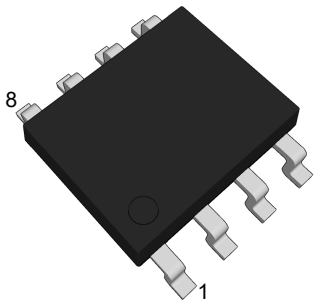
TNG07N40PA

N-Channel Enhancement Mode Power MOSFET

Product Summary

- V_{DS}= 40V,I_D= 7A
- $R_{DS(on)}$< 18mΩ @V_{GS}= 10V
- $R_{DS(on)}$< 25mΩ @V_{GS}= 4.5V

SOP-8



(Top View)

Features

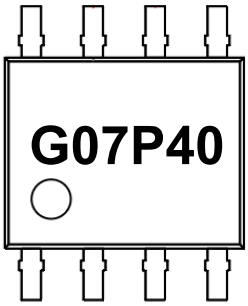
- Advanced Split Gate Trench Technology
- 100% Avalanche Tested
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

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

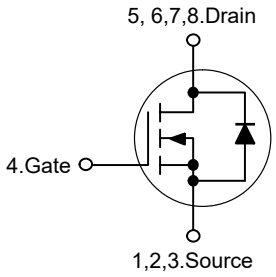
Application

- Load Switch
- PWM Application
- 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}	40	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	7	A
Drain Current-Pulsed Note1	I_{DM}	27.2	A
Maximum Power Dissipation	P_D	2.0	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance,Junction-to-Ambient Note2	$R_{\theta JA}$	62.5	°C/W

Electrical Characteristics

(T_J=25℃ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250uA	40			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=40V, V_{GS}=0V			1.0	uA
Gate-to-source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS}=V_{DS}, I_D=250uA	1.0	1.5	2.2	V
Drain-to-source On-resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=6A		15	18	mΩ
		V_{GS}=4.5V, I_D=5A		20	25	
Forward Trans conductance	g_{FS}	V_{DS}=5.0V, I_D=6A			40	S
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C_{ISS}	V_{GS}=0V, f=1MHz, V_{DS}=20V		410		pF
Output Capacitance	C_{OSS}			100		
Reverse Transfer Capacitance	C_{RSS}			35		
Total Gate Charge	$Q_{G(TOT)}$	V_{GS}=10V, V_{DS}=20V, I_D=6A		8.5		nC
Gate-to-Source Charge	Q_{GS}			1.2		
Gate-to-Drain Charge	Q_{GD}			2.4		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{d(ON)}$	V_{GS}=10V, V_{DS}=20V, R_L=3.3Ω, R_{GEN}=3Ω		4.4		ns
Rise Time	t_r			3.3		
Turn-Off Delay Time	$t_{d(OFF)}$			15.8		
Fall Time	t_f			3.2		
BODY DIODE CHARACTERISTICS						
Forward Voltage	V_{SD}	V_{GS}=0V, I_S=1.0A	0.45		1.5	V

Typical Characteristic Curves

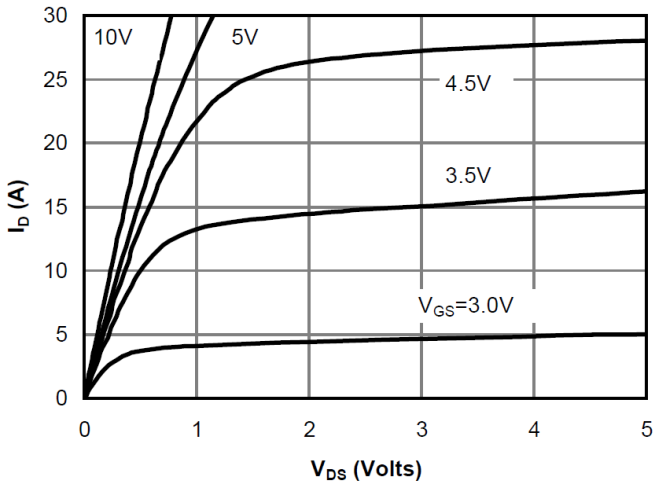


Fig 1: On-Region Characteristics

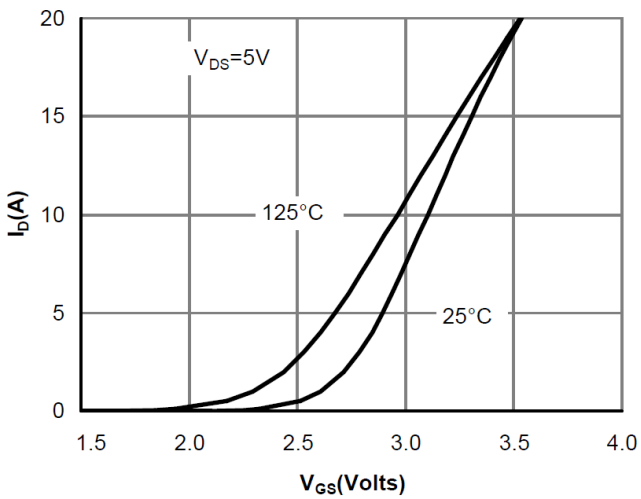


Figure 2: Transfer Characteristics

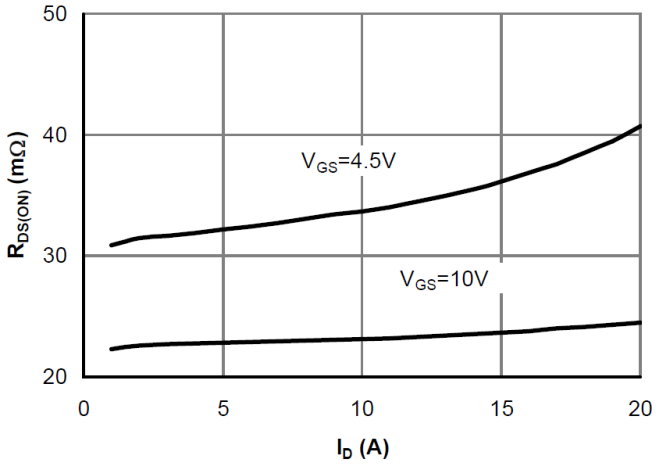


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

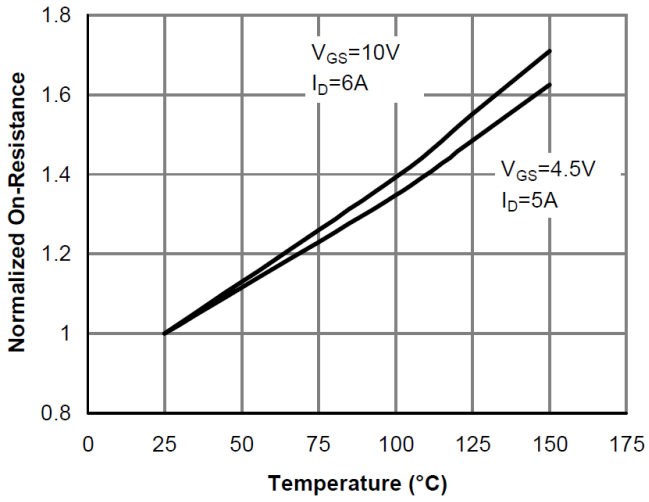


Figure 4: On-Resistance vs. Junction Temperature

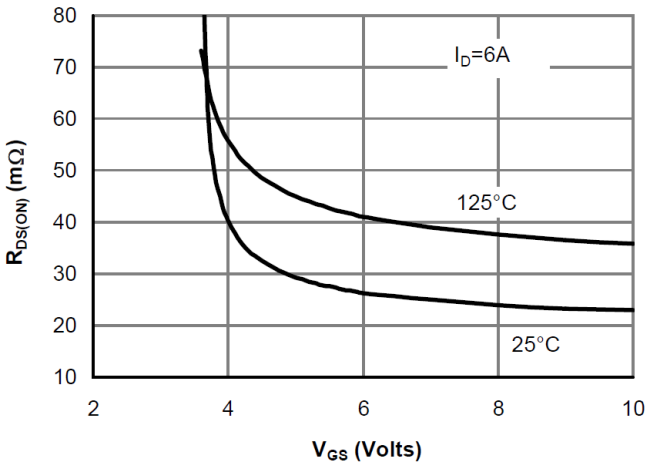


Figure 5: On-Resistance vs. Gate-Source Voltage

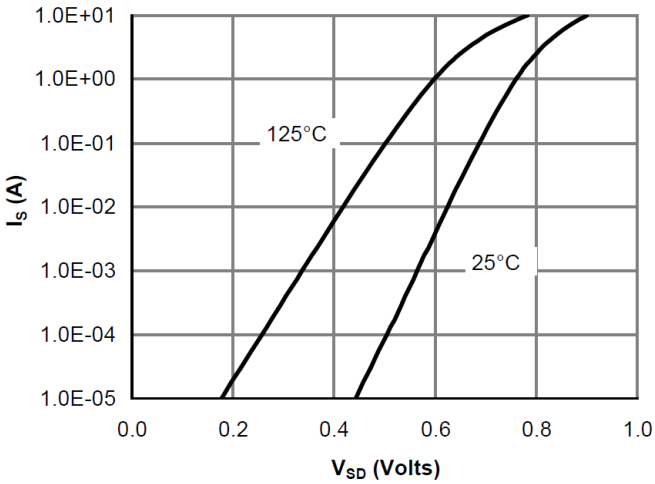


Figure 6: Body-Diode Characteristics

Typical Characteristic Curves

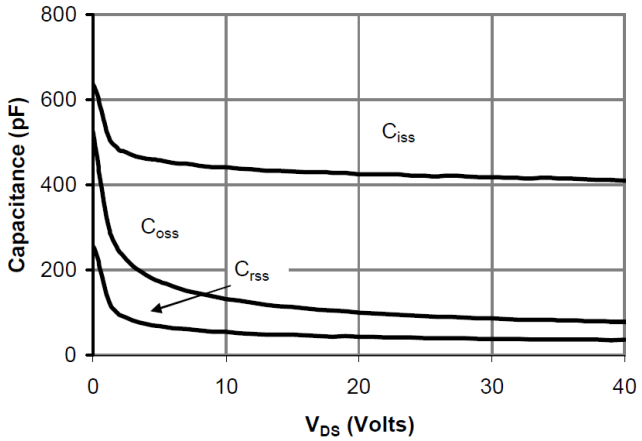
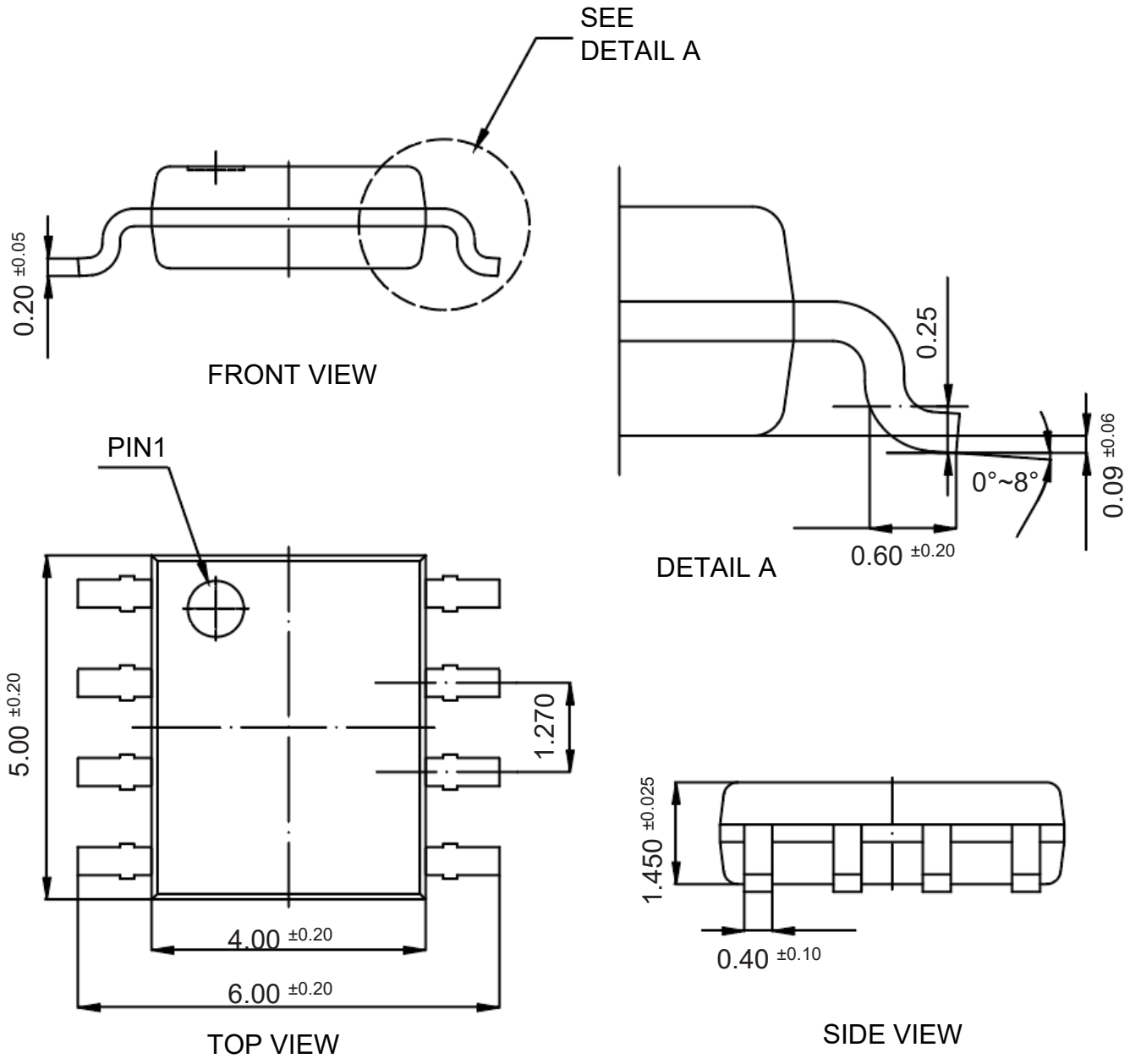


Figure 7: Capacitance Characteristics

Package Outline

SOP-8 Dimensions in mm



Ordering Information

Device	Package	Shipping
TNG07N40PA	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.