TN12P30PA
P-Channel Enhancement Mode Power MOSFET

Features

- High density cell design for ultra low $R_{DS(on)}$
- Excellent package for good heat dissipation
- V_{DS}= -30V,I_D= -12A
  $R_{DS(on)}$< 10.5mΩ @V_{GS}= -10V

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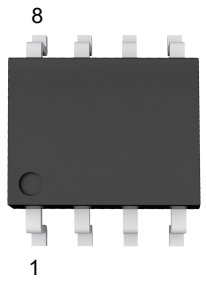
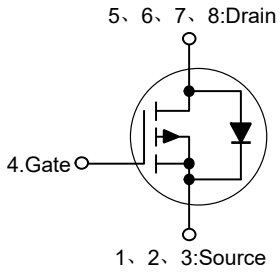


Marking code: 4407

Applications

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

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	$-I_D$	12	A
Drain Current-Pulsed Note1	$-I_{DM}$	48	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

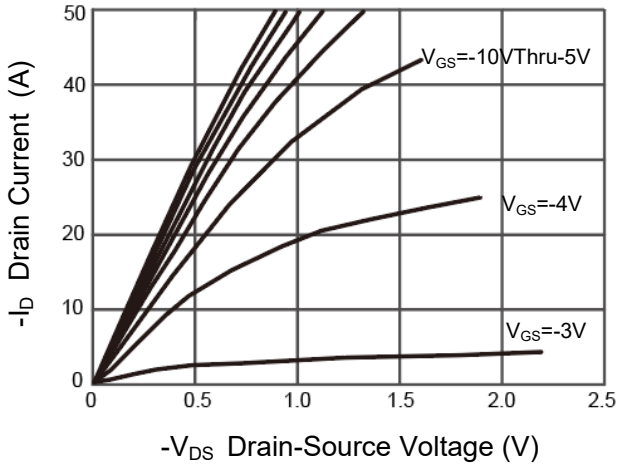
Electrical Characteristics

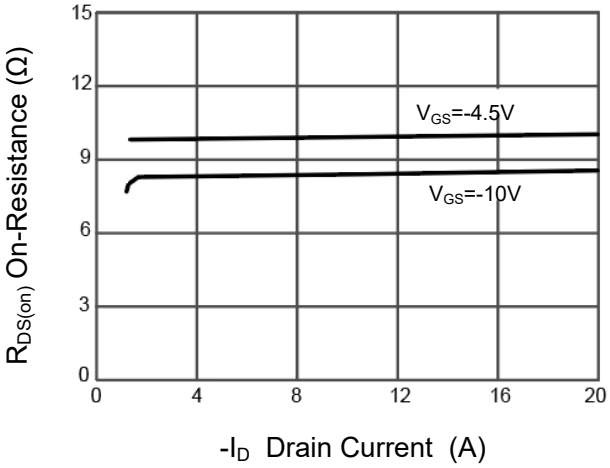
(Ta=25℃ unless otherwise specified)

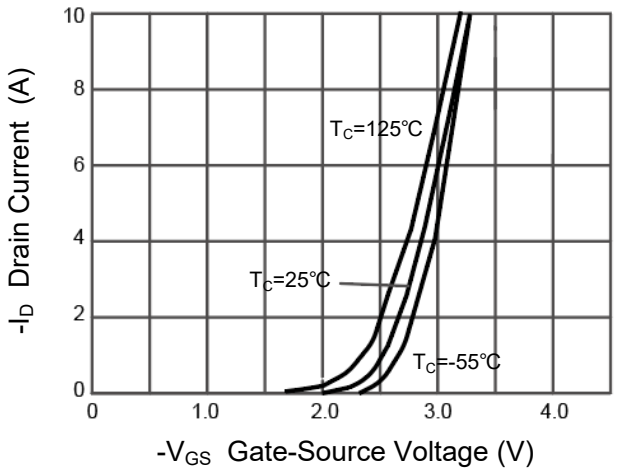
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	V_{GS}=0V,I_D=-250μA	30	--	--	V
Zero Gate Voltage Drain Current	$-I_{DSS}$	V_{DS}=-30V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	--	--	±100	nA
Gate Threshold Voltage Note3	$-V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	1	--	3	V
Drain-Source On-Resistance Note3	$R_{DS(on)}$	V_{GS}=-10V,I_D=-12A	--	8.5	10.5	mΩ
		V_{GS}=-4.5V,I_D=-10A	--	10	12	mΩ
Forward Transconductance Note3	g_{FS}	V_{DS}=-5V,I_D=-10A	20	--	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz	--	1800	--	pF
Output Capacitance	C_{oss}		--	220	--	pF
Reverse Transfer Capacitance	C_{rss}		--	180	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-15V,V_{GS}=-10V I_D=-10A, R_{GEN}=3Ω	--	10	--	nS
Turn-on Rise Time	t_r		--	9	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	26	--	nS
Turn-off Fall Time	t_f		--	11	--	nS
Total Gate Charge	Q_g	V_{DS}=-15V,V_{GS}=-10V I_D=-10A	--	25	--	nC
Gate-Source Charge	Q_{gs}		--	4	--	nC
Gate-Drain Charge	Q_{gd}		--	6	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage Note3	$-V_{SD}$	V_{GS}=0V,I_S=-12A	--	--	1.5	V
Diode Forward Current Note2	$-I_S$		--	--	12	A

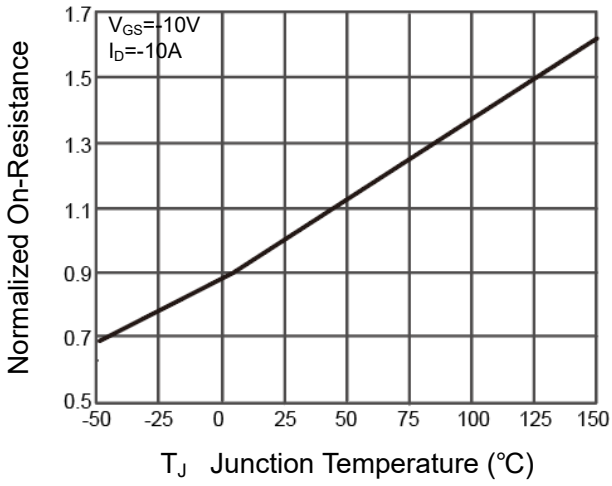
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2.Surface Mounted on FR4 Board, t ≤ 10 sec.
3.Pulse Test: Pulse width≤300μs, duty cycle≤2%

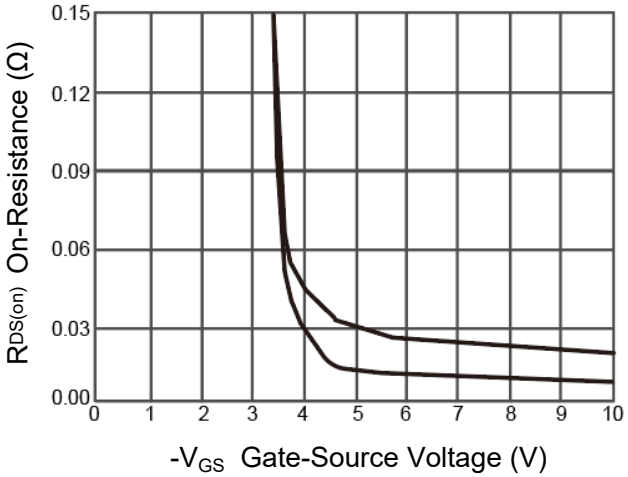
Typical Characteristic Curves

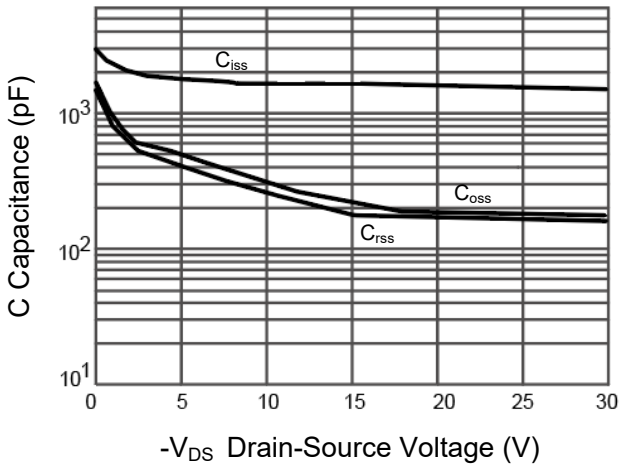


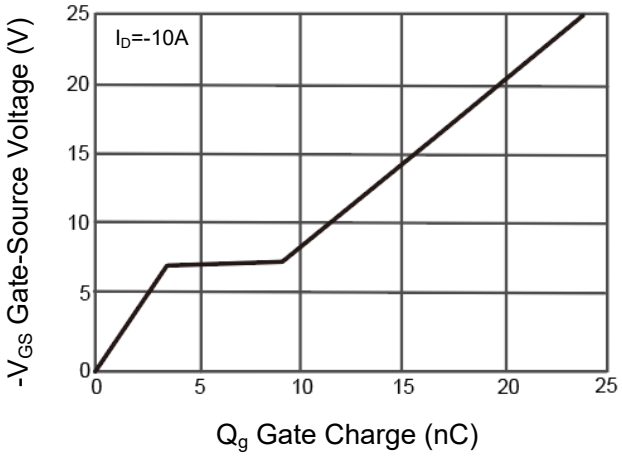


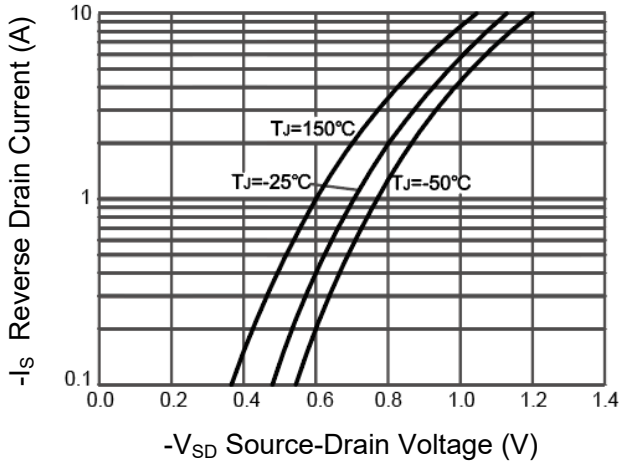


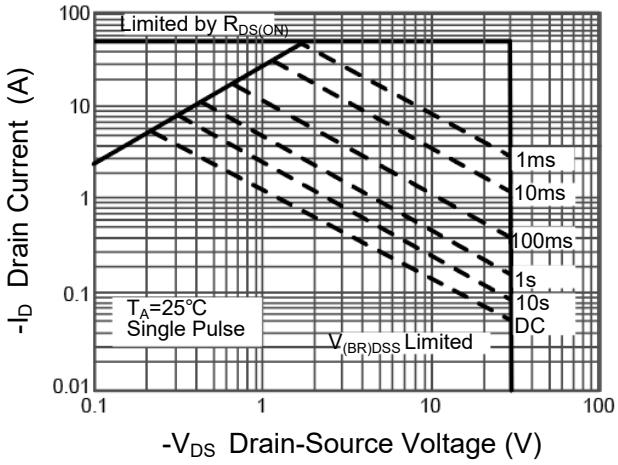


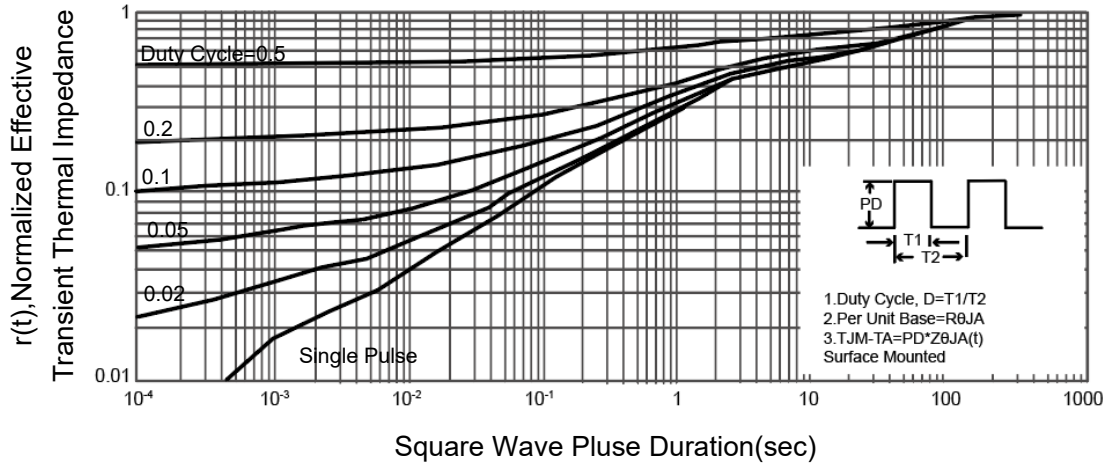












Package Outline

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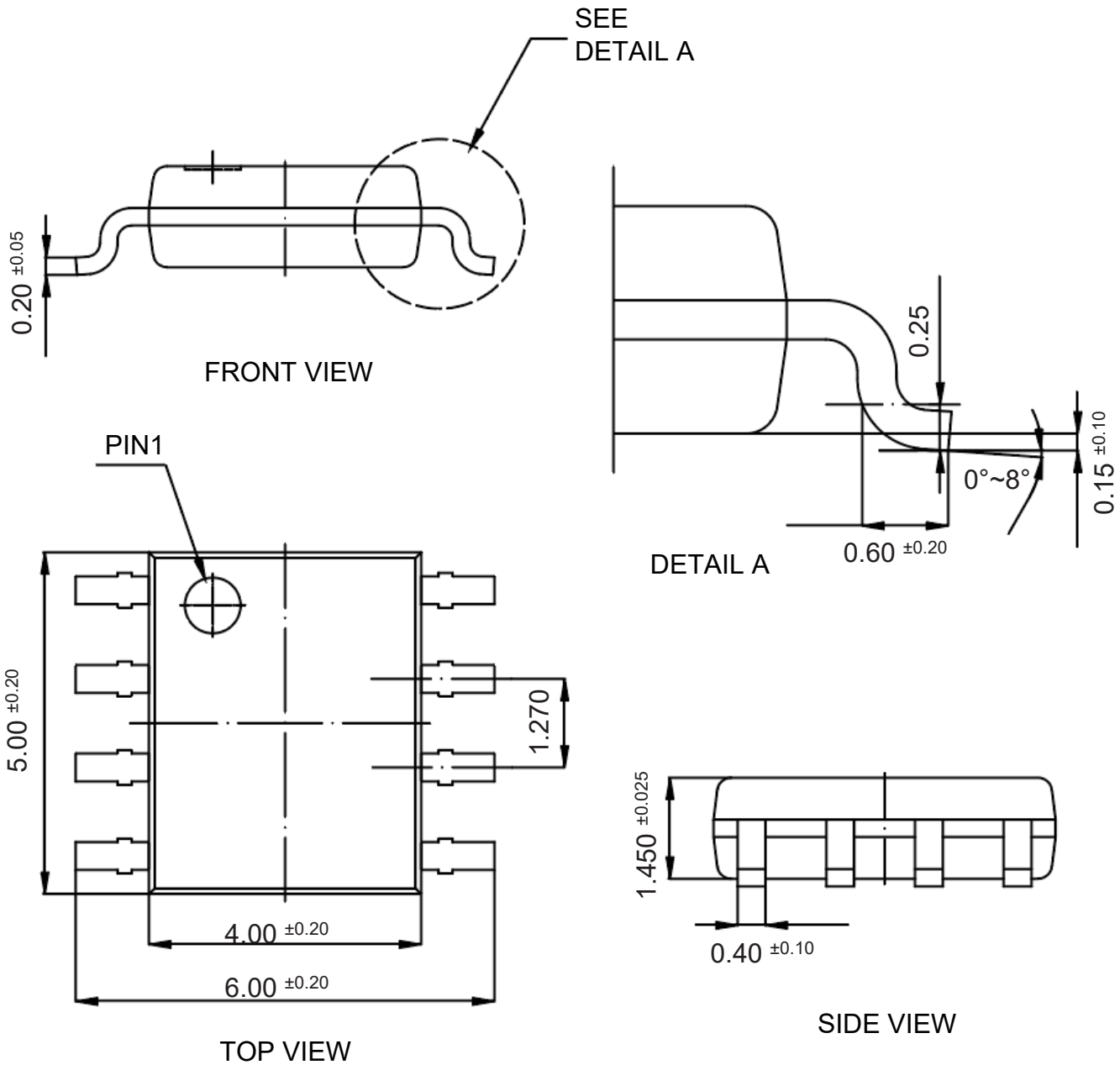
Dimensions in mm



Ordering Information

Device	Package	Shipping
TN12P30PA	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.

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