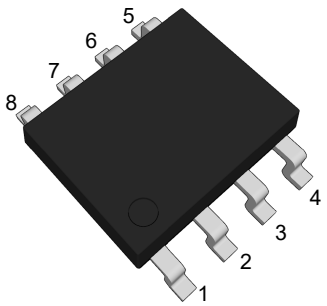
# TN15P30PA

**P-Channel Enhancement Mode Power MOSFET**

## Product Summary

- $V_{DS}$= -30V,$I_D$= -15A
- $R_{DS(on)}$< 12mΩ @$V_{GS}$= -10V
- $R_{DS(on)}$< 20mΩ @$V_{GS}$= -4.5V

**SOP-8**




**(Top View)**

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

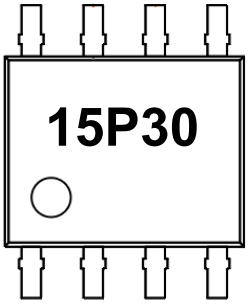
## Features

- Advanced Trench Technology
- 100% Avalanche Tested
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

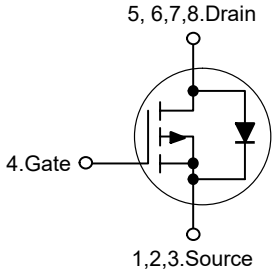
## Application

- Load Switch
- PWM Applications
- Power Management

## Marking Code




## Schematic Diagram




## Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source Voltage | $-V_{DS}$ | 30 | V |
| Gate-Source Voltage | $V_{GS}$ | ±20 | V |
| Drain Current-Continuous | $-I_D$ | 15 | A |
| Drain Current-Pulsed Note1 | $-I_{DM}$ | 80 | A |
| Maximum Power Dissipation | $P_D$ | 3 | W |
| Junction Temperature | $T_J$ | 150 | °C |
| Storage Temperature Range | $T_{STG}$ | -55 to +150 | °C |

## Thermal Characteristics

| | | | |
|---|---|---|---|
| Maximum Junction-to-Case Note2 | $R_{\theta JC}$ | 41.7 | °C/W |

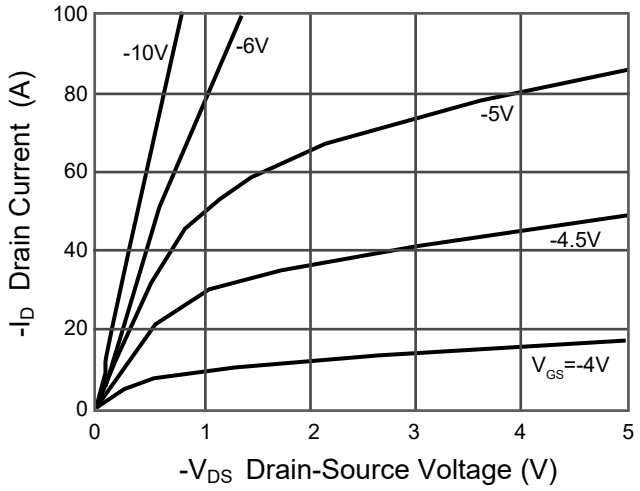
## Electrical Characteristics

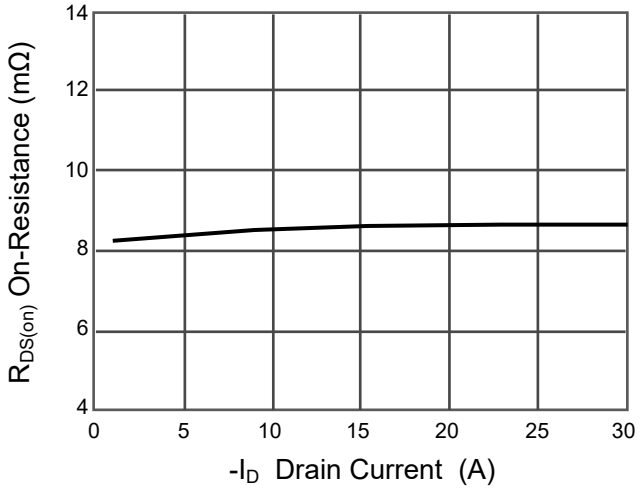
(Ta=25℃ unless otherwise specified)

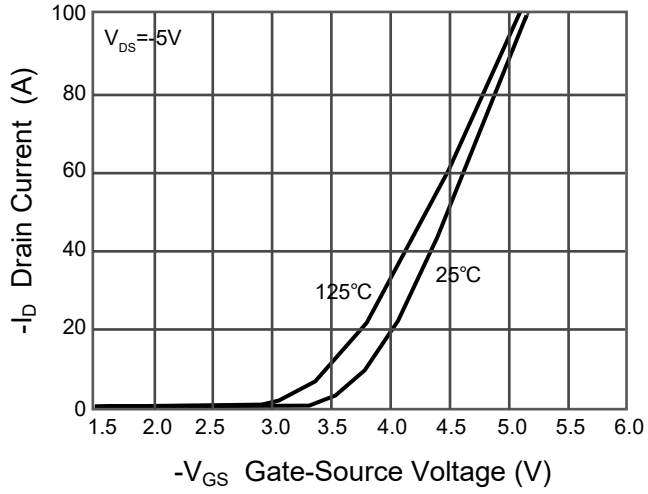
| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| **Static Characteristics** | | | | | | |
| Drain-Source Breakdown Voltage | $-V_{(BR)DSS}$ | $V_{GS}$=0V,$I_D$=-250μA | 30 | -- | -- | V |
| Zero Gate Voltage Drain Current | $-I_{DSS}$ | $V_{DS}$=-30V,$V_{GS}$=0V | -- | -- | 1 | μA |
| Gate-Body Leakage Current | $I_{GSS}$ | $V_{GS}$=±20V,$V_{DS}$=0V | -- | -- | ±100 | nA |
| Gate Threshold Voltage Note3 | $-V_{GS(th)}$ | $V_{DS}$=$V_{GS}$,$I_D$=-250μA | 1 | 1.6 | 2.5 | V |
| Drain-Source On-Resistance Note3 | $R_{DS(on)}$ | $V_{GS}$=-10V,$I_D$=-15A | -- | -- | 12 | mΩ |
| | | $V_{GS}$=-4.5V,$I_D$=-10A | -- | -- | 20 | mΩ |
| **Dynamic Characteristics** | | | | | | |
| Input Capacitance | $C_{iss}$ | $V_{DS}$=-15V, $V_{GS}$=0V, f=1MHz | -- | 2800 | -- | pF |
| Output Capacitance | $C_{oss}$ | | -- | 346 | -- | pF |
| Reverse Transfer Capacitance | $C_{rss}$ | | -- | 319 | -- | pF |
| **Switching Characteristics** | | | | | | |
| Turn-on Delay Time | $t_{d(on)}$ | $V_{DD}$=-15V,$V_{GS}$=-10V $I_D$=-10A, $R_{GEN}$=2.5Ω | -- | 14 | -- | nS |
| Turn-on Rise Time | $t_r$ | | -- | 20 | -- | nS |
| Turn-off Delay Time | $t_{d(off)}$ | | -- | 95 | -- | nS |
| Turn-off Fall Time | $t_f$ | | -- | 65 | -- | nS |
| Total Gate Charge | $Q_g$ | $V_{DS}$=-15V,$V_{GS}$=-10V $I_D$=-12A | -- | 30 | -- | nC |
| Gate-Source Charge | $Q_{gs}$ | | -- | 5.3 | -- | nC |
| Gate-Drain Charge | $Q_{gd}$ | | -- | 7.6 | -- | nC |
| **Source-Drain Diode Characteristics** | | | | | | |
| Diode Forward Voltage Note3 | $-V_{SD}$ | $V_{GS}$=0V,$I_S$=-15A | -- | -- | 1.2 | V |
| Diode Forward Current Note2 | $-I_S$ | | -- | -- | 15 | A |

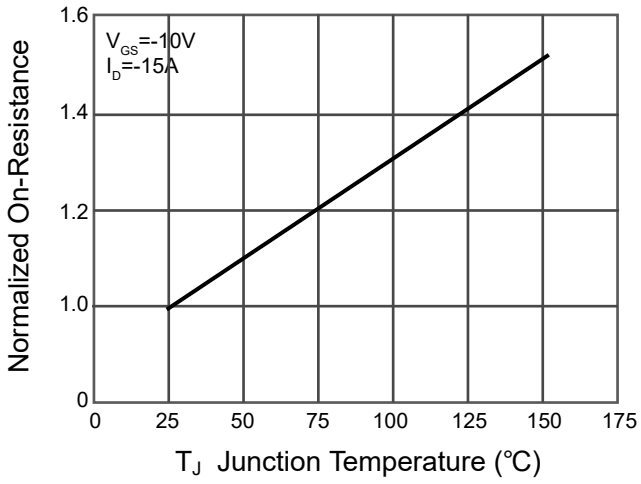
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2.Surface Mounted on FR4 Board, t ≤ 10 sec.
3.Pulse Test: Pulse width≤300μs, duty cycle≤2%

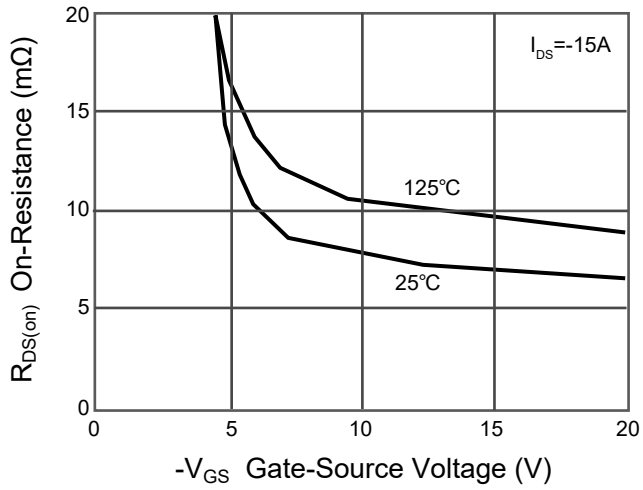
## Typical Characteristic Curves

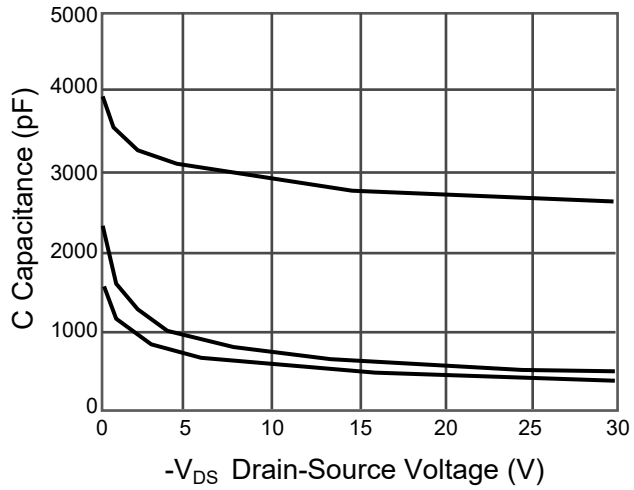


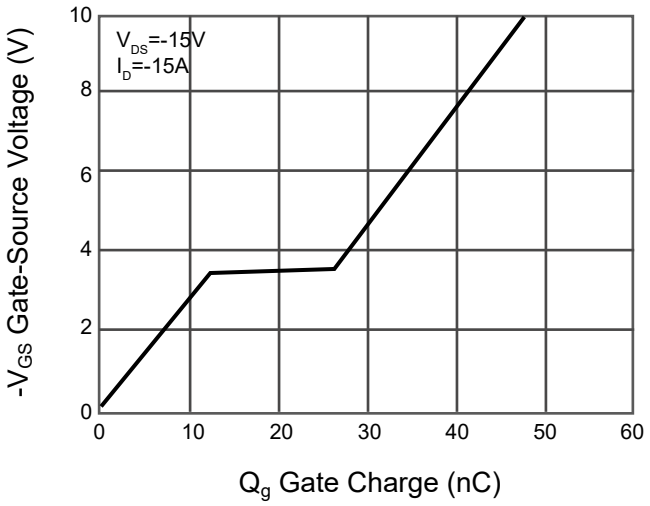



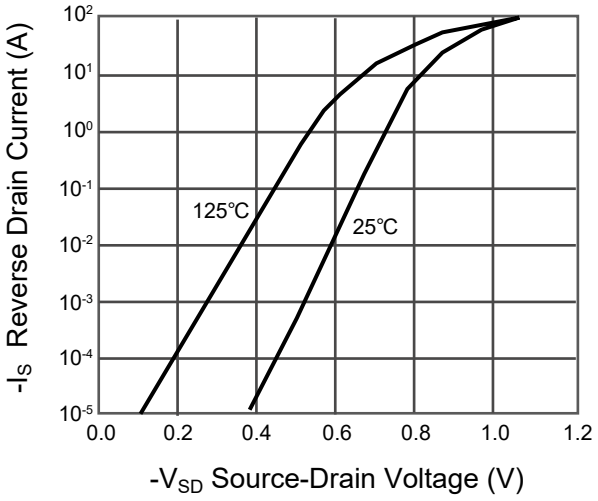



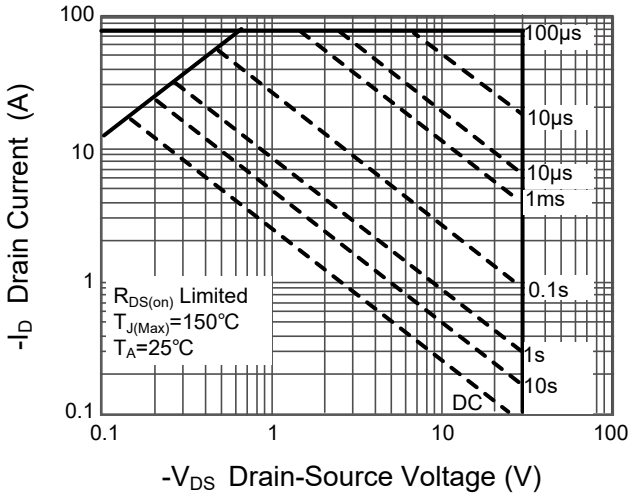



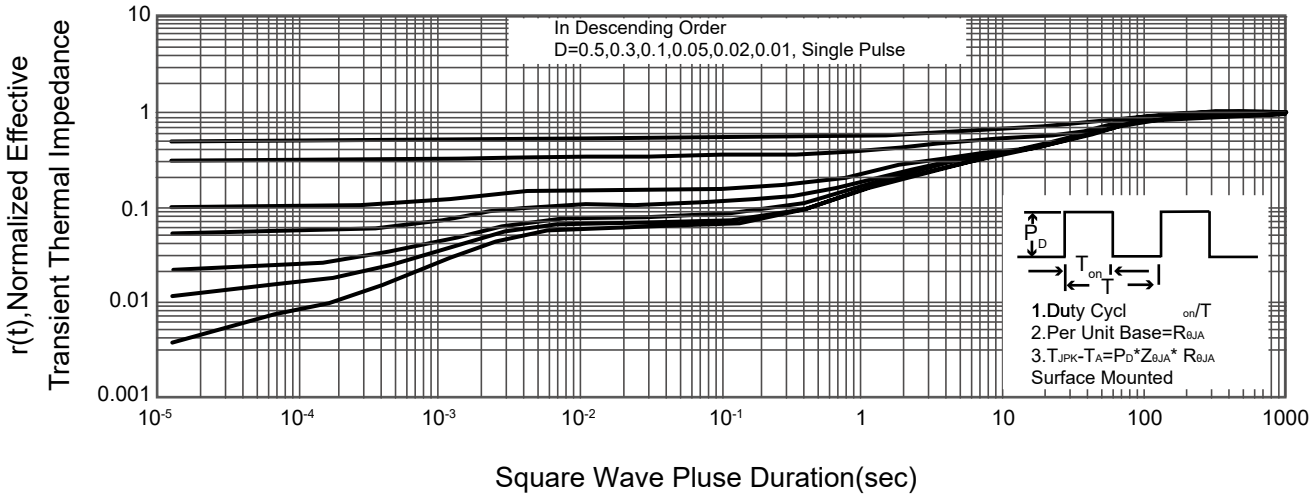





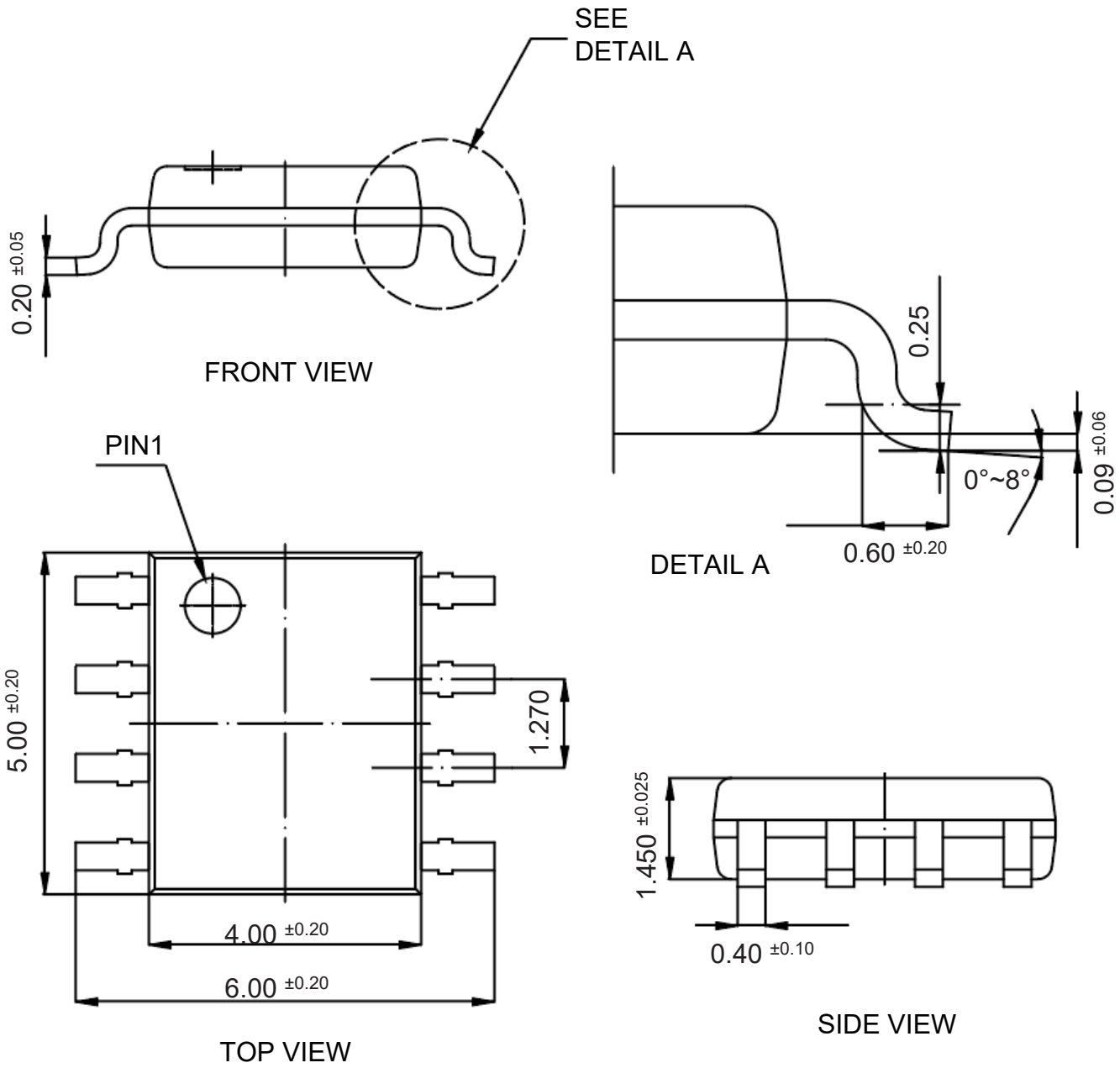



## Package Outline

SOP-8

Dimensions in mm




## Ordering Information

| Device | Package | Shipping |
|---|---|---|
| TN15P30PA | SOP-8 | 4,000PCS/Reel&13inches |

## Contact Information

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

For additional information, please contact your local Sales Representative.



