

DESCRIPTION

The SSFN2269 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V.

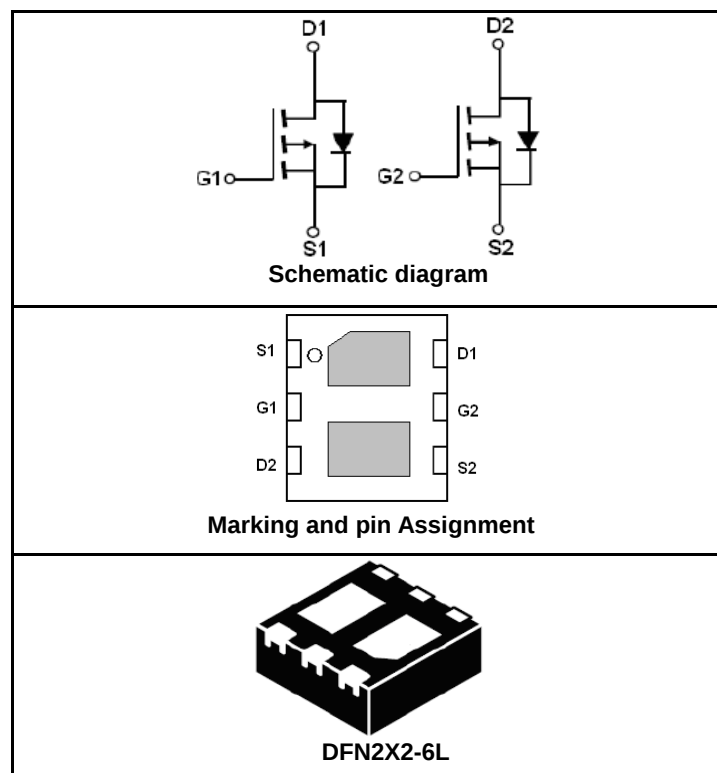
GENERAL FEATURES

- $V_{DS} = -20V, I_D = -3.3A$
 $R_{DS(ON)} < 90m\Omega @ V_{GS} = -4.5V$
 $R_{DS(ON)} < 120m\Omega @ V_{GS} = -2.5V$

- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package

Application

- Battery protection
- Load switch
- Power management



PACKAGE MARKING AND ORDERING INFORMATION

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
SSFN2269	SSFN2269	DFN2X2-6L	—	—	—

ABSOLUTE MAXIMUM RATINGS(TA=25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±8	V
Drain Current-Continuous@ Current-Pulsed (Note 1)	I_D	-3.3	A
	I_{DM}	-20	A
Maximum Power Dissipation	P_D	1.5	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	83	°C/W
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ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-20			V

Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V			-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±100	nA
ON CHARACTERISTICS (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.7	-1	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-2A		70	90	mΩ
		V _{GS} =-2.5V, I _D =-2A		91	120	mΩ
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-2A	3			S
DYNAMIC CHARACTERISTICS (Note4)						
Input Capacitance	C _{ISS}	V _{DS} =-10V, V _{GS} =0V, F=1.0MHz		530	636	PF
Output Capacitance	C _{OSS}			100	120	PF
Reverse Transfer Capacitance	C _{RSS}			60	72	PF
SWITCHING CHARACTERISTICS (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-10V, I _D =-2A V _{GS} =-4.5V, R _{GEN} =2Ω		6	7.2	nS
Turn-on Rise Time	t _r			12	14.4	nS
Turn-Off Delay Time	t _{d(off)}			20	24	nS
Turn-Off Fall Time	t _f			6	7.2	nS
Total Gate Charge	Q _g	V _{DS} =-10V, I _D =-2A, V _{GS} =-4.5V		5.5	6.6	nC
Gate-Source Charge	Q _{gs}			1.0	1.2	nC
Gate-Drain Charge	Q _{gd}			1.5	1.8	nC
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V, I _S =-1A			-1	V

NOTES:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on 1in² FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

ELECTRICAL AND THERMAL CHARACTERISTICS

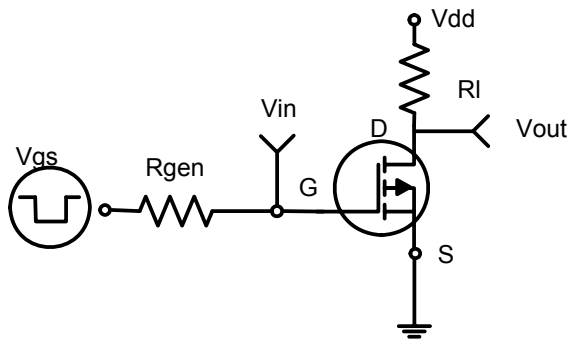


Figure 1: Switching Test Circuit

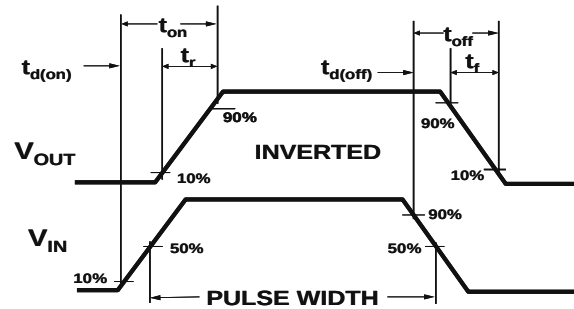


Figure 2: Switching Waveforms

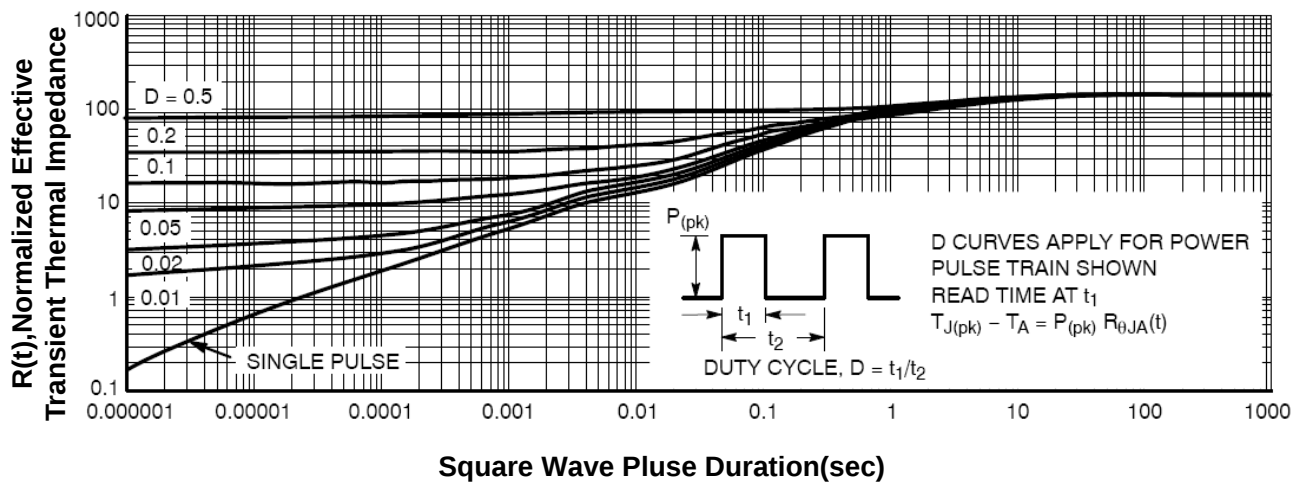
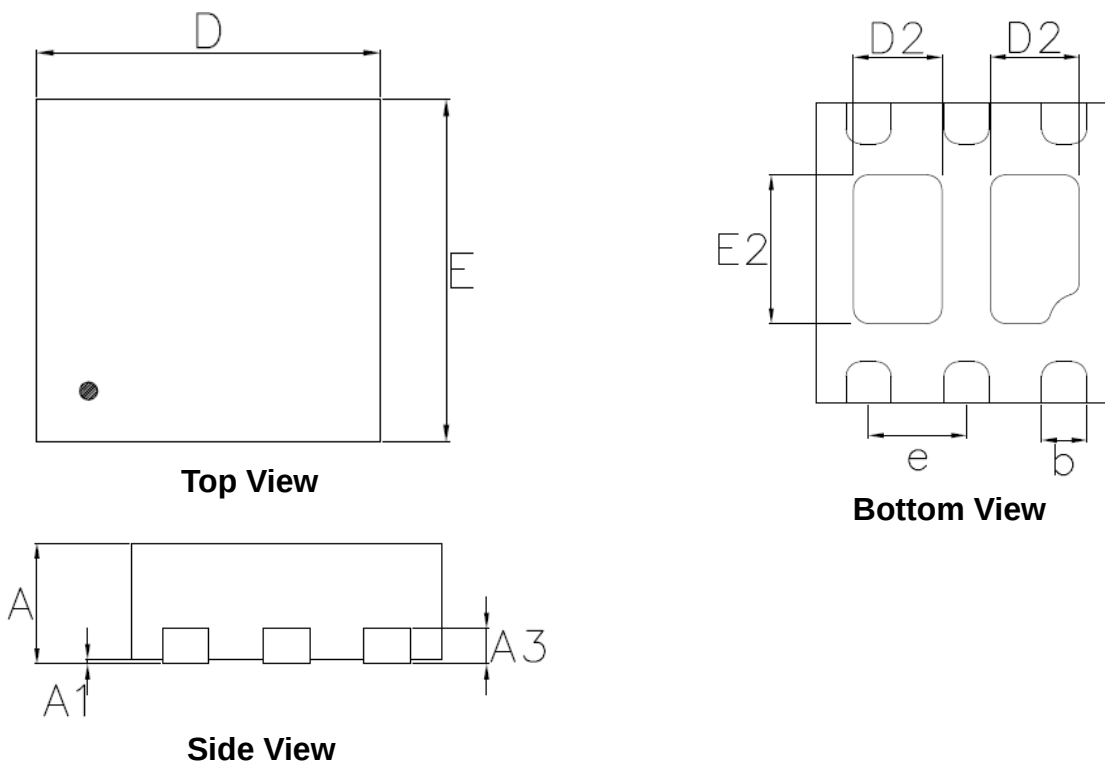


Figure 3: Normalized Maximum Transient Thermal Impedance

DFN2X2-6L PACKAGE INFORMATION



Symbol	Dimensions In Millimeters(mm)		
	Min.	Nom.	Max.
A	0.70	0.75	0.80
A1	0.00	--	0.05
A3	0.20 REF.		
D	1.95	2.00	2.05
E	1.95	2.00	2.05
D2	0.44	0.59	0.69
E2	0.84	0.99	1.09
b	0.25	0.30	0.35
L	0.175	0.275	0.375
e	0.65 BSC		

NOTES:

1. Tolerance $\pm 0.10\text{mm}$ (4 mil) unless otherwise specified
2. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 5 mils.
3. Dimension L is measured in gauge plane.
4. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.

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