

TN9926JNPA

Dual N-Channel Enhancement Mode Power MOSFET

SOP-8

Product Summary

- $V_{DS} = 20V, I_D = 6A$
- $R_{DS(on)} < 28m\Omega @ V_{GS} = 4.5V$
- $R_{DS(on)} < 38m\Omega @ V_{GS} = 2.5V$

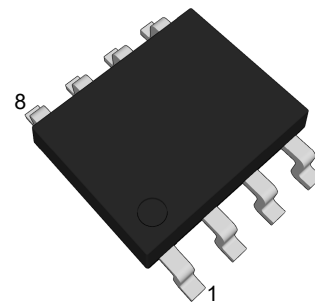
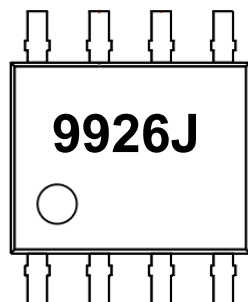
Features

- Advanced Trench Technology
- RoHS and Reach Compliant
- Halogen and Antimony Free
- Moisture Sensitivity Level 3

Application

- Power Switching Application
- Hard Switched and High Frequency Circuits
- Uninterruptible Power Supply

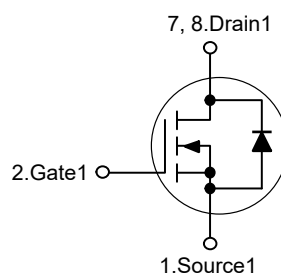
Marking Code



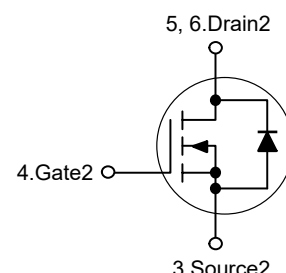
(Top View)

Pin	Description	Pin	Description
1	Source1	4	Gate2
2	Gate1	5,6	Drain2
3	Source2	7,8	Drain1

Schematic Diagram



N-Channel



N-Channel

Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	6	A
Drain Current-Pulsed ^{Note1}	I_{DM}	35	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
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Electrical Characteristics

(T_J=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate Body Leakage Current, Forward	I_{GSSF}	$V_{GS} = 12V, V_{DS} = 0V$			100	nA
Gate Body Leakage Current, Reverse	I_{GSSR}	$V_{GS} = -12V, V_{DS} = 0V$			-100	nA
On Characteristics ^c						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}, I_D = 250\mu A$	0.5		1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 6A$		21	28	m Ω
		$V_{GS} = 2.5V, I_D = 5.2A$		32	38	m Ω
Dynamic Characteristics ^d						
Input Capacitance	C_{iss}	$V_{DS} = 8V, V_{GS} = 0V, f = 1.0\text{ MHz}$		720		pF
Output Capacitance	C_{oss}			130		pF
Reverse Transfer Capacitance	C_{rss}			95		pF
Switching Characteristics ^d						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10V, I_D = 1A, V_{GS} = 4.5V, R_{GEN} = 6\Omega$		10	20	ns
Turn-On Rise Time	t_r			7	14	ns
Turn-Off Delay Time	$t_{d(off)}$			34	68	ns
Turn-Off Fall Time	t_f			6	12	ns
Total Gate Charge	Q_g	$V_{DS} = 10V, I_D = 6A, V_{GS} = 4.5V$		6.8	8.8	nC
Gate-Source Charge	Q_{gs}			0.5		nC
Gate-Drain Charge	Q_{gd}			1.8		nC
Drain-Source Diode Characteristics and Maximun Ratings						
Drain-Source Diode Forward Current ^b	I_S				1.7	A
Drain-Source Diode Forward Voltage ^c	V_{SD}	$V_{GS} = 0V, I_S = 1.7A$			1.2	V
Notes : a.Repetitive Rating : Pulse width limited by maximum junction temperature. b.Surface Mounted on FR4 Board, t ≤ 10 sec. c.Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%. d.Guaranteed by design, not subject to production testing.						

Typical Characteristic Curves

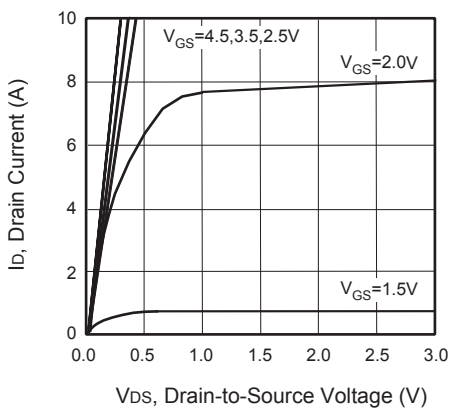


Figure 1. Output Characteristics

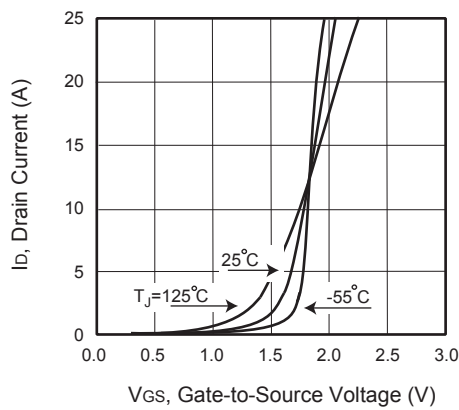


Figure 2. Transfer Characteristics

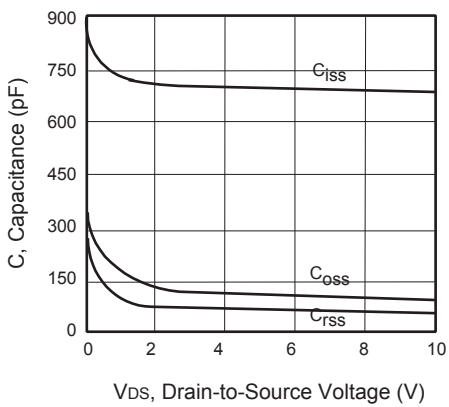


Figure 3. Capacitance

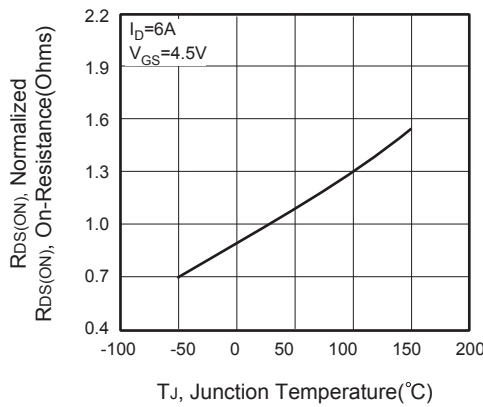


Figure 4. On-Resistance Variation with Temperature

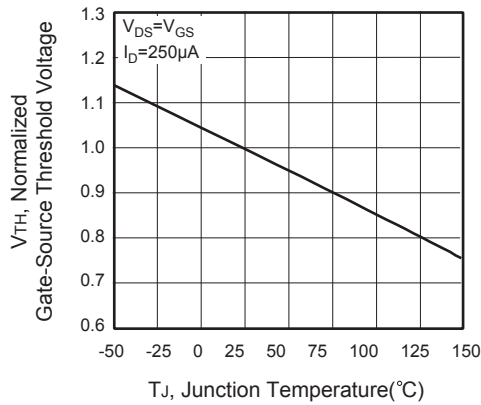


Figure 5. Gate Threshold Variation with Temperature

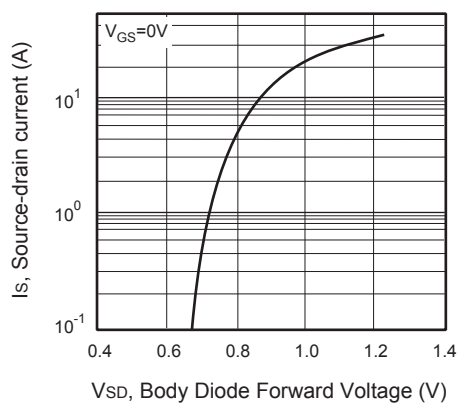
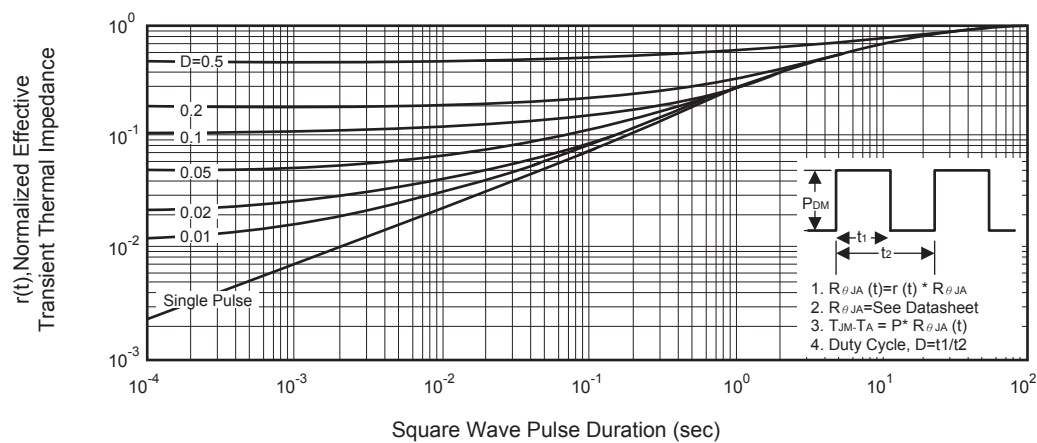
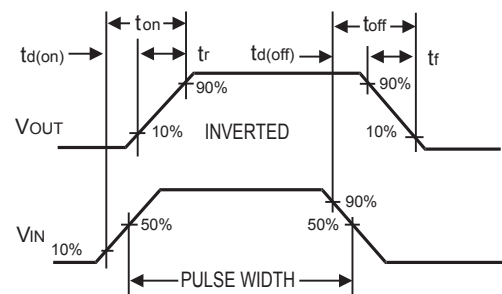
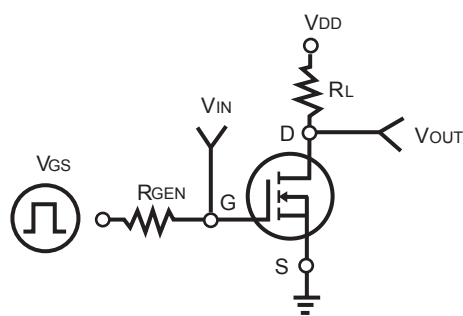
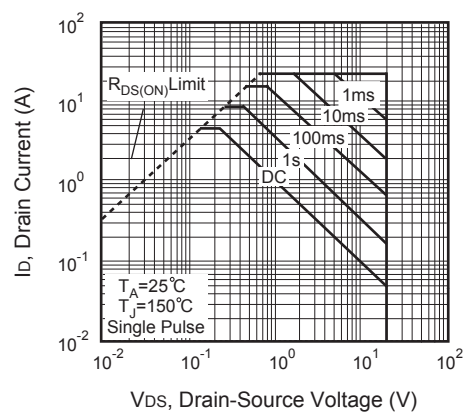
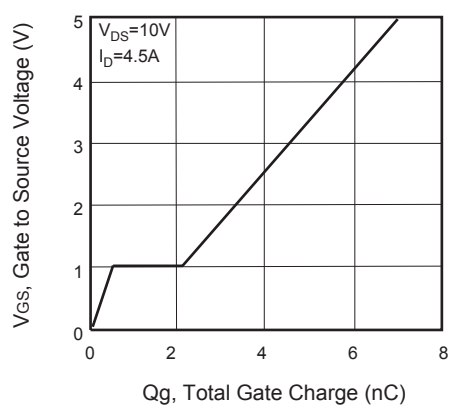


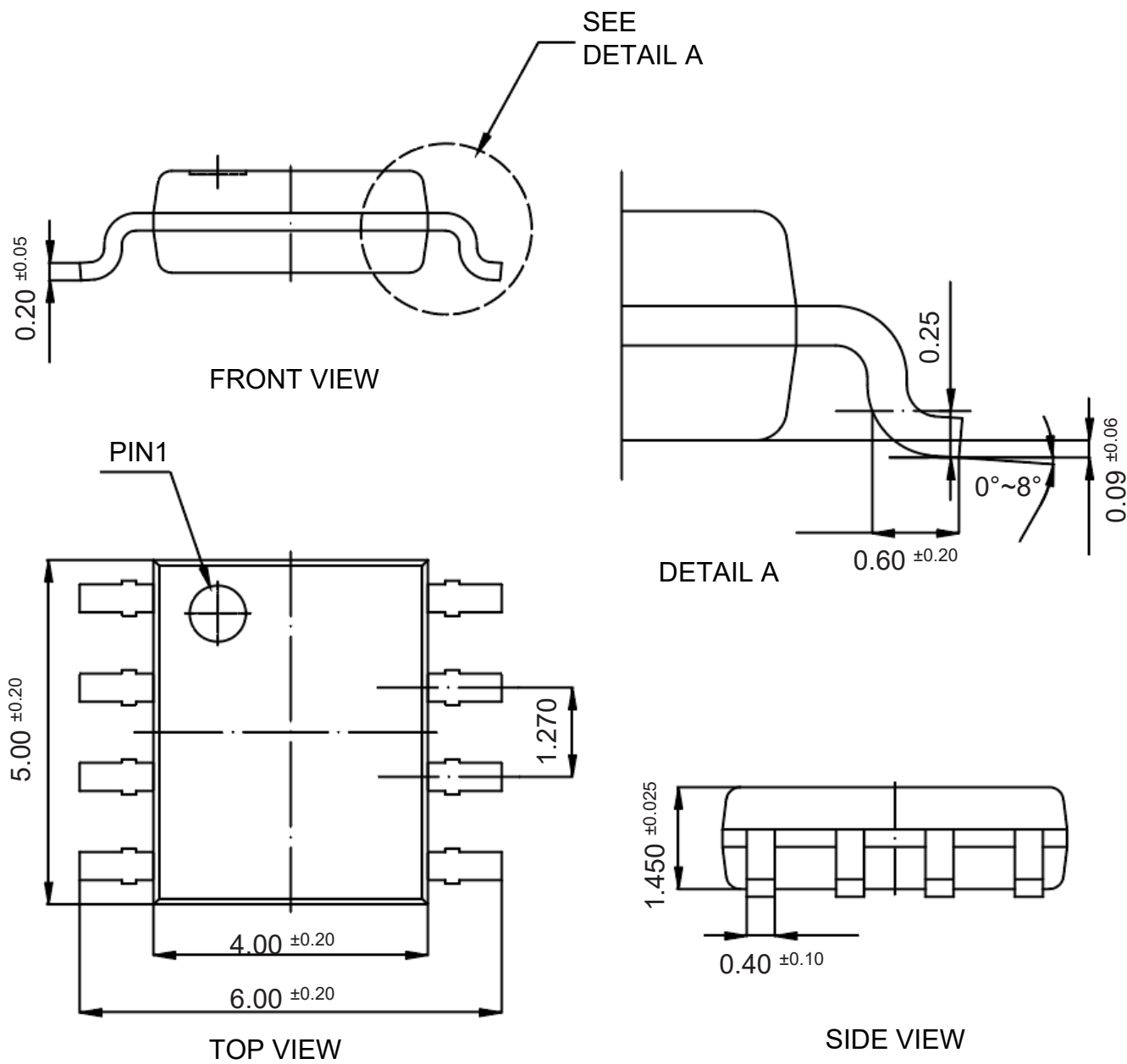
Figure 6. Body Diode Forward Voltage Variation with Source Current

Typical Characteristic Curves



Package Outline

SOP-8 Dimensions in mm



Ordering Information

Device	Package	Shipping
TN9926JNPA	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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