

## Product Summary

- $V_{DS} = 30V, I_D = 90A$
- $R_{DS(on)} < 4m\Omega @ V_{GS} = 10V$
- $R_{DS(on)} < 6m\Omega @ V_{GS} = 4.5V$

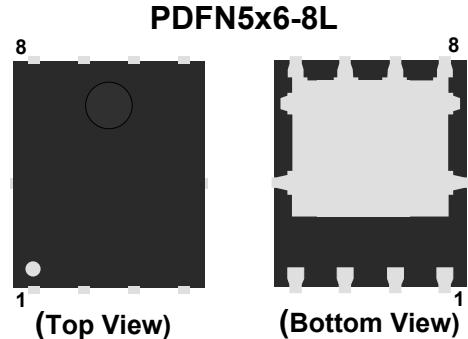
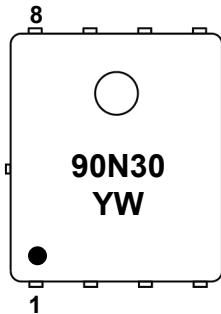
## Features

- Advanced Trench Technology
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

## Application

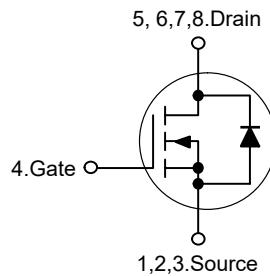
- BLDC
- Wireless impact
- Mobile phone fast charging

## Marking Code



Pin	Description
1,2,3	Source
4	Gate
5,6,7,8	Drain

## Schematic Diagram



## Absolute Maximum Ratings

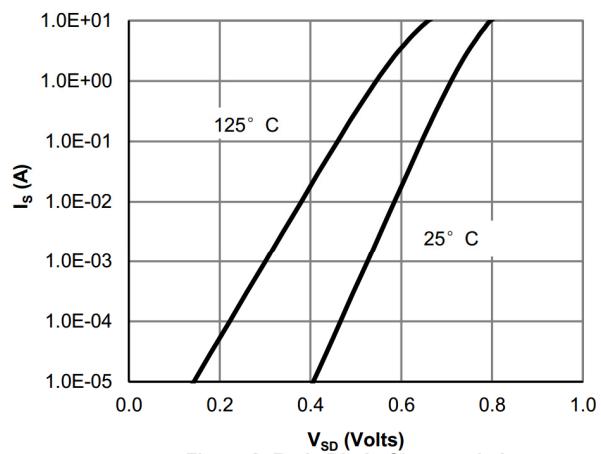
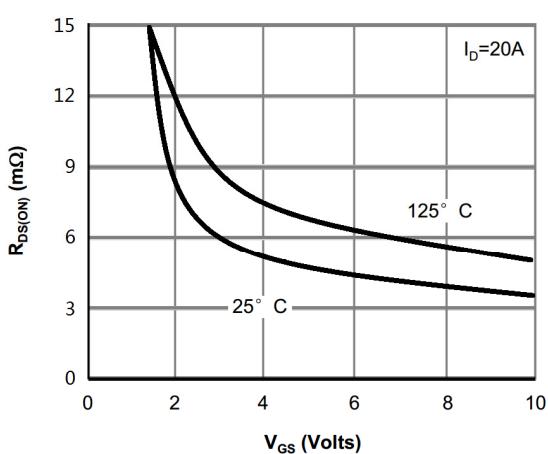
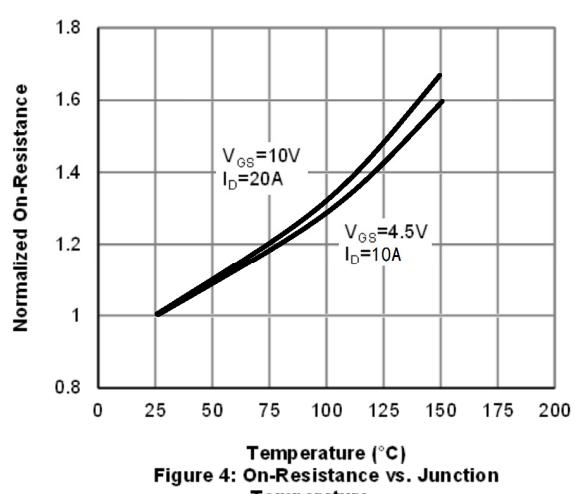
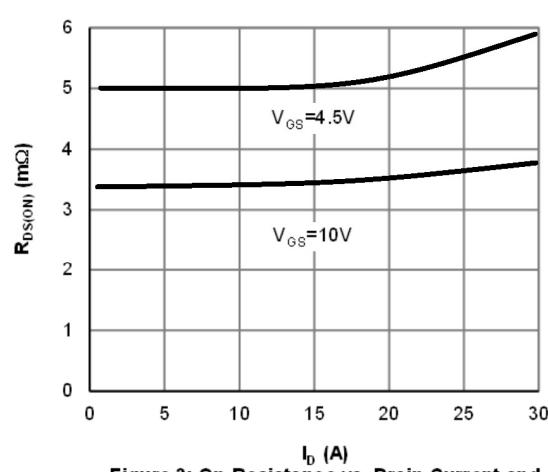
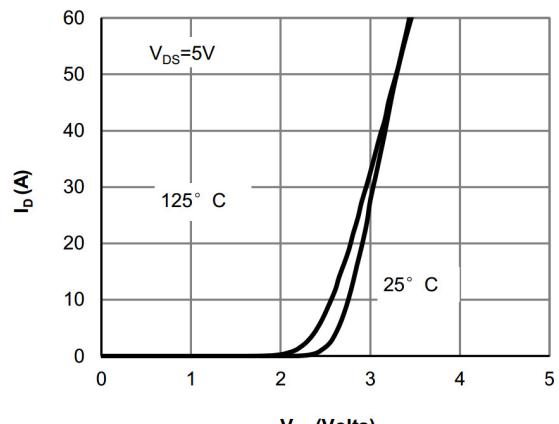
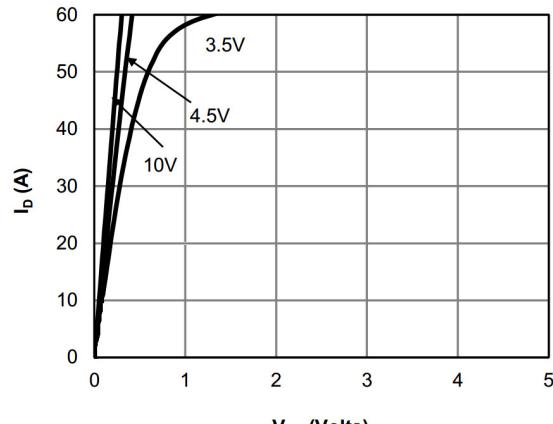
Ratings at 25°C case temperature unless otherwise specified.

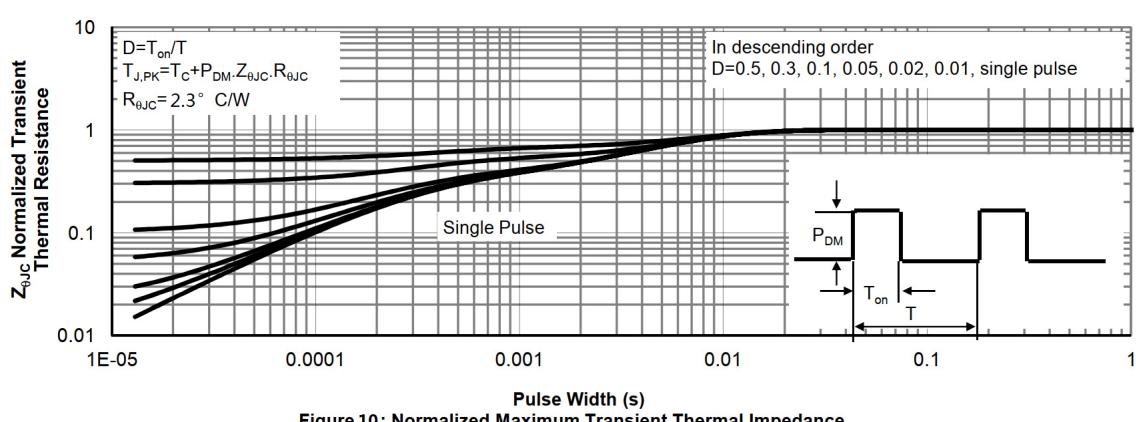
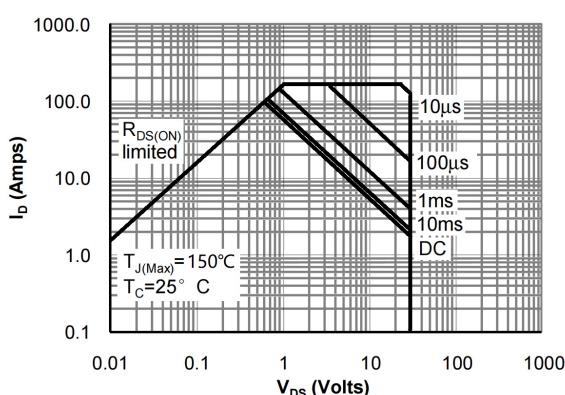
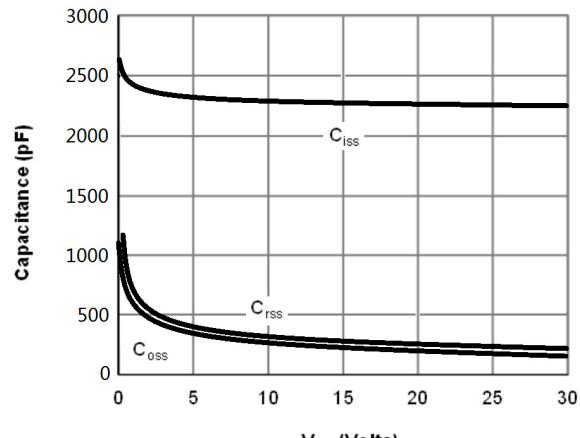
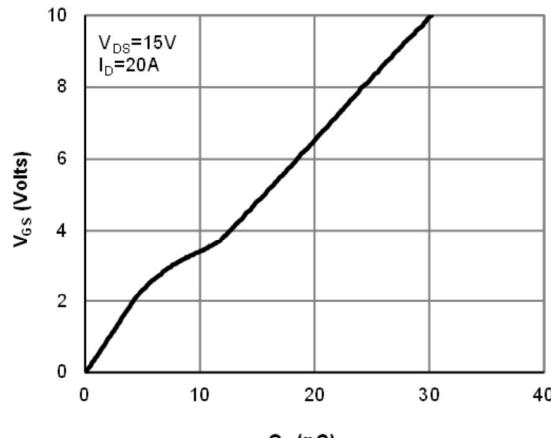
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Continuous Drain Current	$I_D$	95	A
Pulsed Drain Current	$I_{DM}$	175	A
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Power Dissipation	$P_D(T_c=25^\circ C)$	55	W
Avalanche energy( $L=0.5mH$ )	$E_{AS}$	281	mJ
Avalanche Current( $L=0.5mH$ )	$I_{AS}$	26.5	A
Junction and Storage Temperature Range	$T_j, T_{stg}$	-55 to 150	°C
Maximum Junction-to-Ambient	$R_{JA}$	25	°C/W
Steady-State		55	
Maximum Junction-to-Case	$R_{JC}$	2.3	

## Electrical Characteristics

(T<sub>J</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	I <sub>D</sub> =250uA, V <sub>GS</sub> =0V	30	33		V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			1.0	uA
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> = ±20V		±100		nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	1	1.7	3.0	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =20A		3.5	3.6	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =10A		5.0	6.5	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V			1.4	V
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V f=1.0MHz	V <sub>GS</sub> =0V	2200		
Output Capacitance	C <sub>oss</sub>			145	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>			210		
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V f=1MHz	V <sub>DS</sub> =0V		2.0	Ω
Total Gate Charge	Q <sub>g(10V)</sub>	V <sub>GS</sub> =10V I <sub>D</sub> =20A	V <sub>DS</sub> =15V	32		nC
Total Gate Charge	Q <sub>g(4.5V)</sub>			15		
Gate Source Charge	Q <sub>gs</sub>			5.2		
Gate Drain Charge	Q <sub>gd</sub>			6.5		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>GS</sub> =10V R <sub>L</sub> =0.75 Ω	V <sub>DS</sub> =15V R <sub>GEN</sub> =3 Ω	8.5		ns
Turn-On Rise Time	t <sub>r</sub>			4.2		
Turn-Off Delay Time	t <sub>d(off)</sub>			30		
Turn-Off Fall Time	t <sub>f</sub>			5.7		





## Test Circuit

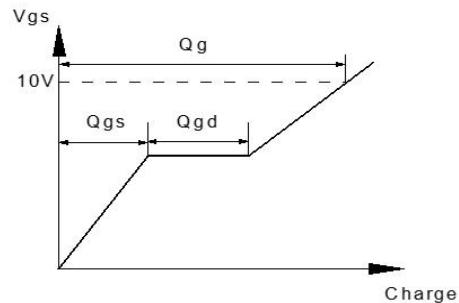
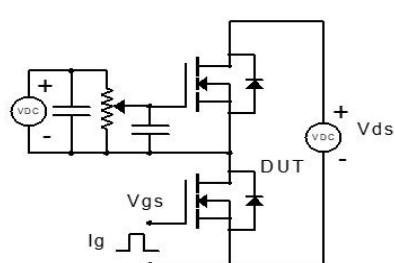


Figure 1: Gate Charge Test Circuit &amp; Waveform

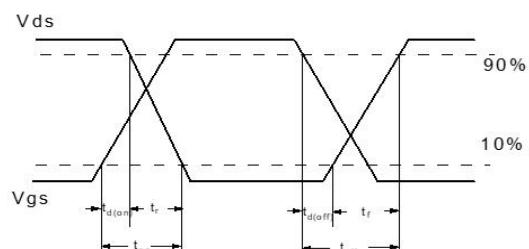
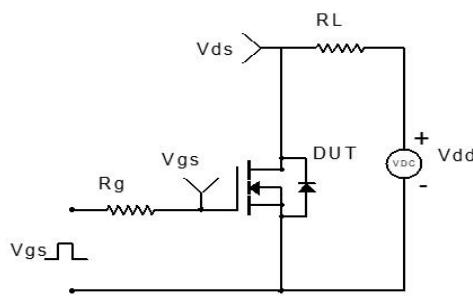


Figure 2: Resistive Switching Test Circuit &amp; Waveform

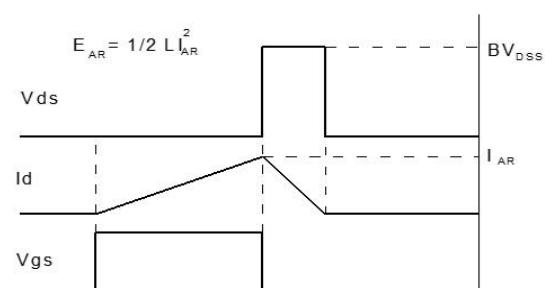
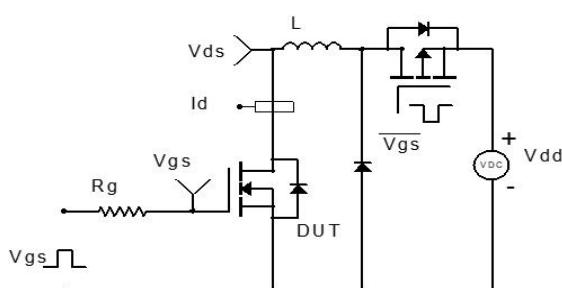


Figure 3: Unclamped Inductive Switching Test Circuit &amp; Waveform

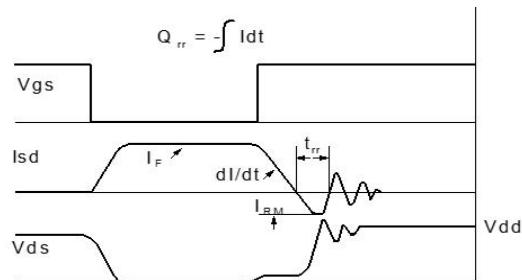
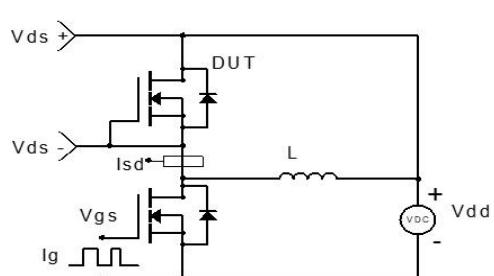
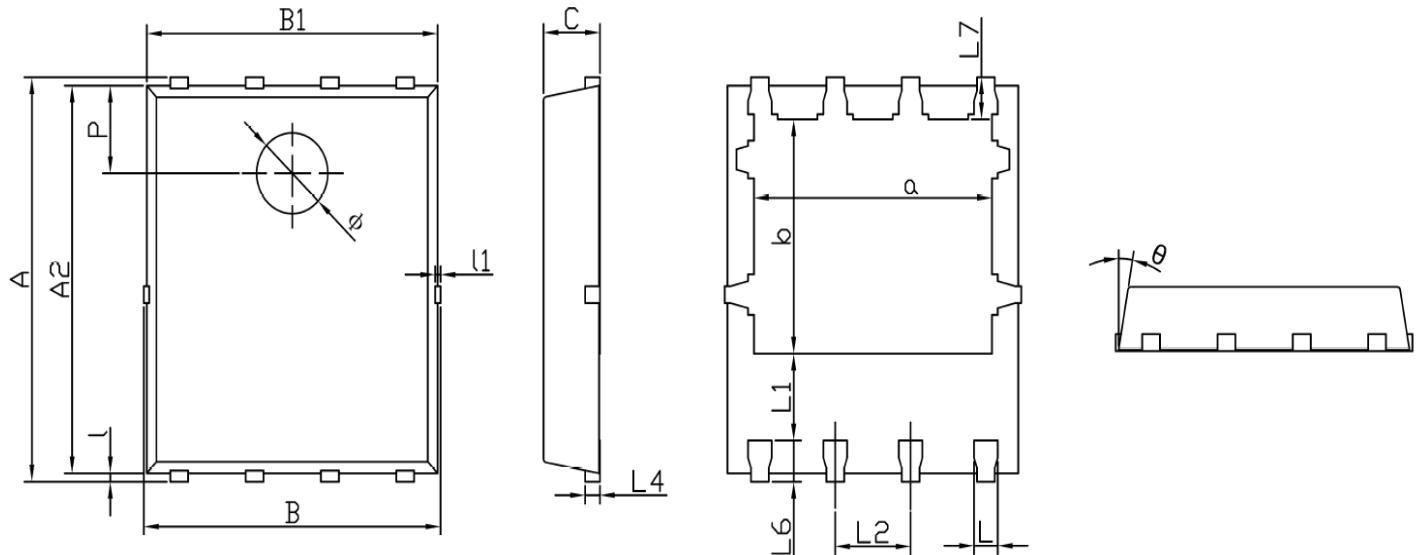


Figure 4: Diode Recovery Test Circuit &amp; Waveform

## Package Outline

### PDFN5x6-8L Dimensions in mm



Symbol	Dimensions		Symbol	Dimensions	
	Min.	Max.		Min.	Max.
A	5.90	6.10	L1	1.10	-
a	3.91	4.11	I1	-	0.10
A2	5.70	5.80	L2	1.17	1.37
B	4.90	5.10	L4	0.21	0.34
b	3.375	3.575	L6	0.51	0.71
B1	4.80	5.00	L7	0.51	0.71
C	0.90	1.00	P	1.15	1.45
L	0.30	0.50	θ	8°	12°
I	0.06	0.20	φ	1.10	1.30

## Contact Information

TANI website: <http://www.tanisemi.com> Email:tani@tanisemi.com

For additional information, please contact your local Sales Representative.



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### Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

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