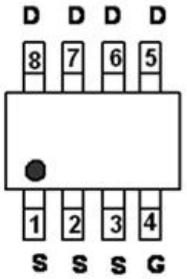
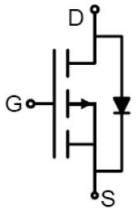
Main Product Characteristics:

V_{DSS}	-150V
R_{DS}(on)	265mΩ (typ.)
I_D	-2A

SOP-8



Pin Assignments



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℃ 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 @ T_A = 25°C	Continuous Drain Current ①	-2	A
I_D @ T_A= 100°C	Continuous Drain Current ①	-1.4	
I_{DM}	Pulsed Drain Current ②	-8	
P_D @T_A = 25°C	Power Dissipation ③	3	W
V_{DS}	Drain-Source Voltage	-150	V
V_{GS}	Gate-to-Source Voltage	± 20	V
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to +150	°C

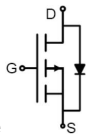
Thermal Resistance

Symbol	Characterizes	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-ambient (t ≤ 10s) ④	—	42	°C/W

Electrical Characteristics @T_J=25°C unless otherwise specified

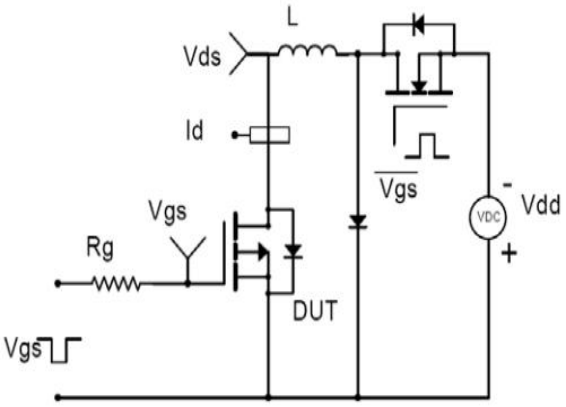
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source breakdown voltage	-150	—	—	V	V_{GS} = 0V, I_D = -250μA
$R_{DS(on)}$	Static Drain-to-Source on-resistance	—	265	345	mΩ	V_{GS}=-10V,I_D = -2A
$V_{GS(th)}$	Gate threshold voltage	-2	—	-4	V	V_{DS} = V_{GS}, I_D = -250μA
I_{DSS}	Drain-to-Source leakage current	—	—	-1	μA	V_{DS} = -150V,V_{GS} = 0V
I_{GSS}	Gate-to-Source forward leakage	—	—	100	nA	V_{GS} = 20V
		—	—	-100		V_{GS} = -20V
Q_g	Total gate charge	—	38	—	nC	I_D = -2A,
Q_{gs}	Gate-to-Source charge	—	8	—		V_{DS}=-50V,
Q_{gd}	Gate-to-Drain("Miller") charge	—	9	—		V_{GS} = -10V
$t_{d(on)}$	Turn-on delay time	—	31	—	ns	V_{GS}=-10V, V_{DS} =-50V, R_{GEN}=3Ω,R_L=25Ω
t_r	Rise time	—	33	—		
$t_{d(off)}$	Turn-Off delay time	—	240	—		
t_f	Fall time	—	130	—		
C_{iss}	Input capacitance	—	2071	—	pF	V_{GS} = 0V
C_{oss}	Output capacitance	—	44	—		V_{DS} =-50V
C_{rss}	Reverse transfer capacitance	—	36	—		f = 1MHz

Source-Drain Ratings and Characteristics

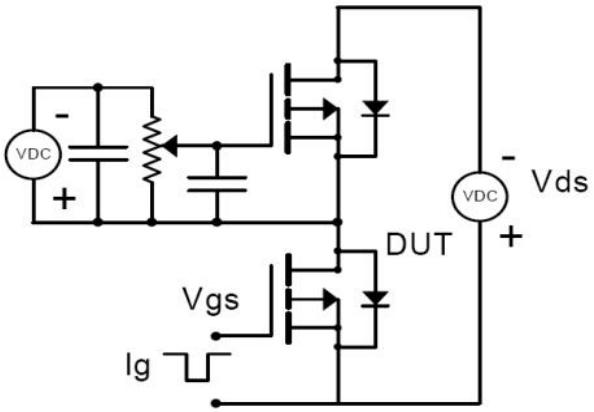
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode) ①	—	—	-2	A	MOSFET symbol showing the integral reverse p-n junction diode 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	-8	A	
V_{SD}	Diode Forward Voltage	—	—	-1.2	V	I_S=-2A, V_{GS}=0V
t_{rr}	Reverse Recovery Time	—	34	—	ns	T_J = 25°C, I_F =-2A, di/dt = 100A/μs
Q_{rr}	Reverse Recovery Charge	—	32.3	—	nC	

Test Circuits and Waveforms

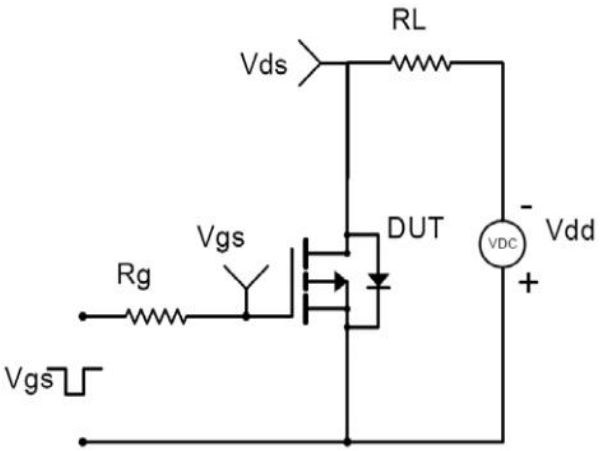
EAS Test Circuit:



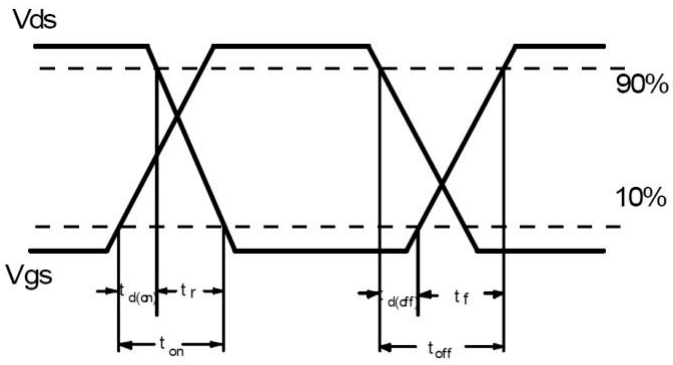
Gate Charge Test Circuit:



Switching Time Test Circuit:



Switching Waveforms:



Notes:

①Calculated continuous current based on maximum allowable junction temperature.

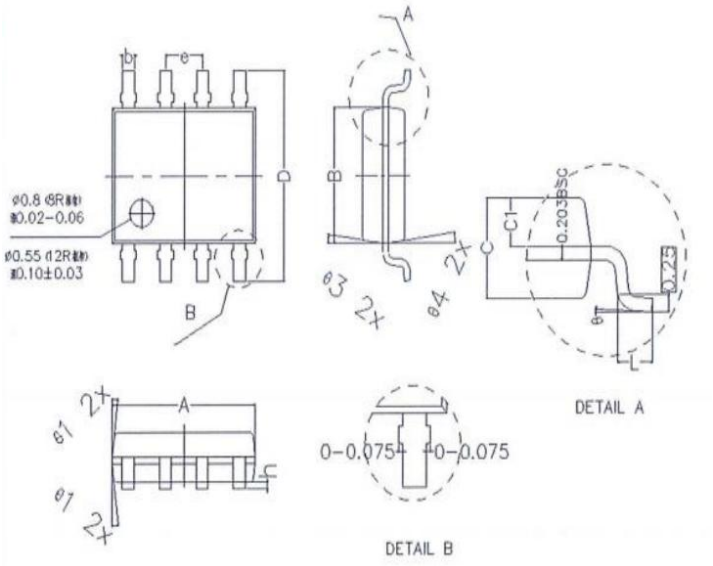
②Repetitive rating; pulse width limited by max. junction temperature.

③The power dissipation P_D is based on max. junction temperature, using junction-to-case thermal resistance.

④The 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°C

Mechanical Data：

SOP-8 Package Outline (Unit:mm)



COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	4.800	4.900	5.000
B	3.800	3.900	4.000
C	1.350	1.450	1.550
C1	0.650	0.700	0.750
D	5.950	6.120	6.280
L	0.500	0.600	0.700
b	0.350	0.400	0.450
h	0.070	0.150	0.250
e	1.270TYPE		
θ_1	7° TYPE(8R)	12° TYPE(12R)	
θ_2	7° TYPE(8R)	10° TYPE(12R)	
θ_3	8° TYPE(8R)	12° TYPE(12R)	
θ_4	8° TYPE(8R)	10° TYPE(12R)	
θ	0° ~ 8°		

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