

Product Summary

- $V_{DS} = 100V, I_D = 10A$
- $R_{DS(on)} < 28m\Omega @ V_{GS} = 10V$
- $R_{DS(on)} < 31m\Omega @ V_{GS} = 4.5V$

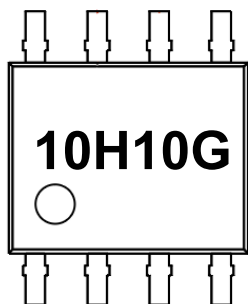
Features

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

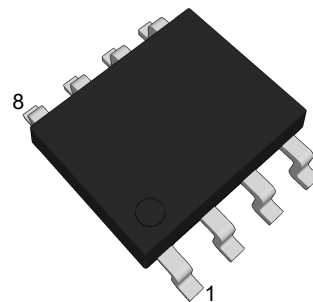
Application

- Load Switch
- PWM Application
- Power Management

Marking Code



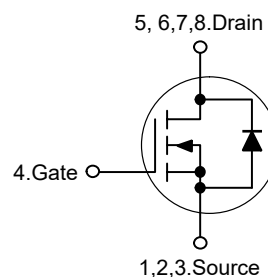
SOP-8



(Top View)

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

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	10	A
Drain Current-Pulsed ^{Note1}	I_{DM}	60	A
Maximum Power Dissipation	P_D	3.1	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance,Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	40	°C/W
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Electrical Characteristics

(T_J=25°C unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	100	---	---	V
ΔBV _{DSS} /ΔT _J	BVDSS Temperature Coefficient	Reference to 25°C, I _D =1mA	---	0.0	---	V/°C
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =10A	---	22	28	mΩ
		V _{GS} =4.5V, I _D =6.5A	---	25	31	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1.5	2.0	2.5	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	-		mV/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =80V, V _{GS} =0V, T _J =25°C	---	-	10	uA
		V _{DS} =80V, V _{GS} =0V, T _J =55°C	---	-	100	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	-	±100	nA
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	0.65	1.0	Ω
Q _g	Total Gate Charge (10V)	V _{DS} =80V, V _{GS} =10V, I _D =10A	---	28	---	nC
Q _{gs}	Gate-Source Charge		---	9	---	
Q _{gd}	Gate-Drain Charge		---	10	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V, V _{GEN} =10V, R _G =6Ω I _D =1A, R _L =30Ω	---	12	---	ns
T _r	Rise Time		---	4	---	
T _{d(off)}	Turn-Off Delay Time		---	17	---	
T _f	Fall Time		---	5	---	
C _{iss}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	---	1769	---	pF
C _{oss}	Output Capacitance		---	164	---	
C _{rss}	Reverse Transfer Capacitance		---	53	---	

Guaranteed Avalanche Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
EAS	Single Pulse Avalanche Energy ⁵	V _{DD} =25V, L=0.3mH, I _{AS} =10A	30	---	---	mJ

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current ^{1,6}	V _G =V _D =0V, Force Current	---	-	5	A
I _{SM}	Pulsed Source Current ^{2,6}		---	---	30	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =6A, T _J =25°C	---	-	1.1	V
t _{rr}	Reverse Recovery Time	IF=10A, dI/dt=100A/μs, T _J =25°C	---	27	---	nS
Q _{rr}	Reverse Recovery Charge		---	28	---	nC

Note :

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper, t<10sec.
- 2.The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%
- 3.The EAS data shows Max. rating. The test condition is V_{DD}=25V, V_{GS}=10V, L=0.3mH, I_{AS}=10A
- 4.The power dissipation is limited by 150°C junction temperature
- 5.The Min. value is 100% EAS tested guarantee.
- 6.The data is theoretically the same as I_D and I_{DM}, in real applications, should be limited by total power dissipation.

Typical Characteristic Curves

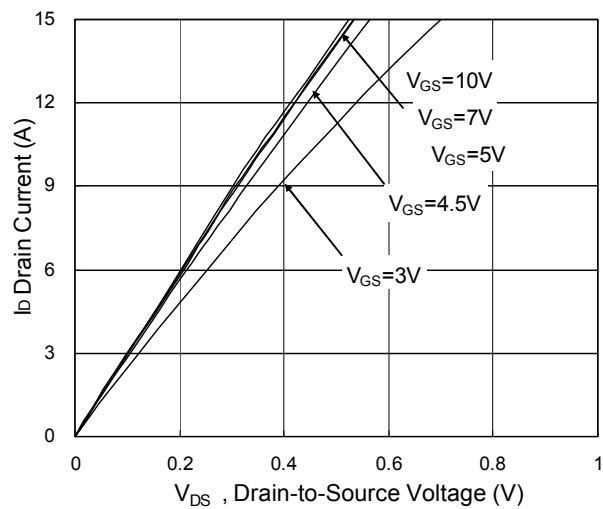


Fig.1 Typical Output Characteristics

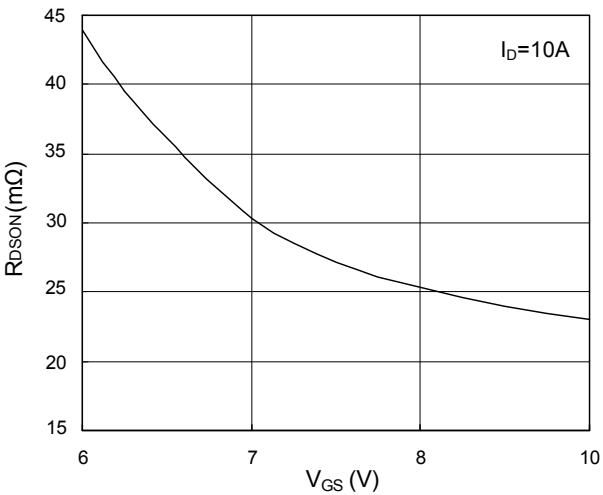


Fig.2 On-Resistance vs. Gate-Source

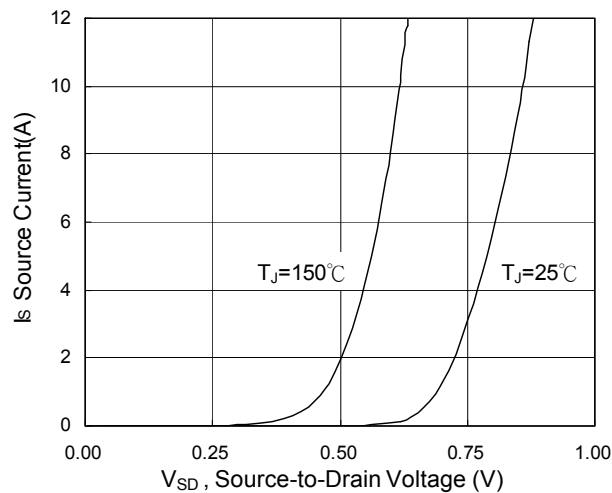


Fig.3 Forward Characteristics Of Reverse

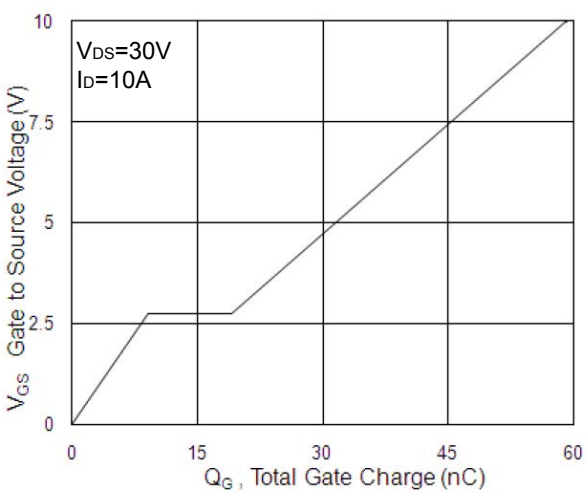


Fig.4 Gate-Charge Characteristics

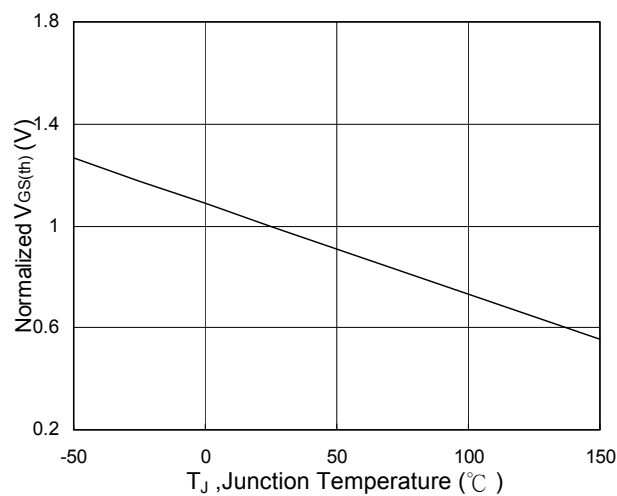


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

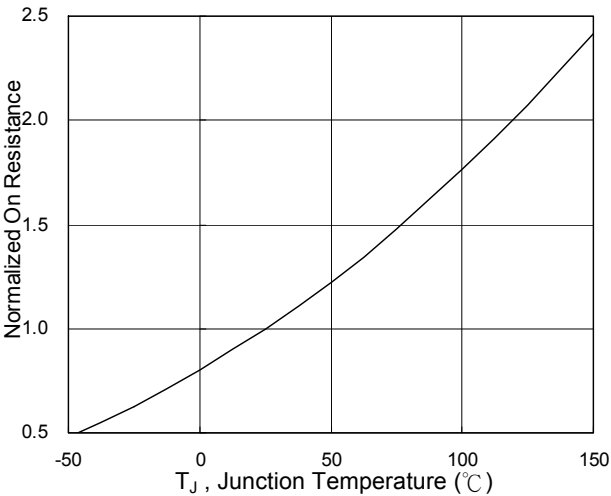


Fig.6 Normalized $R_{DS(on)}$ vs. T_J

Typical Characteristic Curves

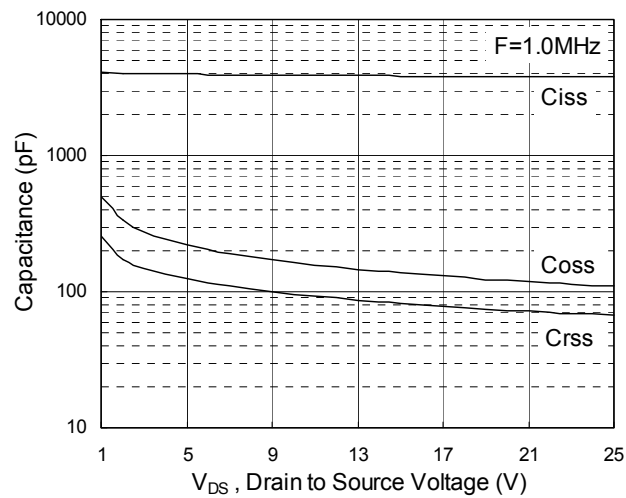


Fig.7 Capacitance

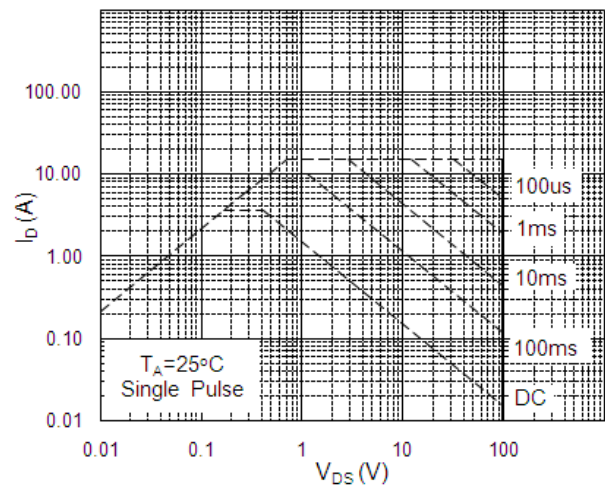


Fig.8 Safe Operating Area

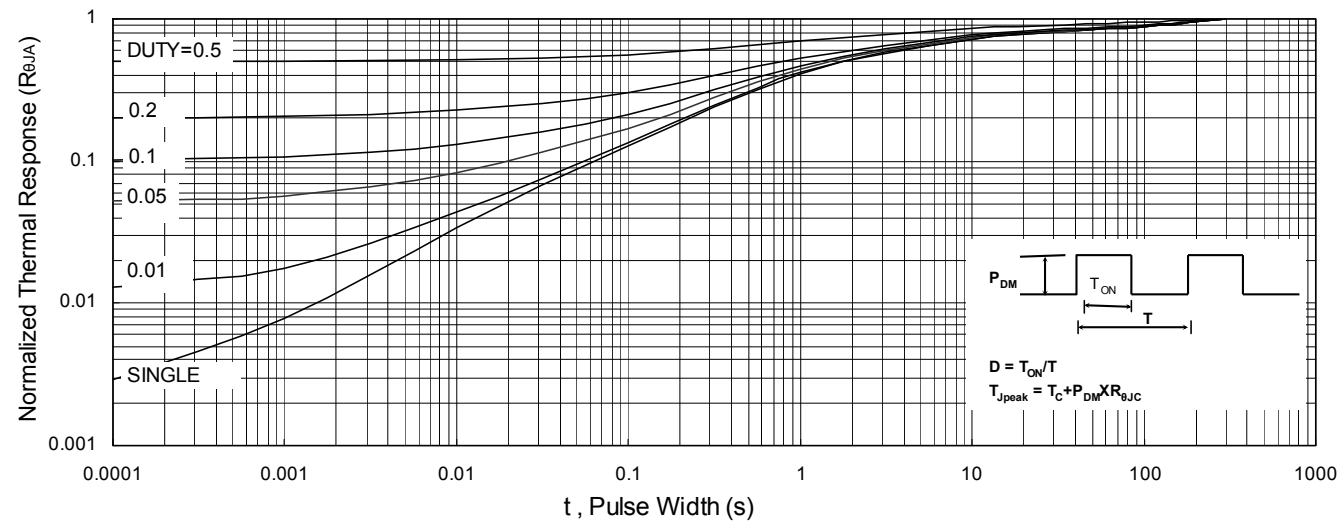


Fig.9 Normalized Maximum Transient Thermal Impedance

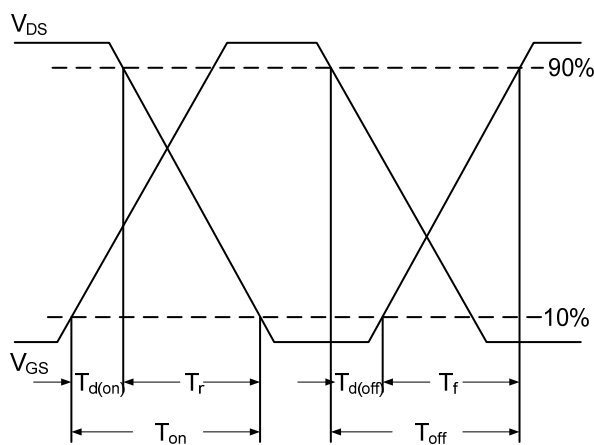


Fig.10 Switching Time Waveform

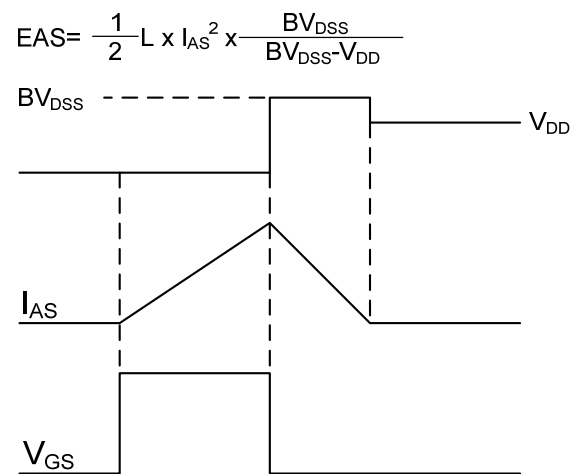
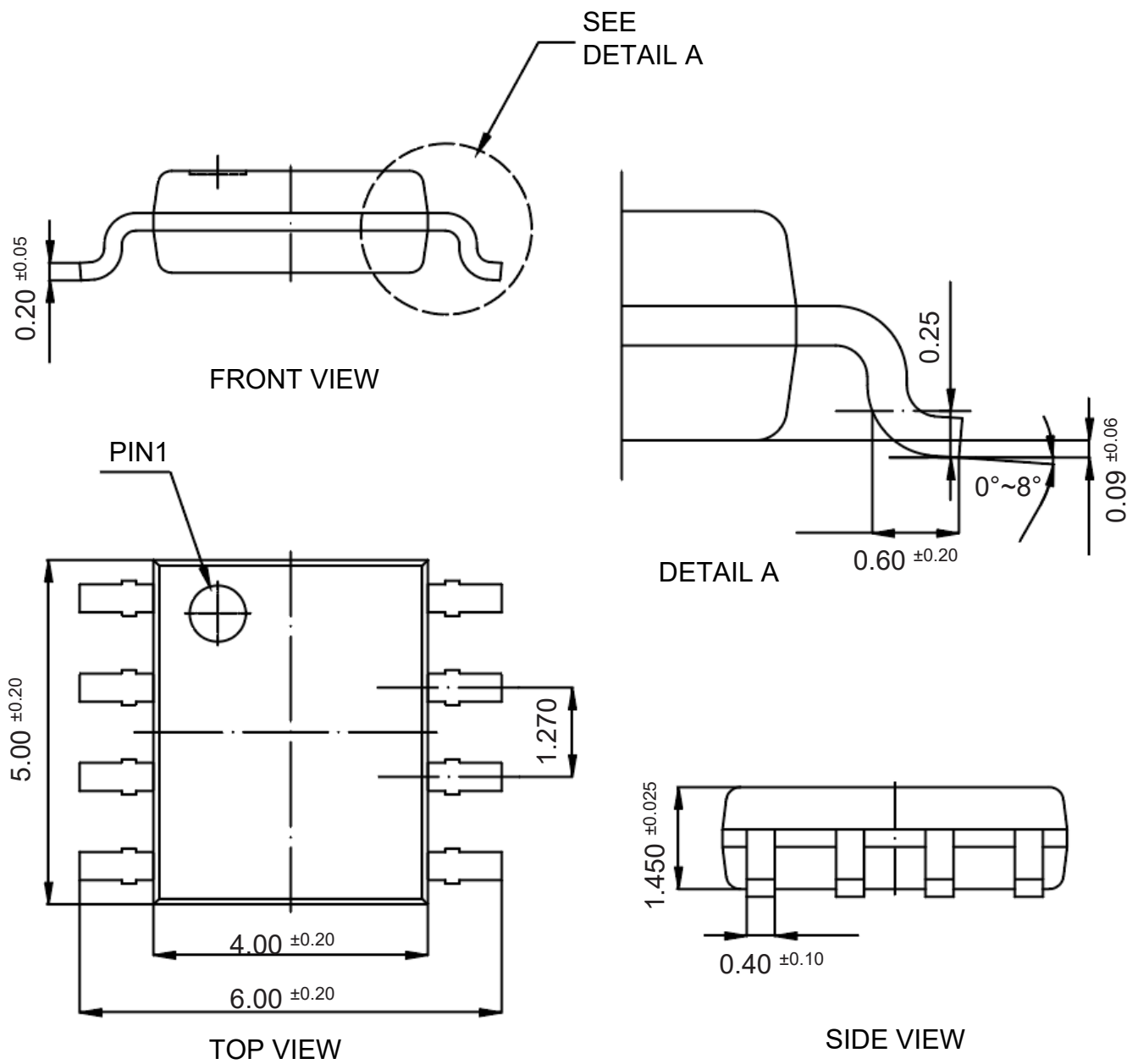


Fig.11 Unclamped Inductive Switching Waveform

Package Outline

SOP-8 Dimensions in mm



Ordering Information

Device	Package	Shipping
TNG10H10NPA	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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