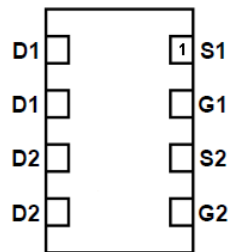
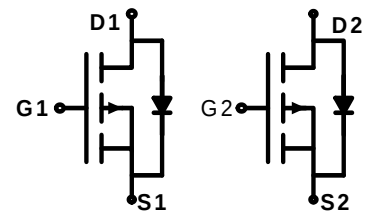


Main Product Characteristics:

V_{DS}	-20V
$R_{DS(on)}$	55m Ω (typ.)
I_D	-3.4A



DFN 3x2-8L
Bottom View



Schematic diagram

Features and Benefits:

- Advanced MOSFET process technology
- Special designed for PWM, load switching and general purpose applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150°C operating temperature


Description:

It utilizes the latest processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in power switching application and a wide variety of other applications.

Absolute max Rating:

Symbol	Parameter	Max.	Units
I_D @ TC = 25°C	Continuous Drain Current, V_{GS} @ 10V ^①	-3.4	A
I_{DM}	Pulsed Drain Current ^②	-17	
P_D @TC = 25°C	Power Dissipation ^③	1.7	W
	Linear Derating Factor	0.014	W/°C
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-to-Source Voltage	±8	V
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to +150	°C

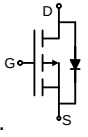
Thermal Resistance

Symbol	Characterizes	Typ.	Max.	Units
$R_{\theta JC}$	Junction-to-case ^③	—	74	°C/W
$R_{\theta JA}$	Junction-to-ambient ($t \leq 10s$) ^④	—	60	°C/W

Electrical Characterizes @T_A=25°C unless otherwise specified

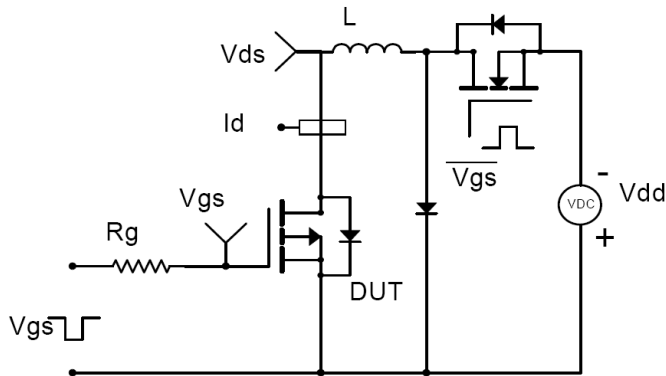
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source breakdown voltage	-20	—	—	V	V _{GS} = 0V, I _D = -250μA
R _{DS(on)}	Static Drain-to-Source on-resistance	—	55	80	mΩ	V _{GS} =-4.5V, I _D = -2.9A
		—	78	105		V _{GS} =-2.5V, I _D = -2.2A
V _{GS(th)}	Gate threshold voltage	-0.45	—	-1.0	V	V _{DS} = V _{GS} , I _D = -250μA
I _{DSS}	Drain-to-Source leakage current	—	—	1	μA	V _{DS} = -20V, V _{GS} = 0V
		—	—	50		T _J = 125°C
I _{GSS}	Gate-to-Source forward leakage	—	—	100	nA	V _{GS} = 8V
		—	—	-100		V _{GS} = -8V
Q _g	Total gate charge	—	6.5	—	nC	I _D = -2.6A, V _{DS} = -16V, V _{GS} = -4.5V
Q _{gs}	Gate-to-Source charge	—	1.1	—		
Q _{gd}	Gate-to-Drain("Miller") charge	—	2.2	—		
t _{d(on)}	Turn-on delay time	—	4.7	—	ns	V _{GS} =-4.5V, V _{DS} =-16V, I _D = -2.6A, R _{GEN} =2Ω
t _r	Rise time	—	10	—		
t _{d(off)}	Turn-Off delay time	—	28	—		
t _f	Fall time	—	20	—		
C _{iss}	Input capacitance	—	645	—	pF	V _{GS} = 0V
C _{oss}	Output capacitance	—	86	—		V _{DS} = -16V
C _{rss}	Reverse transfer capacitance	—	38	—		f = 1MHz

Source-Drain Ratings and Characteristics

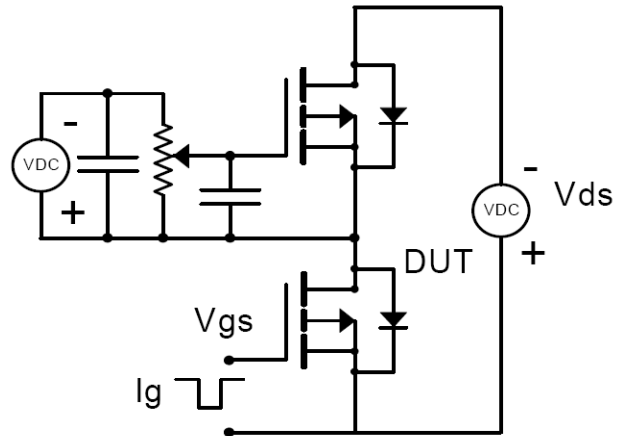
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode)	—	—	-3.4	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I _{SM}	Pulsed Source Current (Body Diode)	—	—	-17	A	
V _{SD}	Diode Forward Voltage	—	—	-1.2	V	I _S =-1.1A, V _{GS} =0V
t _{rr}	Reverse Recovery Time	—	17	—	ns	T _J = 25°C, I _F = 1A, di/dt = 100A/μs
Q _{rr}	Reverse Recovery Charge	—	8.6	—	nC	

Test circuits and Waveforms

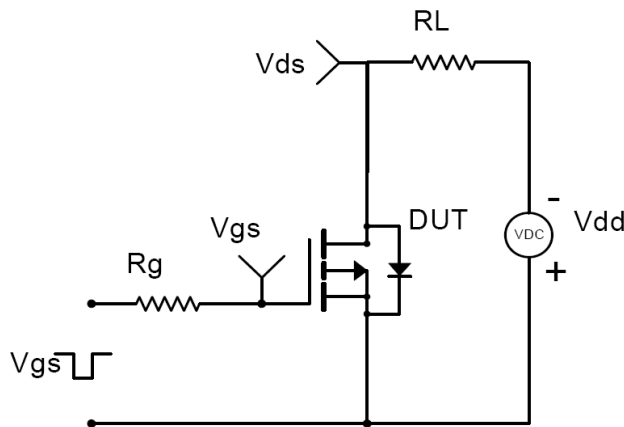
EAS test circuit:



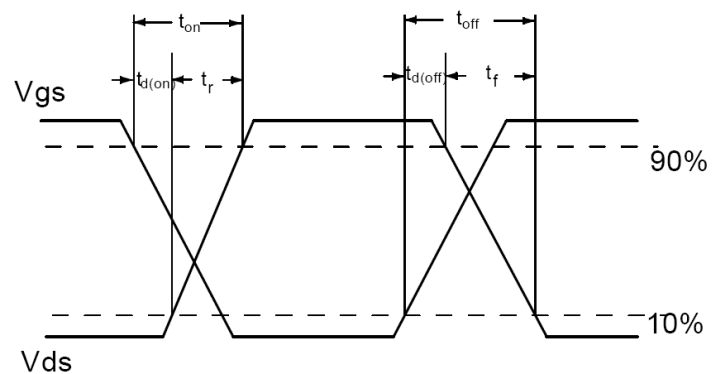
Gate charge test circuit:



Switching time test circuit:



Switch Waveforms:

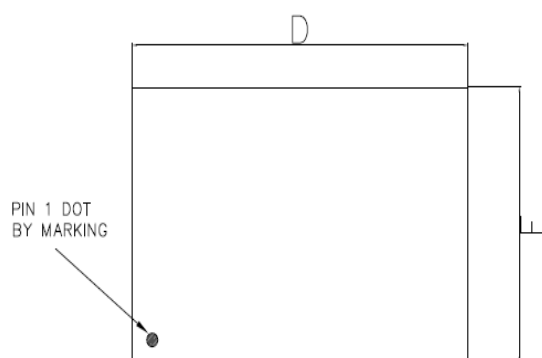


Notes:

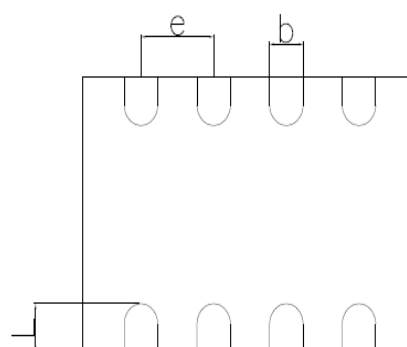
- ① Calculated continuous current based on maximum allowable junction temperature.
- ② Repetitive rating; pulse width limited by max. junction temperature.
- ③ The power dissipation PD is based on max. junction temperature, using junction-to-case thermal resistance.
- ④ The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$

Mechanical Data:

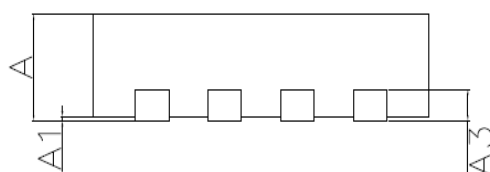
DFN 3X2_8L PACKAGE OUTLINE DIMENSION



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimension In Millimeters			Dimension In Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.700	0.750	0.800	0.028	0.030	0.031
A1	0.000	-	0.050	0.000	-	0.002
A3	0.200REF			0.008REF		
D	2.950	3.000	3.050	0.116	0.118	0.120
E	1.950	2.000	2.050	0.077	0.079	0.081
b	0.250	0.300	0.350	0.010	0.012	0.014
L	0.280	0.350	0.420	0.016	0.014	0.017
e	0.650BSC			0.026BSC		

Ordering and Marking Information**Device Marking: SSFN2569****Package (Available)****DFN3X2-8L****Operating Temperature Range****C : -55 to 150 °C****Devices per Unit**

Package Type	Units/Tape	Tapes/Inner Box	Units/Inner Box	Inner Boxes/Carton Box	Units/Carton Box
DFN3X2-8L	3000	5	15000	4	60000

Reliability Test Program

Test Item	Conditions	Duration	Sample Size
High Temperature Reverse Bias(HTRB)	$T_j=125^{\circ}\text{C}$ or 150°C @ 80% of Max $V_{DSS}/V_{CES}/V_R$	168 hours 500 hours 1000 hours	3 lots x 77 devices
High Temperature Gate Bias(HTGB)	$T_j=125^{\circ}\text{C}$ or 150°C @ 100% of Max V_{GSS}	168 hours 500 hours 1000 hours	3 lots x 77 devices

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