



Description

The ENP4826 uses advanced trench technology to provide excellent RDS(on) with low gate charge. This device is suitable for high side switch in SMPS and general purpose applications.

General Features

- VDS= 60V, ID= 6A
RDS(ON)= 19mΩ (typical) @VGS= 10V
RDS(ON)= 22mΩ (typical) @ VGS=4.5V
- Excellent gate charge xRDS(ON) product (F OM)
- Very low on-resistance RDS(ON)
- 150 °C operating temperature
- Pb-free lead plating

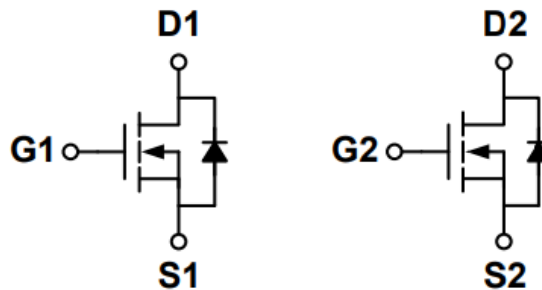
Application

- DC/DC Converter
- Ideal for high-frequency switching and synchronous rectification

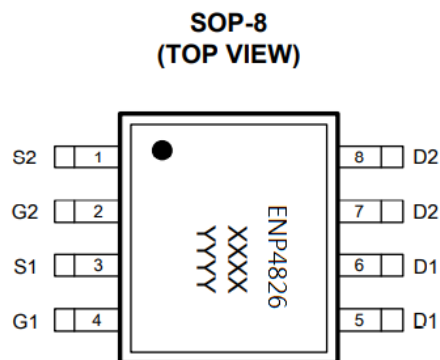
Package

- SOP-8

Schematic diagram



Marking and pin assignment





Ordering Information

ENP4826 XX GR

↓
M1= SOP-8

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

parameter	symbol	limit	unit	
Drain-source voltage	V_{DS}	60	V	
Gate-source voltage	V_{GS}	±20	V	
Drain Current-Continuous (Silicon Limited)	I_D	$T_A=25^\circ\text{C}$	6	A
		$T_A=75^\circ\text{C}$	4	
Pulsed Drain Current (Package Limited)	I_{DM}	24	A	
Single pulse avalanche energy(L=0.5mH)	E_{AS}	80	mJ	
Maximum power dissipation	P_D	$T_A=25^\circ\text{C}$	2	W
		$T_A=75^\circ\text{C}$	1.3	
Operating junction Temperature range	T_J	-55—150	°C	

Electrical Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60	-	-	V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Gate-body leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	±100	nA
ON Characteristics						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.9	2.5	V
Drain-source on-state resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=6A$	-	19	25	mΩ
		$V_{GS}=4.5V, I_D=4A$	-	22	28	
Forward transconductance	g_{fs}	$V_{DS}=5V, I_D=6A$	-	28	-	S
Dynamic Characteristics						
Input capacitance	C_{ISS}	$V_{DS}=30V, V_{GS}=0V$ $f=1.0\text{MHz}$	-	1900	2250	pF
Output capacitance	C_{OSS}		-	150	-	
Reverse transfer capacitance	C_{RSS}		-	115	-	
Gate resistance	R_g	$V_{GS}=0V, V_{DS}=0V,$ $f=1.0\text{MHz}$	-	5	8	Ω
Switching Characteristics						
Turn-on delay time	$t_{D(ON)}$	$V_{DS}=30V$ $V_{GS}=10V$ $R_L=1.5\Omega$ $R_{GEN}=3\Omega$	-	7.5	-	ns
Rise time	t_r		-	5	-	
Turn-off delay time	$t_{D(OFF)}$		-	28	-	
Fall time	t_f		-	5.5	-	
Total gate charge	Q_g	$V_{DS}=30V, I_D=6A$ $V_{GS}=10V$	-	46	-	nC
Gate-source charge	Q_{gs}		-	6	-	
Gate-drain charge	Q_{gd}		-	14.2	-	

Thermal Characteristics

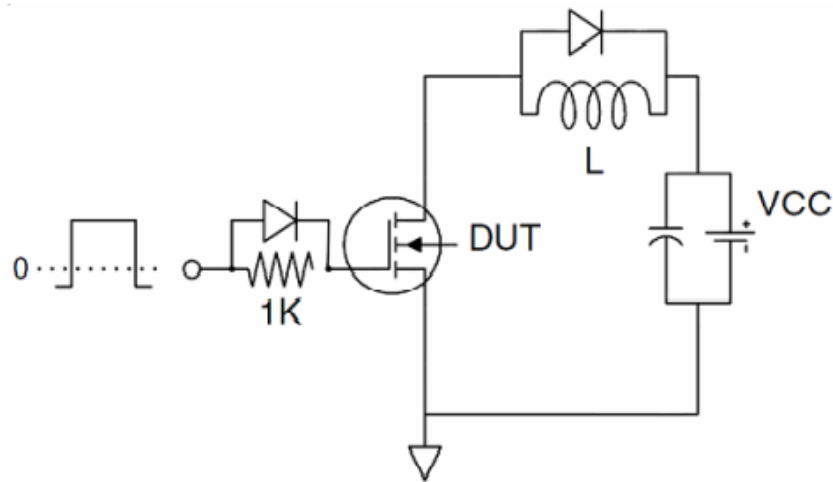
Parameter	Symbol	Typ	Max	Unit
Maximum Junction-to-Ambient ^A	$R_{\theta JA}$	33	40	°C/W
Maximum Junction-to-Ambient ^A		Steady-State	59	
Maximum Junction-to-Lead ^B	$R_{\theta JC}$	16	24	

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1 in2 FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^{\circ}C$. The value in any given application depends on the user's specific board design. The current rating is based on the $t \leq 10s$ thermal resistance rating.

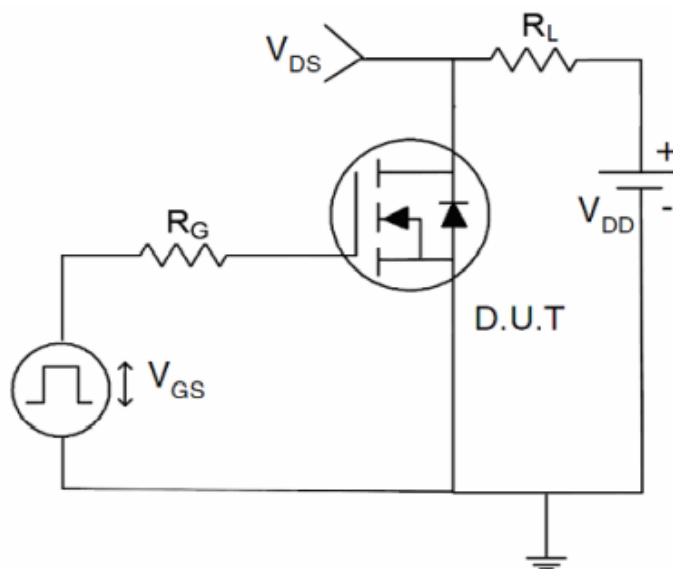
B: The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JC}$ and lead to ambient.

Test Circuit :

(2)、 Gate Charge Test Circuit

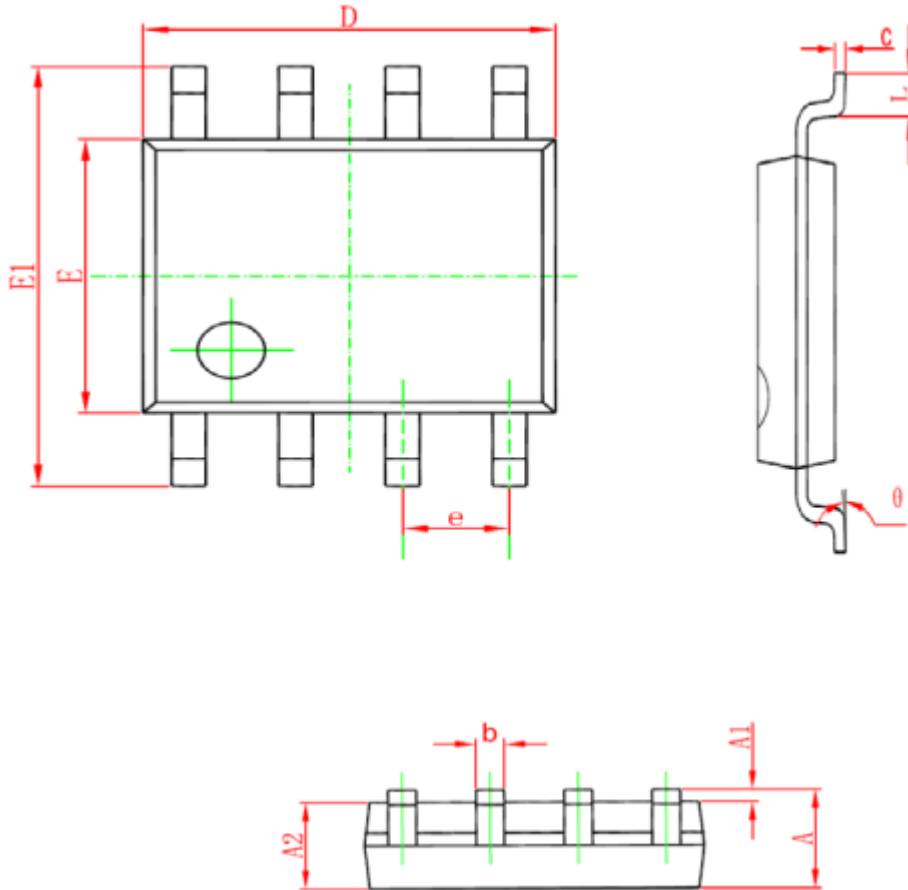


(3)、 Switch Time Test Circuit



Package Information

- SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°