TN05P40PA

P-Channel Enhancement Mode Power MOSFET

Product Summary

- V_{DS}= -40V,I_D= -5A
- $R_{DS(on)}$< 85mΩ @V_{GS}= -10V
- $R_{DS(on)}$< 100mΩ @V_{GS}= -4.5V

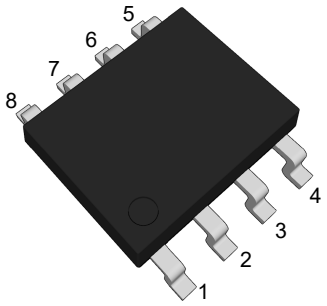
Features

- 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

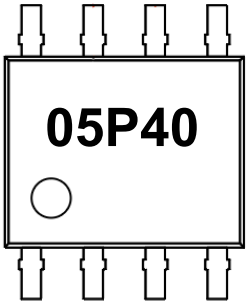
SOP-8



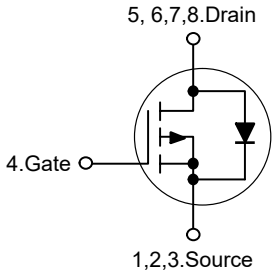
(Top View)

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

Marking Code



Schematic Diagram



Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter		Symbol	Value	Unit
Drain-Source Voltage		$-V_{DS}$	40	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current-Continuous	T_A = 25°C	$-I_D$	5	A
Drain Current-Pulsed Note1		$-I_{DM}$	20	A
Maximum Power Dissipation	T_A = 25°C	P_D	3.7	W
Junction Temperature		T_J	150	°C
Storage Temperature Range		T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance,Junction-to-Ambient	$R_{\theta JA}$	33.8	°C/W

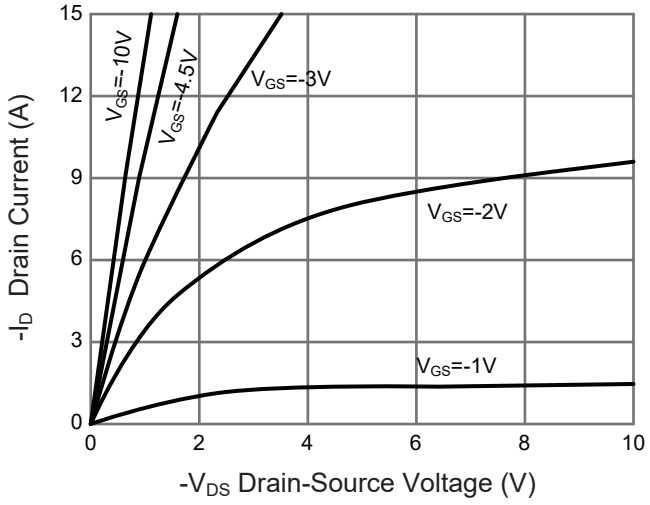
Electrical Characteristics

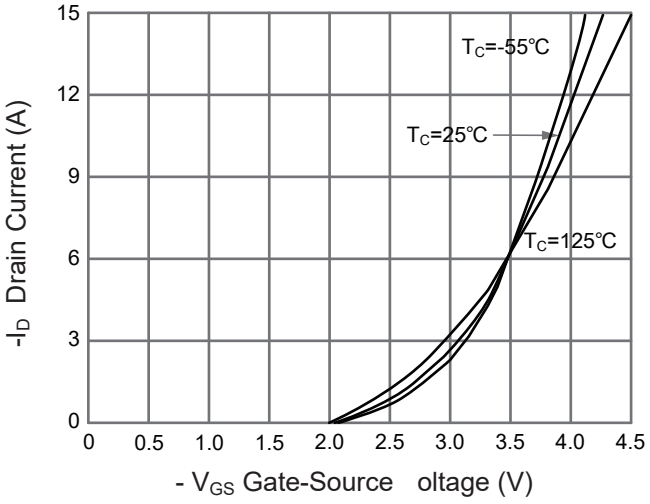
(T_J=25℃ unless otherwise specified)

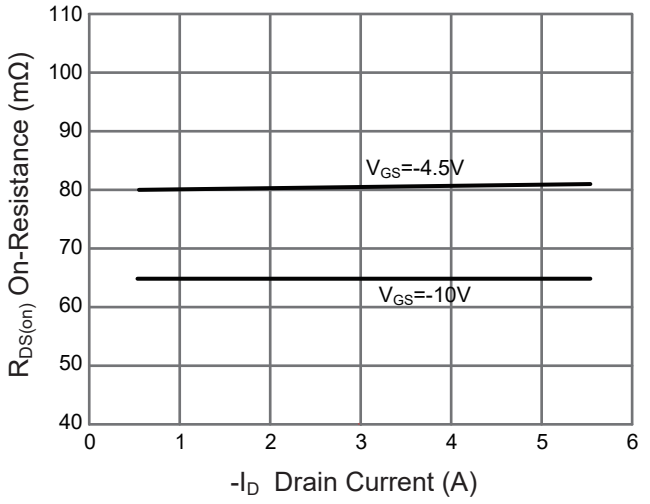
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	V_{GS}=0V,I_D=-250μA	40	--	--	V
Zero Gate Voltage Drain Current	$-I_{DSS}$	V_{DS}=-40V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	--	--	±100	nA
Gate Threshold Voltage Note2	$-V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	1.0	--	2.5	V
Drain-Source On-Resistance Note2	$R_{DS(on)}$	V_{GS}=-10V,I_D=-3A	--	--	85	mΩ
		V_{GS}=-4.5V,I_D=-2A	--	--	100	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-20V,V_{GS}=0V,f=1MHz	--	573	--	pF
Output Capacitance	C_{oss}		--	53	--	pF
Reverse Transfer Capacitance	C_{rss}		--	42	--	pF
Total Gate Charge	Q_g	V_{DS}=-20V,I_D=-3A, V_{GS}=10V	--	7.1	--	nC
Gate-Source Charge	Q_{gs}		--	1.5	--	nC
Gate-Drain Charge	Q_{gd}		--	1.8	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-20V, I_D=-5A, V_{GS}=-10V, R_{GEN}=2.5Ω	--	6.5	--	nS
Turn-on Rise Time	t_r		--	14	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	34	--	nS
Turn-off Fall Time	t_f		--	18	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage Note2	$-V_{SD}$	V_{GS}=0V,I_S=-5A	--	--	1.2	V
Diode Forward Current	$-I_S$		--	--	5	A

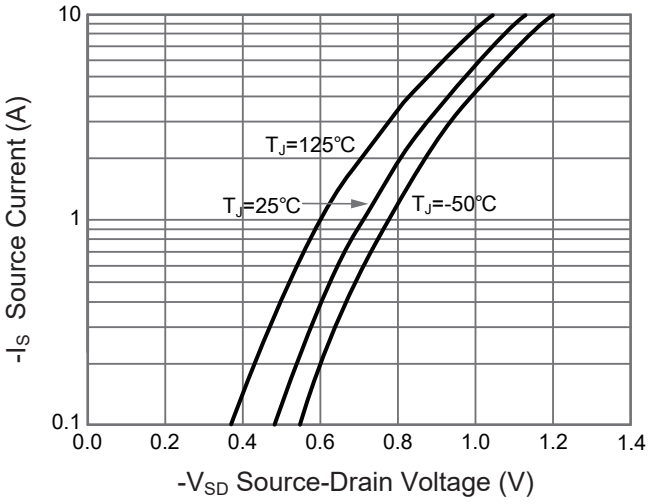
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Pulse Test: Pulse width≤300μs, duty cycle≤2%.

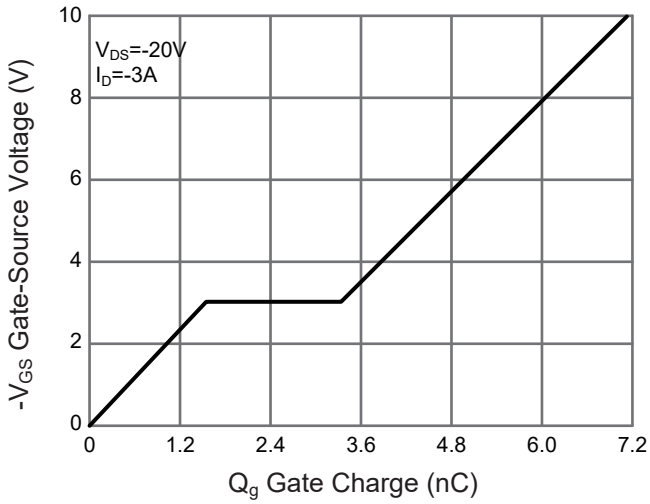
Typical Characteristic Curves

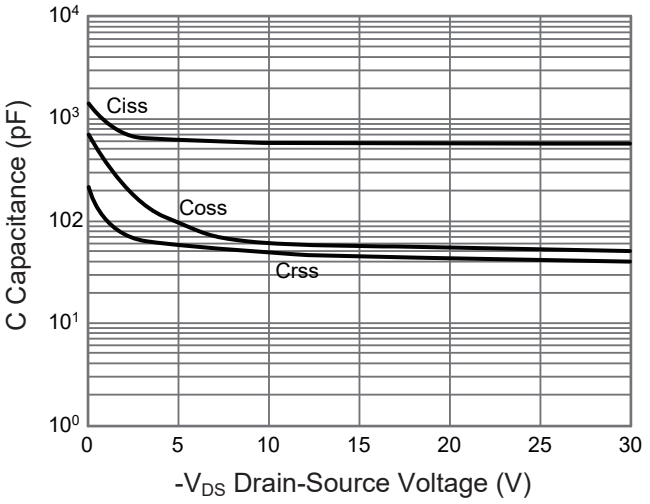


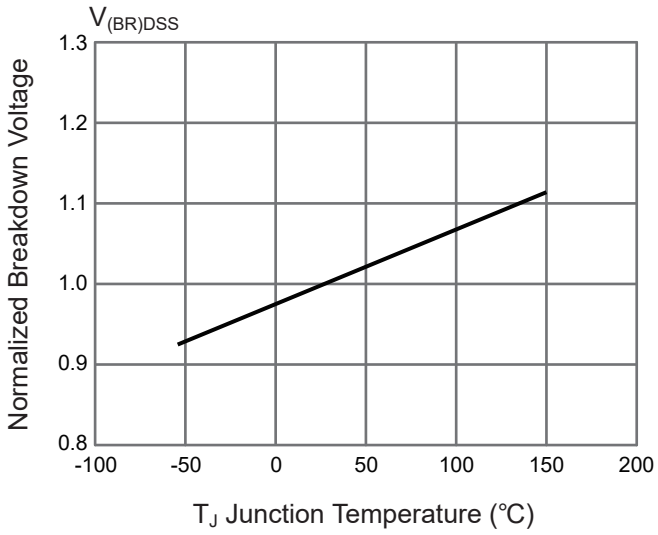


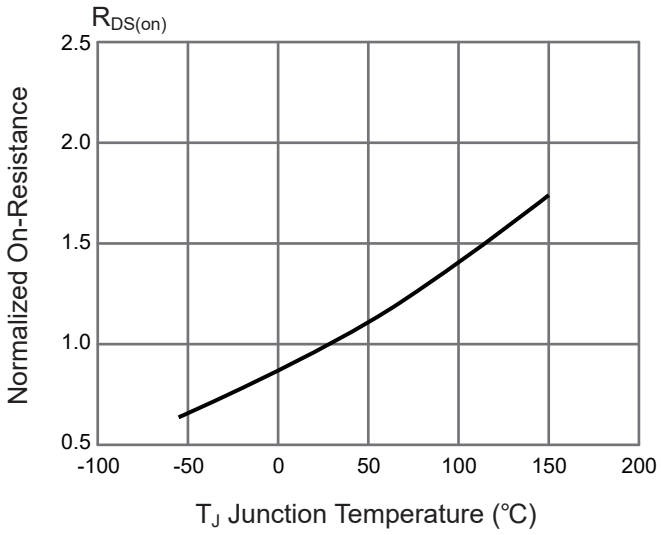


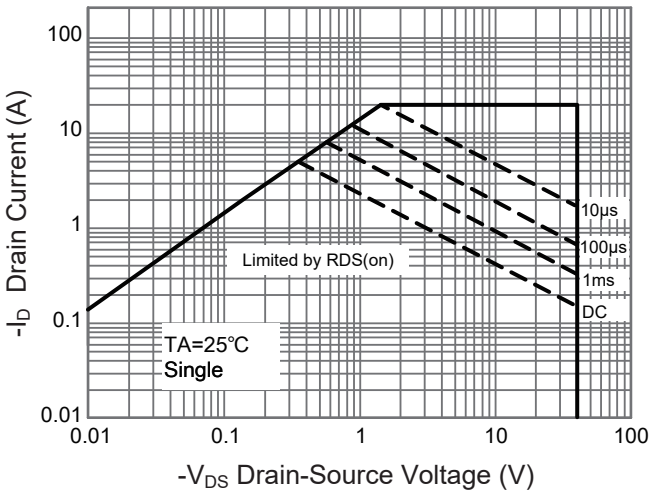








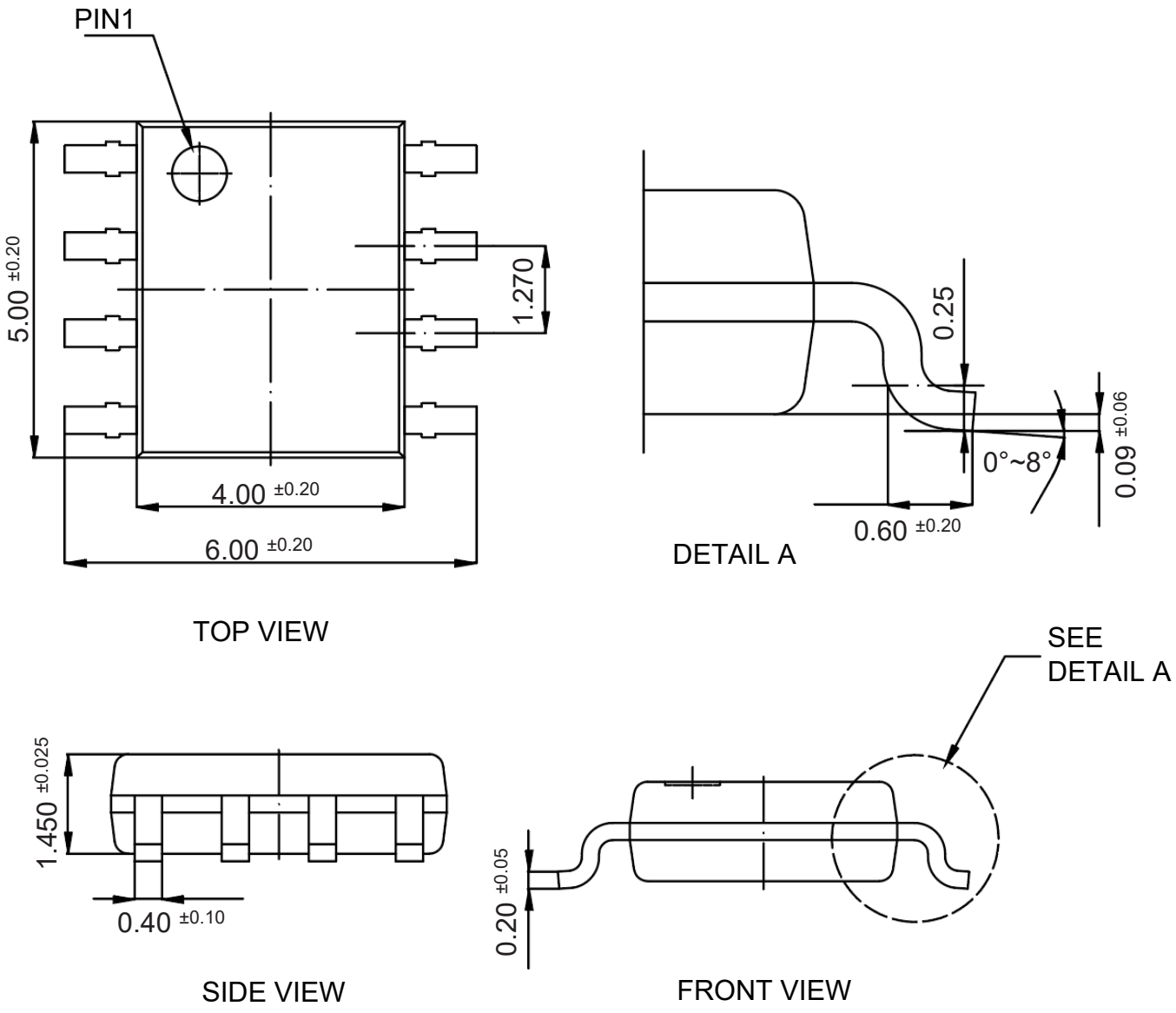




Package Outline

SOP-8

Dimensions in mm



Ordering Information

Device	Package	Shipping
TN05P40PA	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.

