

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[International Rectifier \(Infineon Technologies Americas Corp.\)
IRFU6215PBF](#)

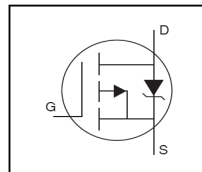
For any questions, you can email us directly:

sales@integrated-circuit.com

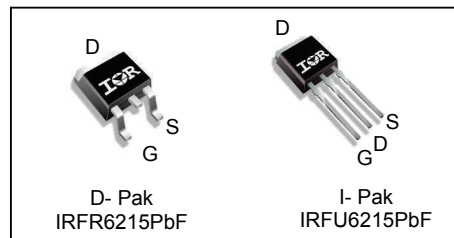
IRFR6215PbF IRFU6215PbF

- P-Channel
- 175°C Operating Temperature
- Surface Mount (IRFR6215)
- Straight Lead (IRFU6215)
- Advanced Process Technology
- Fast Switching
- Fully Avalanche Rated
- Lead-Free

HEXFET® Power MOSFET



V_{DSS}	-150V
$R_{DS(on)}$	0.295Ω
I_D	-13A



G	D	S
Gate	Drain	Source

Description

Fifth Generation HEXFETs from International Rectifier utilize advanced processing techniques to achieve the lowest possible on-resistance per silicon area. This benefit, combined with the fast switching speed and ruggedized device design that HEXFET Power MOSFETs are well known for, provides the designer with an extremely efficient device for use in a wide variety of applications.

The D-PAK is designed for surface mounting using vapor phase, infrared, or wave soldering techniques. The straight lead version (IRFU series) is for through-hole mounting applications. Power dissipation levels up to 1.5 watts are possible in typical surface mount applications.

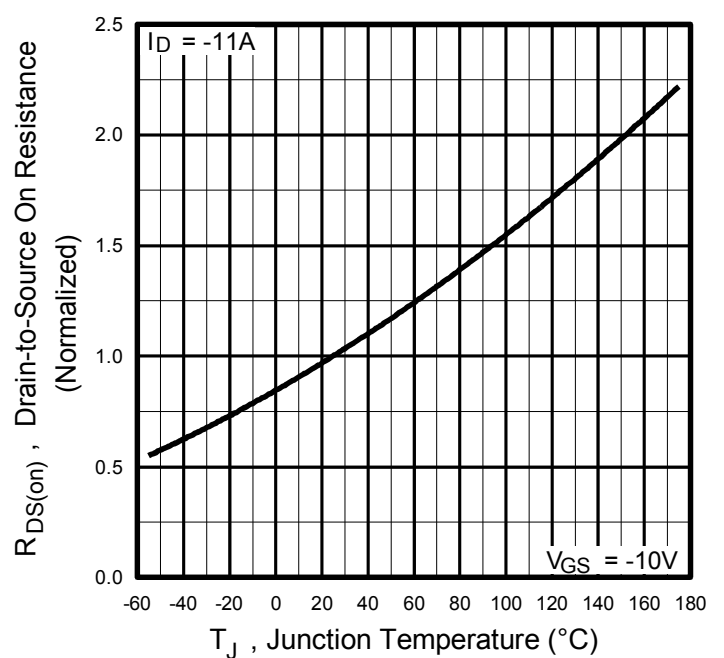
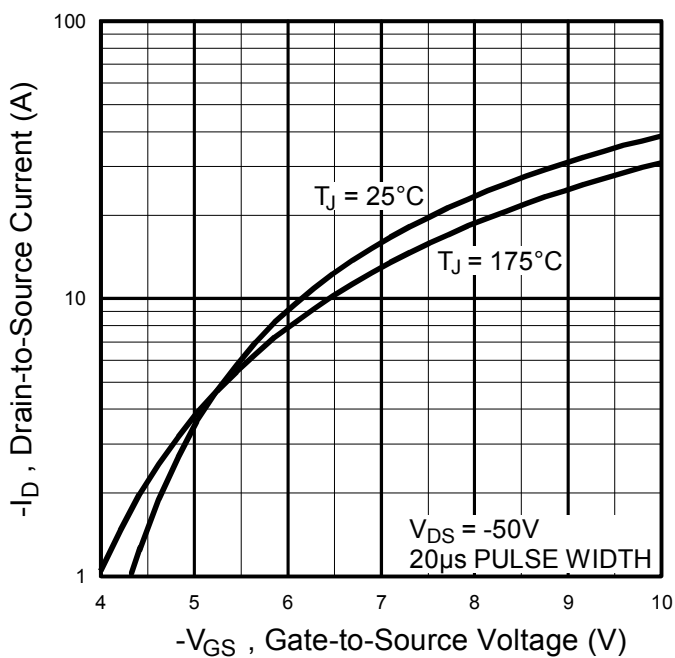
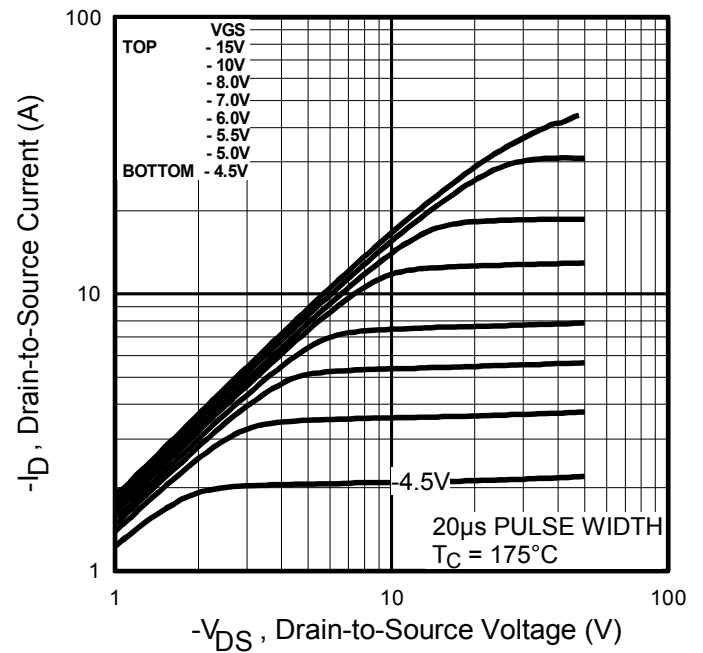
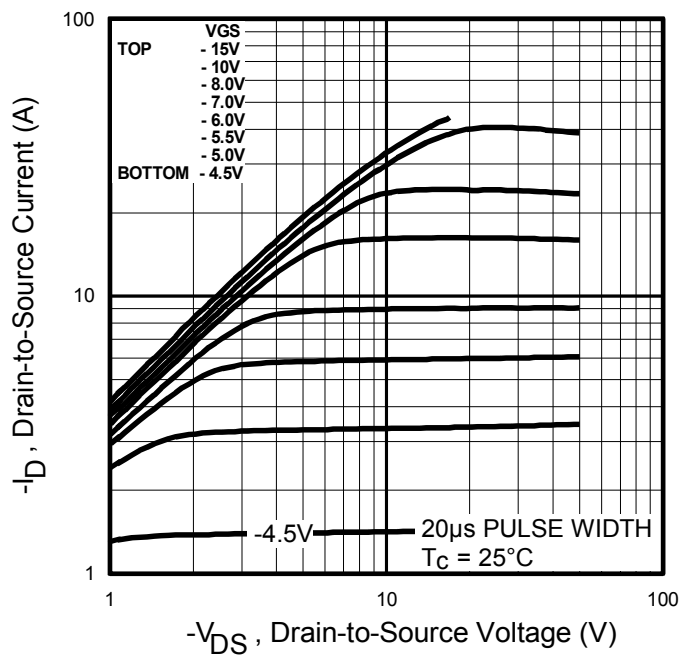
Base part number	Package Type	Standard Pack		Orderable Part Number
		Form	Quantity	
IRFU6215PbF	I-Pak	Tube	75	IRFU6215PbF
IRFR6215PbF	D-Pak	Tube	75	IRFR6215PbF
		Tape and Reel Left	3000	IRFR6215TRL PbF

Absolute Maximum Ratings

Symbol	Parameter	Max.	Units
$I_D @ T_C = 25^\circ\text{C}$	Continuous Drain Current, $V_{$		

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	-150	—	—	V	$V_{GS} = 0V, I_D = -250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	-0.20	—	V/ $^{\circ}\text{C}$	Reference to $25^{\circ}\text{C}, I_D = -1mA$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	—	0.295	Ω	$V_{GS} = -10V, I_D = -6.6A$ ④
		—	—	0.58		$V_{GS} = -10V, I_D = -6.6A$ ④ $T_J = 150^{\circ}\text{C}$
$V_{GS(th)}$	Gate Threshold Voltage	-2.0	—	-4.0	V	$V_{DS} = V_{GS}, I_D = -250\mu A$
g_{fs}	Forward Trans conductance	3.6	—	—	S	$V_{DS} = -50V, I_D = -6.6A$ ⑥
I_{DSS}	Drain-to-Source Leakage Current	—	—	-25	μA	$V_{DS} = -150V, V_{GS} = 0V$
		—	—	-250		$V_{DS} = -120V, V_{GS} = 0V, T_J = 150^{\circ}\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	$V_{GS} = -20V$
	Gate-to-Source Reverse Leakage	—	—	100		$V_{GS} = 20V$
Q_g	Total Gate Charge	—	—	66	nC	$I_D = -6.6A$
Q_{gs}	Gate-to-Source Charge	—	—	8.1		$V_{DS} = -120V$
Q_{gd}	Gate-to-Drain Charge	—	—	35		



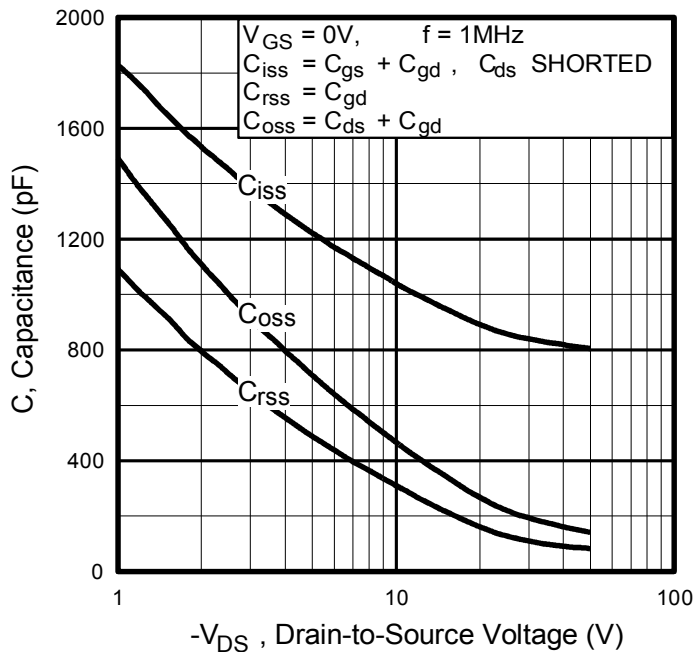


Fig 5. Typical Capacitance vs. Drain-to-Source Voltage

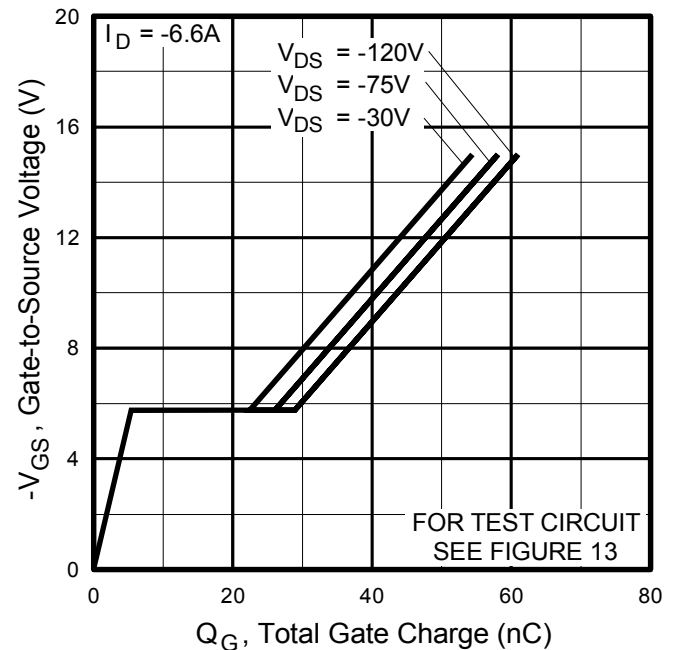


Fig 6. Typical Gate Charge vs. Gate-to-Source Voltage

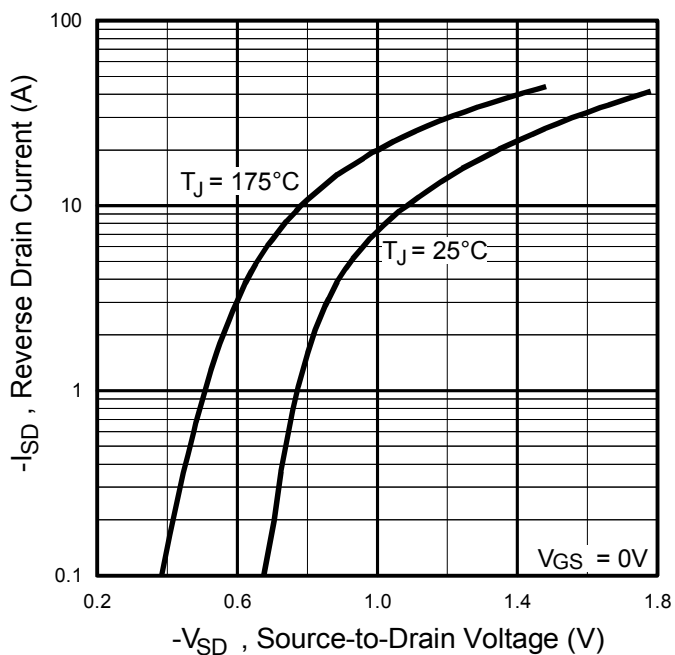


Fig 7 Typical Source-to-Drain Diode Forward Voltage

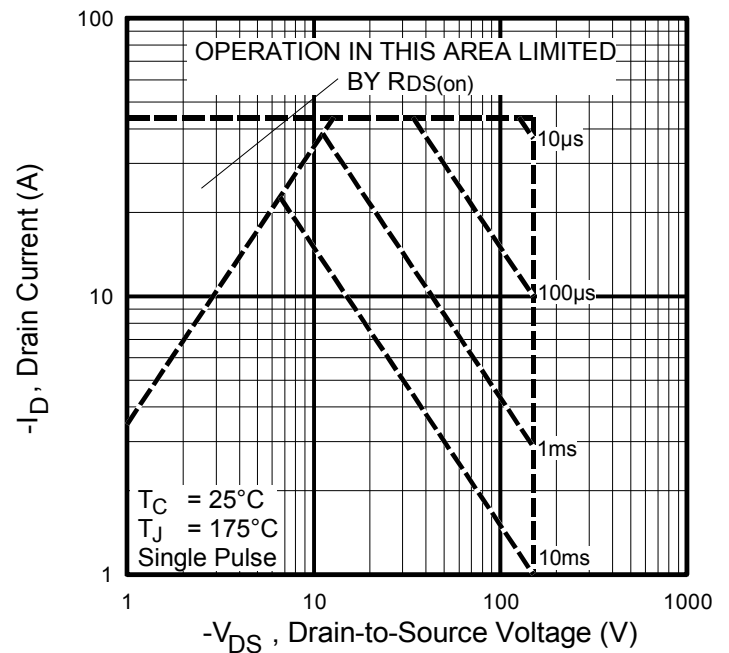


Fig 8. Maximum Safe Operating Area

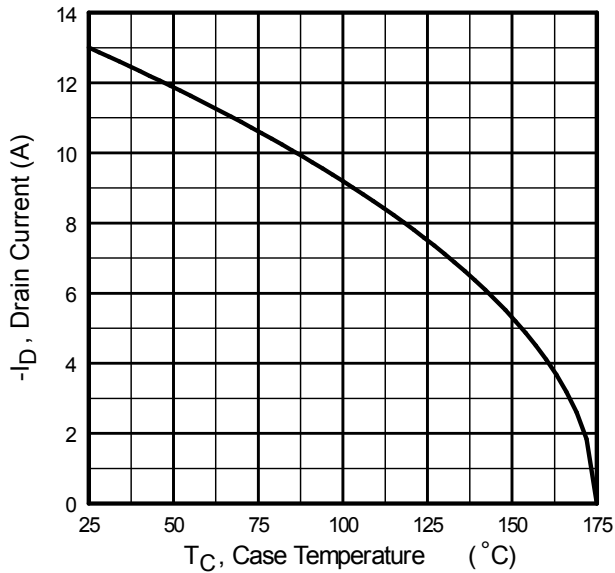


Fig 9. Maximum Drain Current vs. Case Temperature

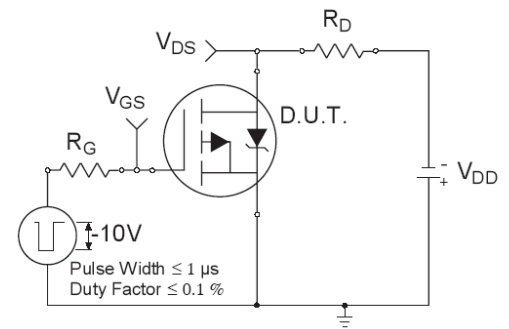


Fig 10a. Switching Time Test Circuit

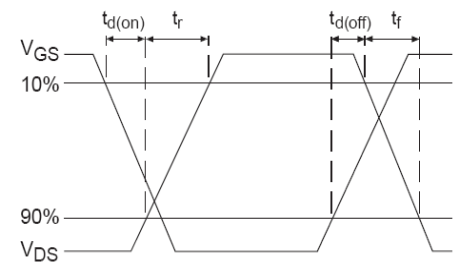


Fig 10b. Switching Time Waveforms

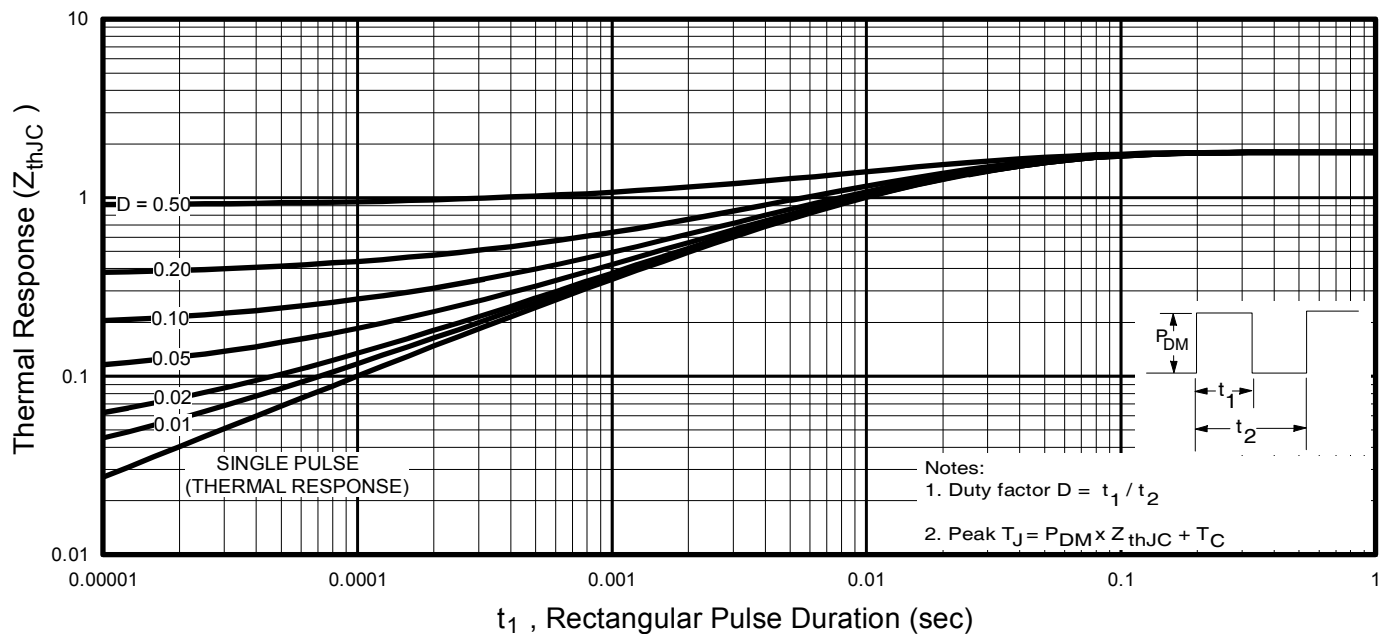


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Case

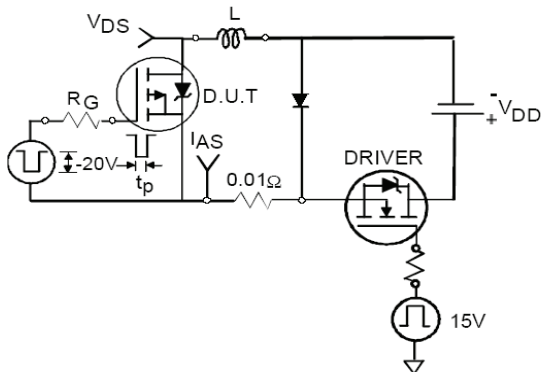


Fig 12a. Unclamped Inductive Test Circuit

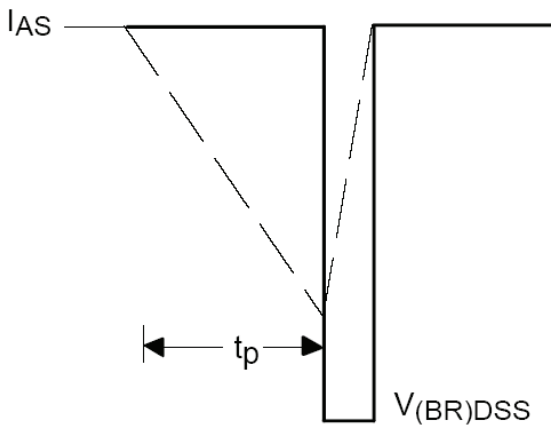


Fig 12b. Unclamped Inductive Waveforms

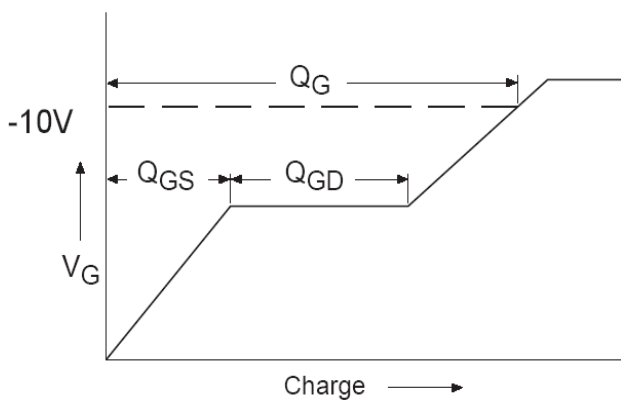


Fig 13a. Gate Charge Waveform

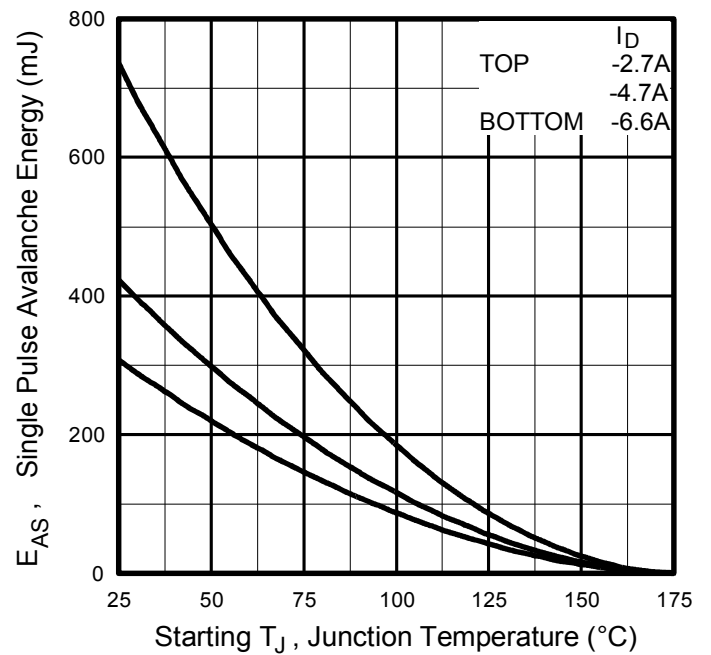
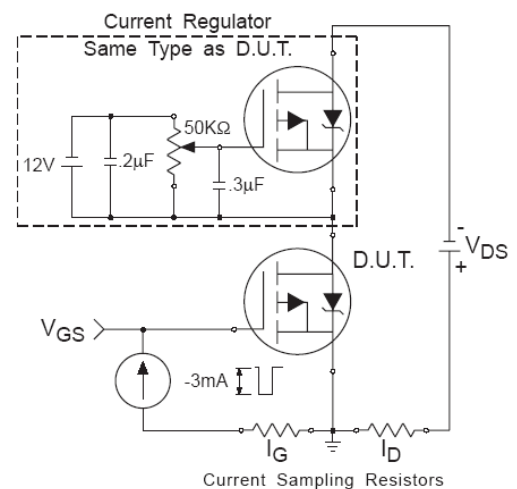
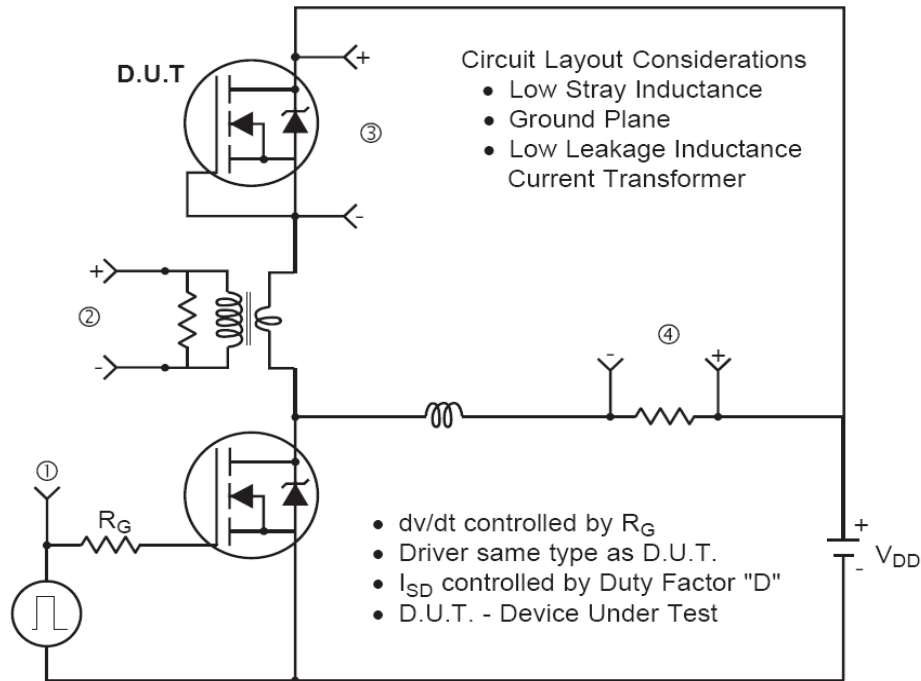


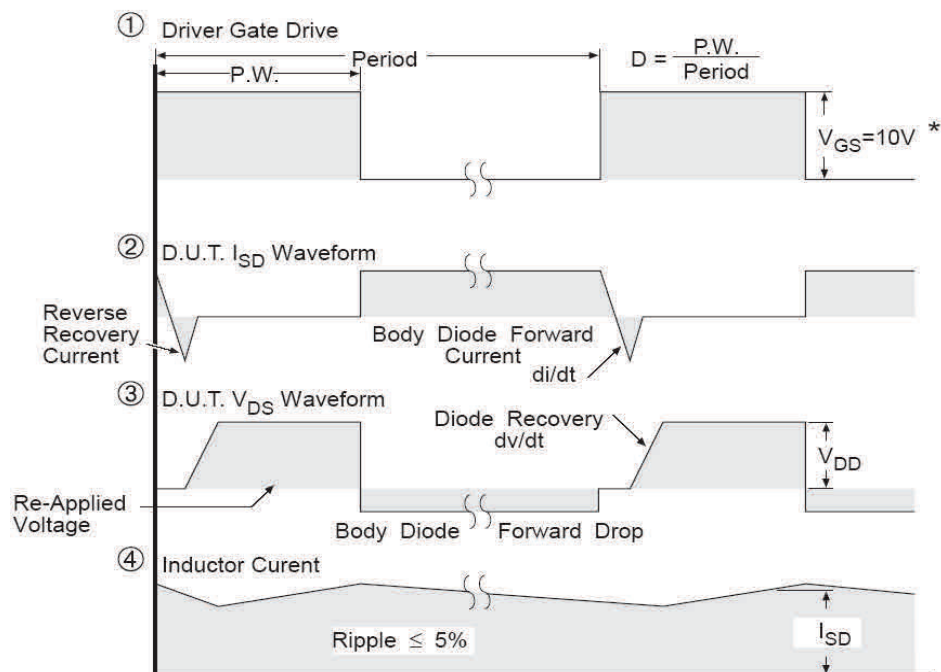
Fig 12c. Maximum Avalanche Energy vs. Drain Current



Peak Diode Recovery dv/dt Test Circuit



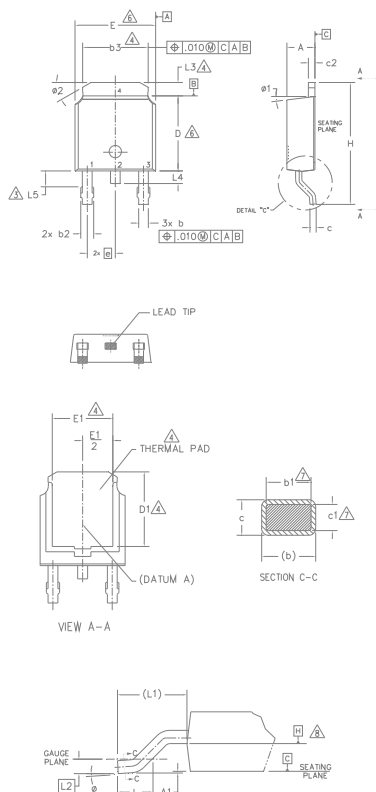
* Reverse Polarity of D.U.T for P-Channel



* $V_{GS} = 5V$ for Logic Level Devices

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

D-Pak (TO-252AA) Package Outline (Dimensions are shown in millimeters (inches))

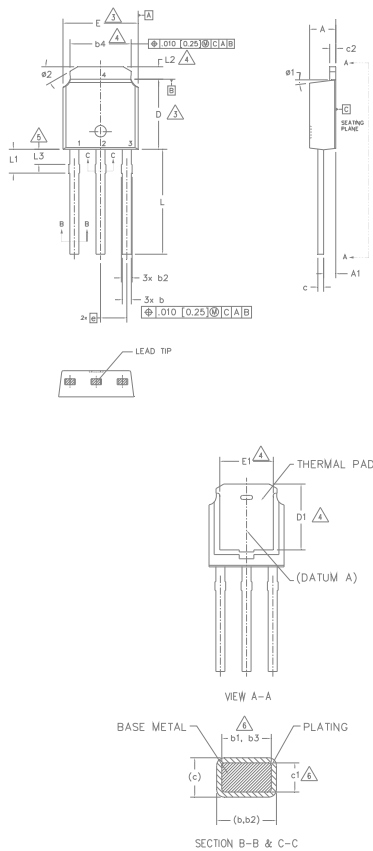


NOTES:

- 1.- DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994
- 2.- DIMENSION ARE SHOWN IN INCHES [MILLIMETERS]
- 3.- LEAD DIMENSION UNCONTROLLED IN L5.
- 4.- DIMENSION D1, E1, L3 & b3 ESTABLISH A MINIMUM MOUNTING SURFACE FOR THERMAL PAD.
- 5.- SECTION C-C DIMENSIONS APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN .005 AND 0.10 [0.13 AND 0.25] FROM THE LEAD TIP.
- 6.- DIMENSION D & E DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED .006 [0.15] PER SIDE. THESE DIMENSIONS ARE MEASURED AT THE OUTMOST EXTREMES OF THE PLASTIC BODY.
- 7.- DIMENSION b1 & c1 APPLIED TO BASE METAL ONLY.
- 8.- DATUM A & B TO BE DETERMINED AT DATUM PLANE H.
- 9.- OUTLINE CONFORMS TO JEDEC OUTLINE TO-252AA.

SYMBOL	DIMENSIONS				NOTES	
	MILLIMETERS		INCHES			
	MIN.	MAX.	MIN.	MAX.		
A	2.18	2.39	.086	.094		
A1	—	0.13	—	.005		
b	0.64	0.89	.025	.035		
b1	0.64	0.79	.025	.031	7	
b2	0.76	1.14	.030	.045		
b3	4.95	5.46	.195	.215	4	
c	0.46	0.61	.018	.024		

I-Pak (TO-251AA) Package Outline Dimensions are shown in millimeters (inches)

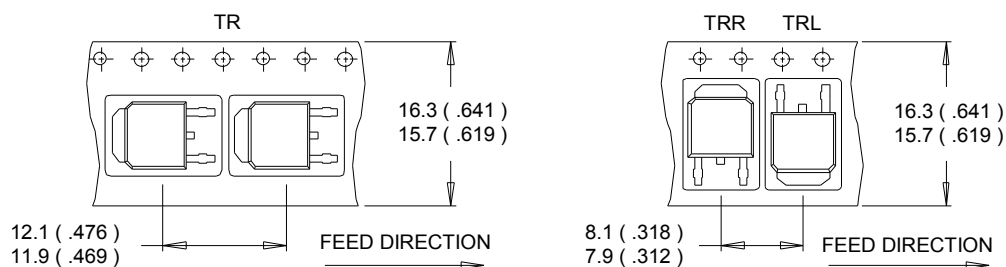


NOTES:

- 1.- DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994
- 2.- DIMENSION ARE SHOWN IN INCHES [MILLIMETERS].
- 3.- DIMENSION D & E DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED .005 [0.13] PER SIDE. THESE DIMENSIONS ARE MEASURED AT THE OUTMOST EXTREMES OF THE PLASTIC BODY.
- 4.- THERMAL PAD CONTOUR OPTION WITHIN DIMENSION b4, L2, E1 & D1.
- 5.- LEAD DIMENSION UNCONTROLLED IN L3.
- 6.- DIMENSION b1, b3 & c1 APPLY TO BASE METAL ONLY.
- 7.- OUTLINE CONFORMS TO JEDEC OUTLINE TO-251AA (Date 06/02).
- 8.- CONTROLLING DIMENSION : INCHES.

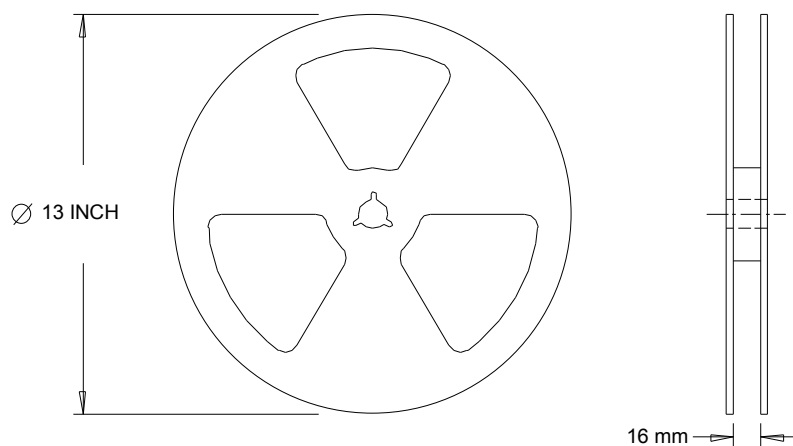
SYMBOL	DIMENSIONS				NOTES	
	MILLIMETERS		INCHES			
	MIN.	MAX.	MIN.	MAX.		
A	2.18	2.39	.086	.094		
A1	0.89	1.14	.035	.045		
b	0.64	0.89	.025	.035		
b1	0.65	0.79	.025	.031	6	
b2	0.76	1.14	.030	.045		
b3	0.76	1.04	.030	.041	6	
b4	4.95	5.46	.195	.215	4	
c	0.46	0.61	.018	.024		
c1	0.41	0.56	.016	.022	6	
c2	0.46	0.89	.018			

D-Pak (TO-252AA) Tape & Reel Information 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. OUTLINE CONFORMS TO EIA-481.

Note: For the most current drawing please refer to Infineon's web site www.infineon.com

Qualification Information[†]

Qualification Level	Industrial (per JEDEC JESD47F) ^{††}	
Moisture Sensitivity Level	D-Pak	MSL1 (per JEDEC J-STD-020D) ^{††}
	I-Pak	
RoHS Compliant	Yes	

[†] Qualification standards can be found at Infineon's web site www.infineon.com

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

Revision History

Date	Comments
5/31/2016	- Updated datasheet with corporate template. - Added disclaimer on last page.

Trademarks of Infineon Technologies AG

μHVIC™, μIPM™, μPFC™, AU-ConvertIR™, AURIX™, C166™, CanPAK™, CIPOS™, CIPURSE™, CoolDP™, CoolGaN™, COOLiR™, CoolMOS™, CoolSET™, CoolSiC™, DAVE™, DI-POL™, DirectFET™, DrBlade™, EasyPIM™, EconoBRIDGE™, EconoDUAL™, EconoPACK™, EconoPIM™, EiceDRIVER™, eupec™, FCOS™, GaNpowIR™, HEXFET™, HITFET™, HybridPACK™, iMOTION™, IRAM™, ISOFACE™, IsoPACK™, LEDriviR™, LITIX™, MIPAQ™, ModSTACK™, my-d™, NovalithIC™, OPTIGA™, OptiMOS™, ORIGA™, PowIRaudio™, PowIRstage™, PrimePACK™, PrimeSTACK™, PROFET™, PRO-SIL™, RASIC™, REAL3™, SmartLEWIS™, SOLID FLASH™, SPOC™, StrongIRFET™, SupIRBuck™, TEMPFET™, TRENCHSTOP™, TriCore™, UHVIC™, XHP™, XMC™

Trademarks updated November 2015

Other Trademarks