60V Dual N-Channel Enhancement Mode MOSFET

Description

The NP4826 uses advanced trench technology to provide excellent $R_{DS(ON)}$ with low gate charge.

This device is suitable for high side switch in SMPS and general purpose applications.

General Features

- V_{DS} =60V,ID =6A
  $R_{DS(ON)}$=23mΩ (typical) @ VGS=10V
  $R_{DS(ON)}$=27mΩ (typical) @ VGS=4.5V
- Excellent gate charge x $R_{DS(ON)}$ product(FOM)
- Very low on-resistance $R_{DS(ON)}$
- 150 °C operating temperature
- Pb-free lead plating
- 100% UIS tested

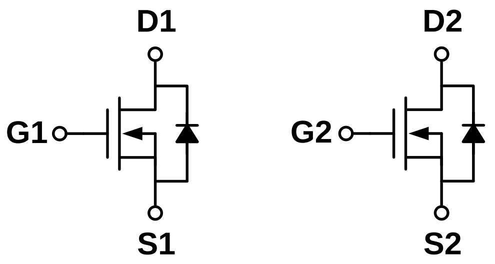
Application

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

Package

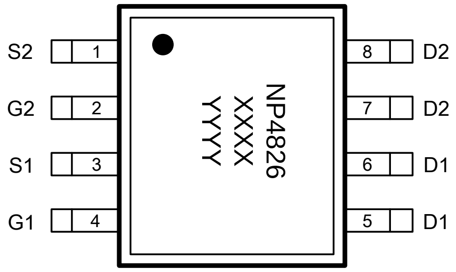
- SOP-8

Schematic diagram



Marking and pin assignment

SOP-8
(TOP VIEW)



Note：XXXX is the date code , YYYY is the wafer lot number.

Ordering Information

Part Number	Storage Temperature	Package	Devices Per Reel
NP4826SR	-55°C to +150°C	SOP-8	3000

Absolute Maximum Ratings (TA=25℃ 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)	T_A=25°C	I_D	6	A
	T_A=75°C		5	
Pulsed Drain Current (Package Limited)		I_{DM}	40	A
Single pulse avalanche energy		E_{AS}	30	mJ
Maximum power dissipation	T_A=25°C	P_D	2	W
	T_A=75°C		1.3	

Operating junction Temperature range	Tj	-55—150	℃

Electrical Characteristics (TA=25℃ unless otherwise noted)

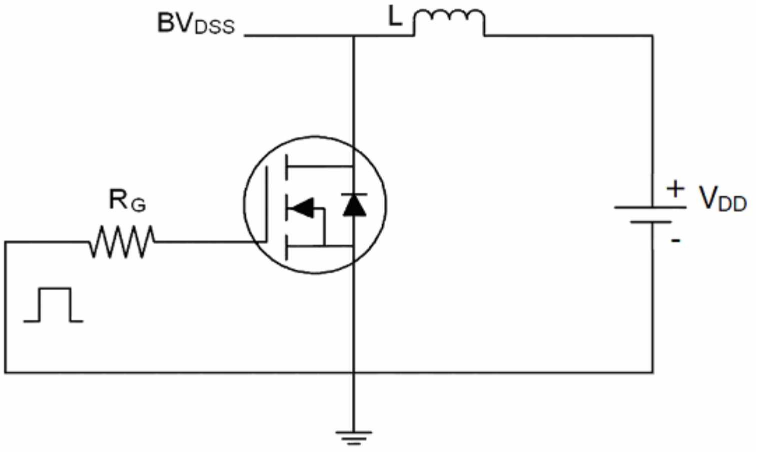
Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V, I_D=250µA	60	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=60V, V_{GS}=0V	-	-	1	µA
Gate-body leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	-	-	±100	nA
ON Characteristics						
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250µA	1.2	1.9	2.	V
Drain-source on-state resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=6A	-	23	26	mΩ
		V_{GS}=4.5V, I_D=5A	-	27	32	
Forward transconductance	gfs	V_{DS}=5V, I_D=6A	-	28	-	S
Dynamic Characteristics						
Input capacitance	C_{ISS}	V_{DS}=30V ,V_{GS}=0V f=1.0MHz	-	1900	2250	pF
Output capacitance	C_{OSS}		-	150	-	
Reverse transfer capacitance	C_{RSS}		-	115	-	
Gate resistance	Rg	V_{GS}=0V, V_{DS}=0V, f=1.0MHz	-	0.68	0.8	Ω
Switching Characteristics						
Turn-on delay time	$t_{D(ON)}$	V_{DS}=30V V_{GS}=10V R_L=1.5Ω R_{GEN}=3Ω	-	7.5	-	ns
Rise time	tr		-	5	-	
Turn-off delay time	$t_{D(OFF)}$		-	28	-	
Fall time	tf		-	5.5	-	
Total gate charge	Qg	V_{DS}=30V,I_D=6A V_{GS}=10V	-	46	-	nC
Gate-source charge	Qgs		-	6	-	
Gate-drain charge	Qgd		-	14.2	-	

Thermal Characteristics

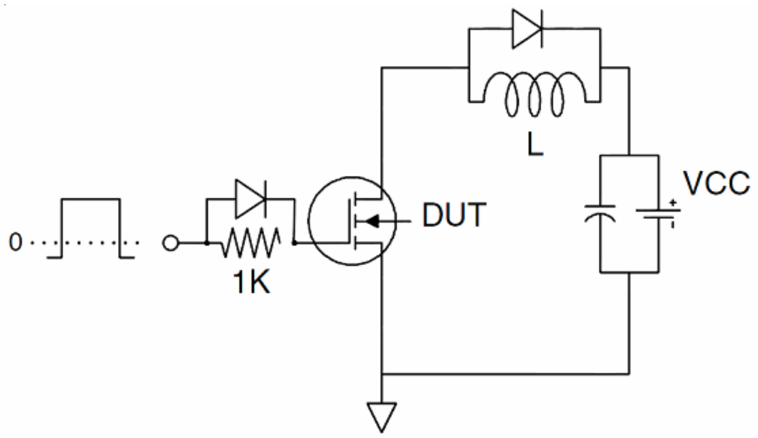
Thermal Resistance junction-to ambient	Rth JA	100	℃/W

Test Circuit：

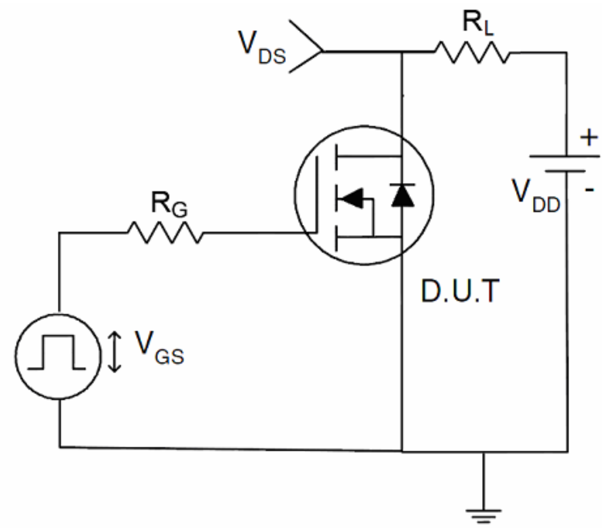
（1）、EAS Test Circuit



（2）、Gate Charge Test Circuit

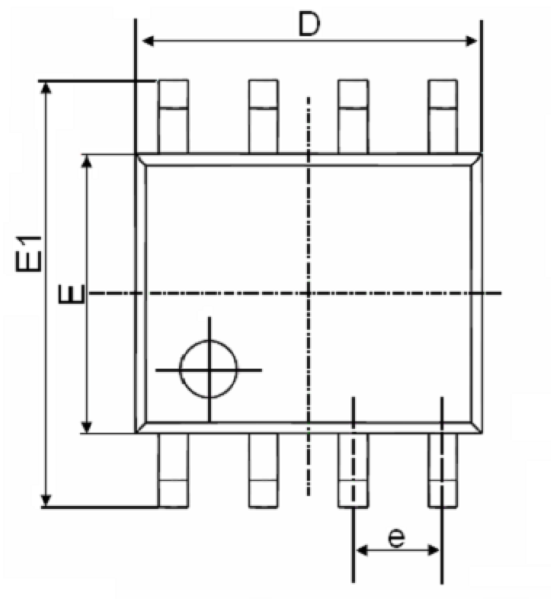


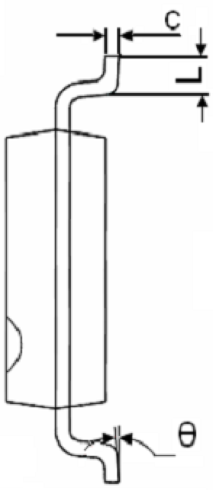
（3）、Switch Time Test Circuit

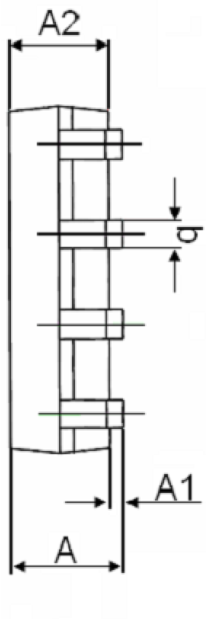


Package Information

- **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°