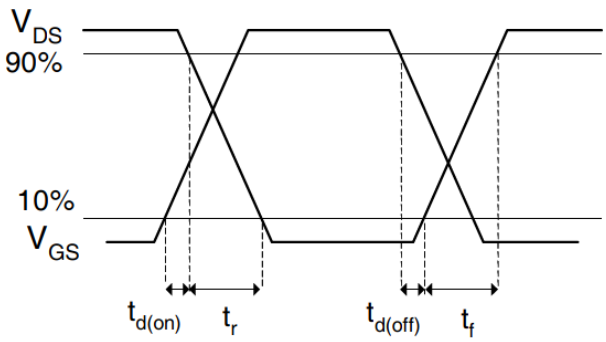


Fig 16b. Switching Time Waveforms

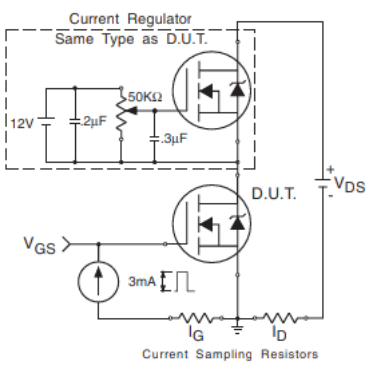


Fig 17a. Gate Charge Test Circuit

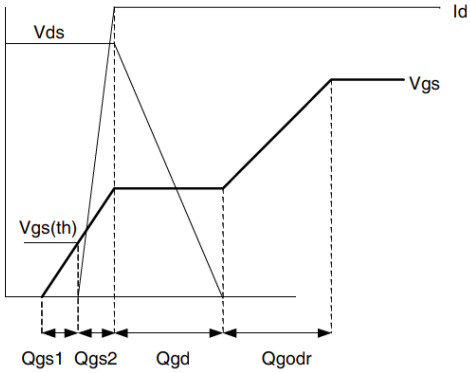
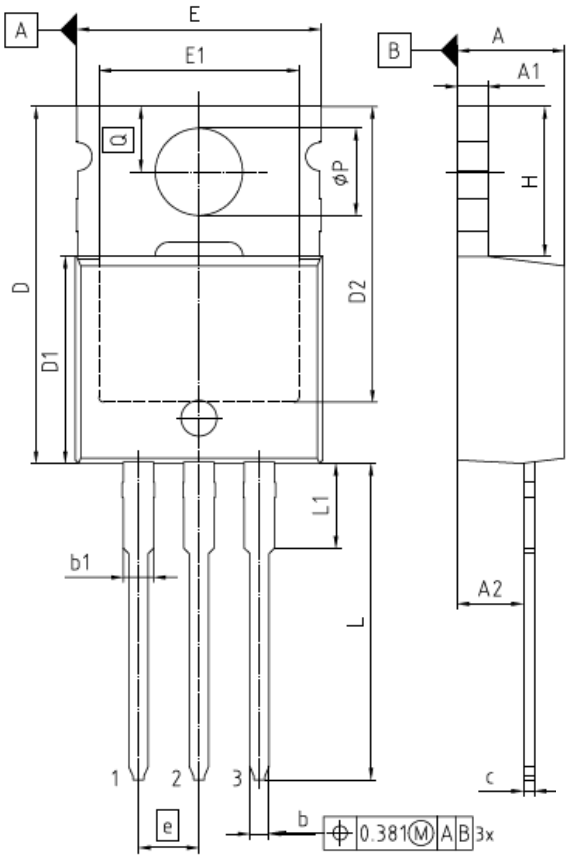


Fig 17b. Gate Charge Waveform

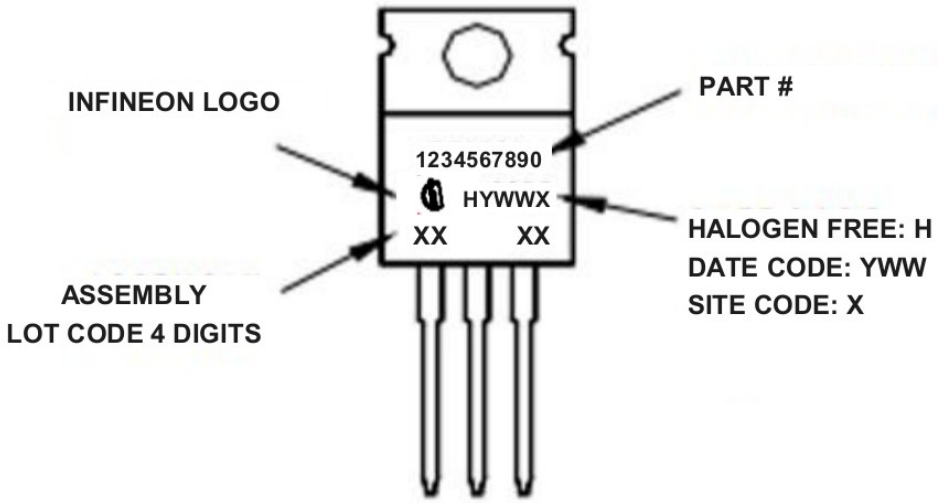
TO-220 Package Outline (Dimensions are shown in millimeters (inches))



NOTES:
DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSION OR GATE BURRS
GATE BURRS ARE LESS THAN 0.5 mm

PACKAGE - GROUP NUMBER:	PG-TO220-3-U05	
DIMENSIONS	MILLIMETERS	
	MIN.	MAX.
A	3.56	4.83
A1	1.14	1.40
A2	2.03	2.92
b	0.38	1.01
b1	1.14	1.78
c	0.36	0.61
D	14.22	16.51
D1	8.38	9.20
D2	11.68	12.88
E	9.65	10.67
E1	6.86	8.89
e	2.54	
N	3	
H	5.84	6.86
L	12.70	14.73
L1	3.56	4.06
øP	3.54	4.08
Q	2.54	3.42

TO-220 Part Marking Information



TO-220 packages are not recommended for Surface Mount Application.

Qualification Information†

Qualification Level	Industrial (per JEDEC JESD47F) ††	
Moisture Sensitivity Level	TO-220	N/A
RoHS Compliant	Yes	

† Qualification standards can be found at International Rectifier's web site: https://www.infineon.com/

†† Applicable version of JEDEC standard at the time of product release.

Revision History

Date	Rev.	Comments
2026-09-22	2.1	• Update datasheet to Infineon format • Updated Package Outline and Part marking –page 7 • Added disclaimer on last page.

Trademarks

All referenced product or service names and trademarks are the property of their respective owners.

Published by Infineon Technologies AG, Am Campeon 1-15, 85579 Neubiberg, Germany
Copyright (c) 2026 Infineon Technologies AG and its affiliates. All Rights Reserved.

Important notice

The product is not developed and released for series supply by Infineon.

Subject to the development and release of the product for series supply by Infineon, the technical specifications of the product are set forth in the relevant final product data sheet provided by Infineon.

Infineon reserves the right to change all information given in this document at any time without notice.

Products which may also include samples and may be comprised of hardware or software or both ("Product(s)") are sold or provided and delivered by Infineon Technologies AG and its affiliates ("Infineon") subject to the terms and conditions of the frame supply contract or other written agreement(s) executed by a customer and Infineon or, in the absence of the foregoing, the applicable Sales Conditions of Infineon. General terms and conditions of a customer or deviations from applicable Sales Conditions of Infineon shall only be binding for Infineon if and to the extent Infineon has given its express written consent.

For the avoidance of doubt, Infineon disclaims all warranties of non-infringement of third-party rights and implied warranties such as warranties of fitness for a specific use/purpose or merchantability.

Infineon shall not be responsible for any information with respect to samples, the application or customer's specific use of any Product or for any examples or typical values given in this document.

The data contained in this document is exclusively intended for technically qualified and skilled customer representatives. It is the responsibility of the customer to evaluate the suitability of the Product for the intended application and the customer's specific use and to verify all relevant technical data contained in this document in the intended application and the customer's specific use. The customer is responsible for properly designing, programming, and testing the functionality and safety of the intended application, as well as complying with any legal requirements related to its use.

Unless otherwise explicitly approved by Infineon, Products may not be used in any application where a failure of the Products or any consequences of the use thereof can reasonably be expected to result in personal injury. However, the foregoing shall not

prevent the customer from using any Product in such fields of use that Infineon has explicitly designed and sold it for, provided that the overall responsibility for the application lies with the customer.

Infineon expressly reserves the right to use its content for commercial text and data mining (TDM) according to applicable laws, e.g. Section 44b of the German Copyright Act (UrhG).

If the Product includes security features: Because no computing device can be absolutely secure, and despite security measures implemented in the Product, Infineon does not guarantee that the Product will be free from intrusion, data theft or loss, or other breaches ("Security Breaches"), and Infineon shall have no liability arising out of any Security Breaches.

If this document includes or references software:

The software is owned by Infineon under the intellectual property laws and treaties of the United States, Germany, and other countries worldwide. All rights reserved. Therefore, you may use the software only as provided in the software license agreement accompanying the software. If no software license agreement applies, Infineon hereby grants you a personal, non-exclusive, non-transferable license (without the right to sublicense) under its intellectual property rights in the software (a) for software provided in source code form, to modify and reproduce the software solely for use with Infineon hardware products, only internally within your organization, and (b) to distribute the software in binary code form externally to end users, solely for use on Infineon hardware products. Any other use, reproduction, modification, translation, or compilation of the software is prohibited.

For further information on the Product, technology, delivery terms and conditions, and prices, please contact your nearest Infineon office or visit https://www.infineon.com.