

## Product Summary

- $V_{DS} = -30V, I_D = -11A$
- $R_{DS(on)} < 17m\Omega @ V_{GS} = -10V$
- $R_{DS(on)} < 22m\Omega @ V_{GS} = -4.5V$

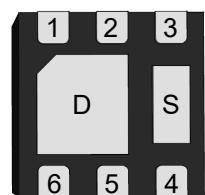
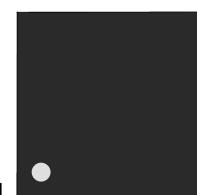
## Features

- Advanced Trench Technology
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 1

## Application

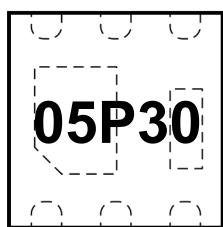
- Load Switch
- PWM Applications
- Power Management

## P-Channel Enhancement Mode Power MOSFET

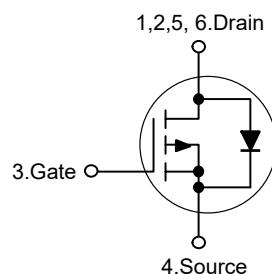
**DFN2x2-6L**

**(Top View)**
**(Bottom View)**

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

## Marking Code


**Top View**

## Schematic Diagram



## Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	-20	V
Gate-Source Voltage	$V_{GSS}$	$\pm 12$	V
Continuous Drain Current	$I_D (T_a=25^\circ C)$	-11	A
Pulsed Drain Current	$I_{DM}$	-44	A
Avalanche Current	$I_{AS}$	13	A
Avalanche energy L=0.5mH	$E_{AS}$	59	mJ
Power Dissipation for Single Operation	$P_D (T_a=25^\circ C)$	3.0	W
Maximum Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55 ~ 150	°C
Thermal Resistance-Junction to Ambient	$t \leq 10s$	40	°C/W
		75	°C/W

## Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D=-250\mu A$ $V_{GS}=0V$	-20	-23		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20V$ $V_{GS}=0V$			-1.0	$\mu A$
Gate-Body leakage current	$I_{GSS}$	$V_{DS}=0V$ $V_{GS}=\pm 12V$			$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V$ $I_D=-10A$		15	17	$m\Omega$
		$V_{GS}=-2.5V$ $I_D=-5A$		19	25	
		$V_{GS}=-1.8V$ $I_D=-1A$		27	38	
Diode Forward Voltage	$V_{SD}$	$I_S=-1A$ $V_{GS}=0V$			-1.2	V
Total Gate Charge	$Q_g$	$V_{GS}=-4.5V$ $V_{DS}=-6V$ $I_D=-8A$		12.7		$nC$
Gate-Source Charge	$Q_{gs}$			1.7		
Gate-Drain Charge	$Q_{gd}$			3.4		
Gate resistance	$R_g$	$V_{GS}=0V$ , $V_{DS}=0V$ , $f=1MHz$		13.5		
Input Capacitance	$C_{iss}$	$V_{GS}=0V$ $V_{DS}=-20V$ $f=1MHz$		2550		$pF$
Output Capacitance	$C_{oss}$			205		
Reverse Transfer Capacitance	$C_{rss}$			190		
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-4.5V$ $V_{DS}=-6V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		11		$ns$
Turn-on Rise Time	$t_r$			25		
Turn-off Delay Time	$t_{d(OFF)}$			70		
Turn-off Fall Time	$t_f$			41.5		

## Typical Characteristic Curves

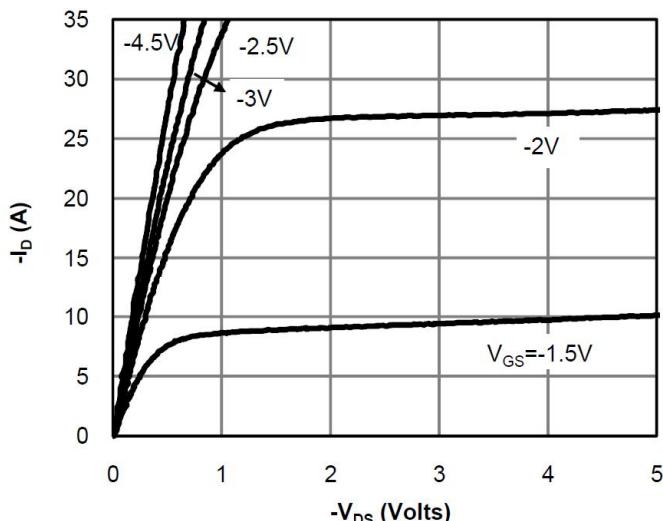


Fig 1: On-Region Characteristics

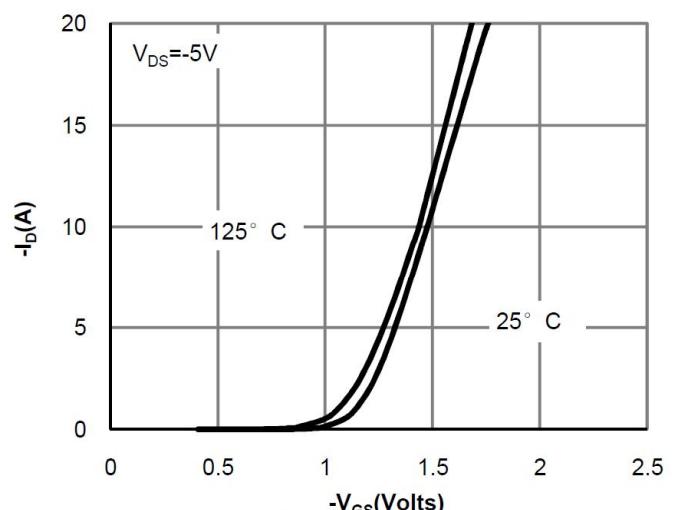


Figure 2: Transfer Characteristics

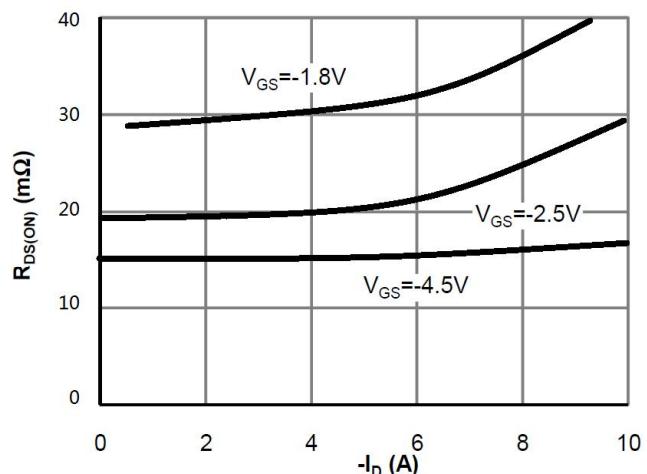


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

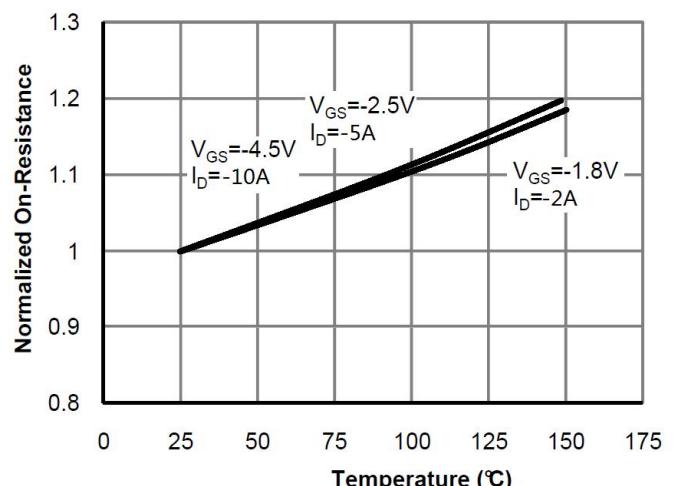


Figure 4: On-Resistance vs. Junction Temperature

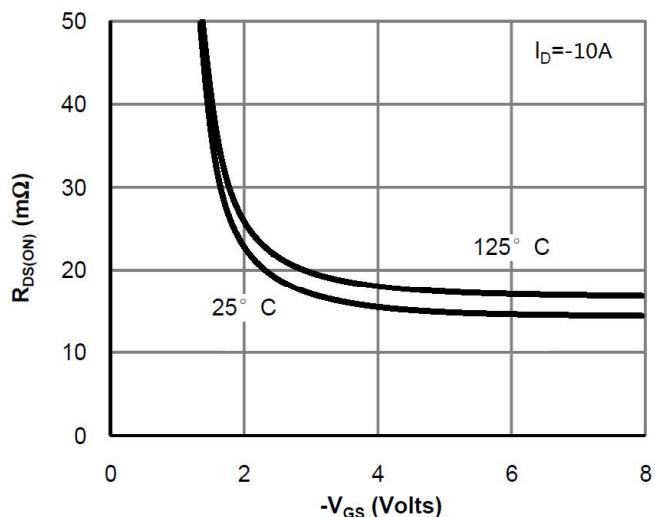


Figure 5: On-Resistance vs. Gate-Source Voltage

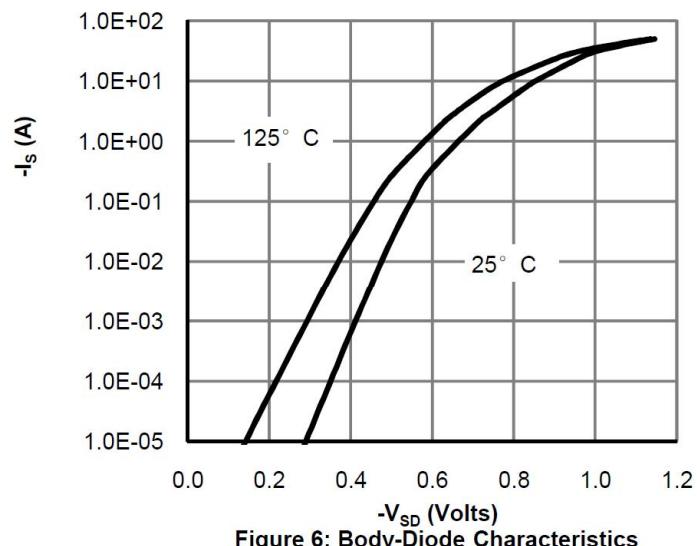
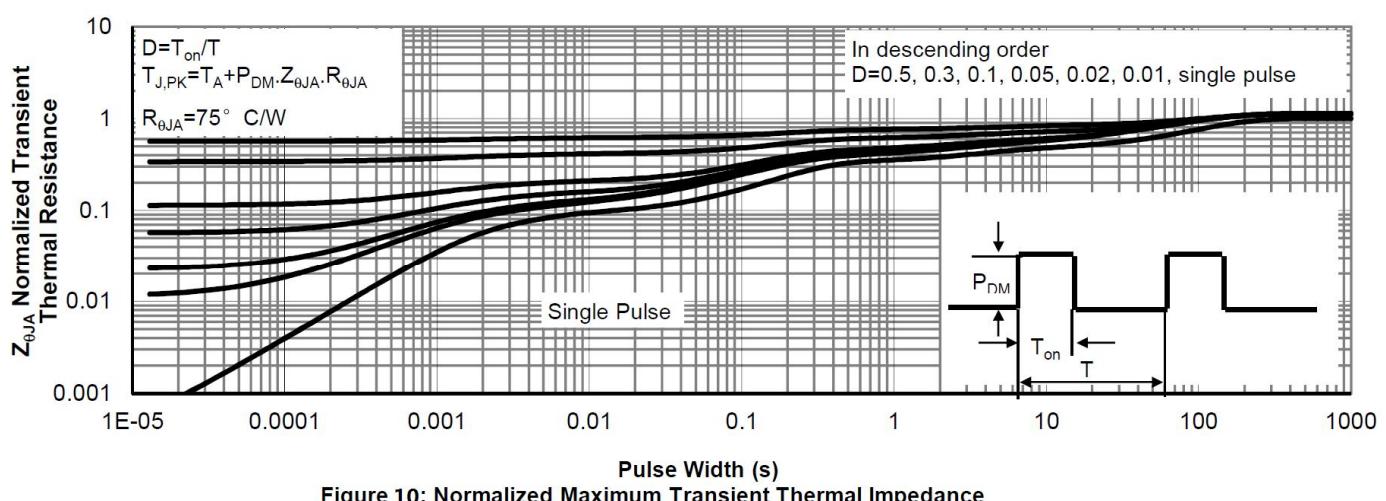
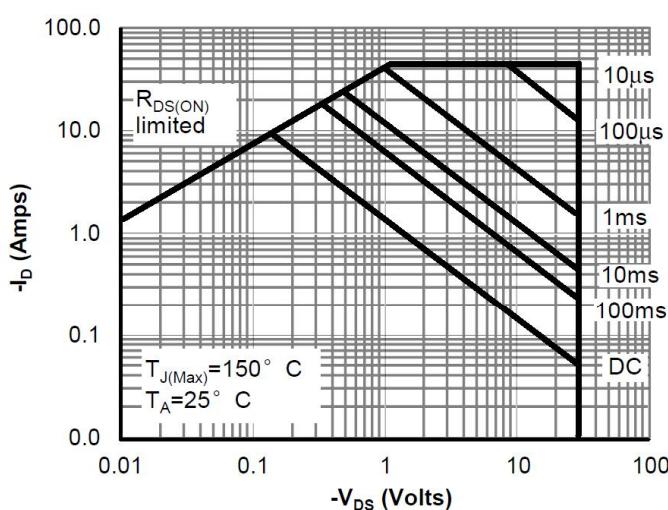
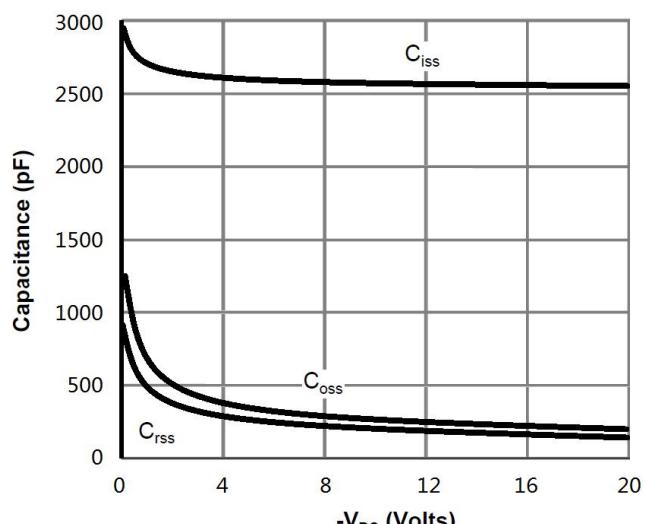
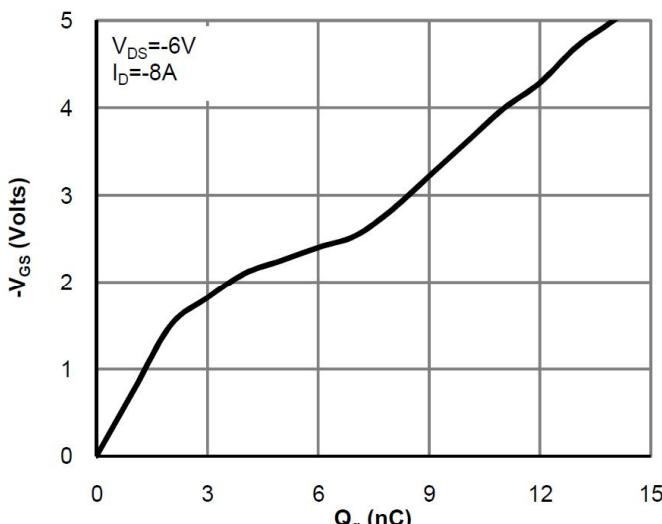


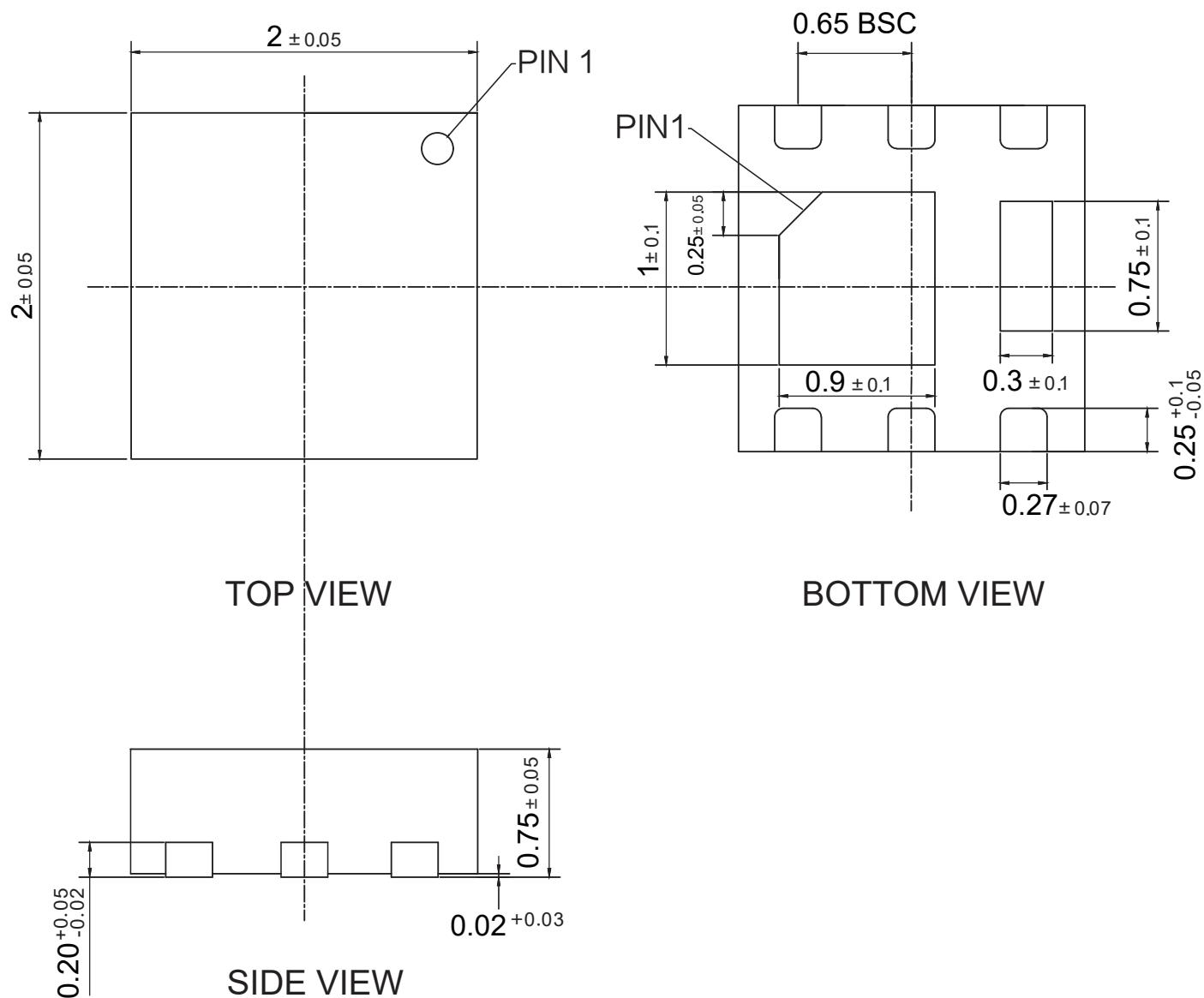
Figure 6: Body-Diode Characteristics



## Package Outline

DFN2x2-6L-0001

Dimensions in mm



## Ordering Information

Device	Package	Shipping
TN05P30JDF	DFN2x2-6L	3,000PCS/Reel&7inches

## 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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