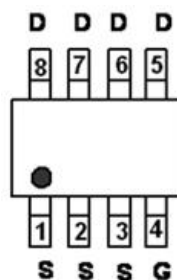
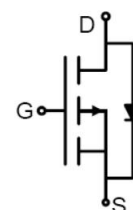


Main Product Characteristics:

V_{DSS}	-30V
$R_{DS(on)}$	18m Ω (typ.)
I_D	-8A


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°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
$I_D @ T_C = 25^\circ\text{C}$	Continuous Drain Current ①	-8	A
$I_D @ T_C = 100^\circ\text{C}$	Continuous Drain Current ①	-5	
I_{DM}	Pulsed Drain Current ②	-32	
$P_D @ T_A = 25^\circ\text{C}$	Power Dissipation ③	3.3	W
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-to-Source Voltage	± 20	V
$T_J \quad T_{STG}$	Operating Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

Thermal Resistance

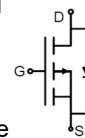
Symbol	Characterizes	Typ.	Max.	Units
R _{θJA}	Junction-to-ambient (t ≤ 10s) ④	—	38	°C/W

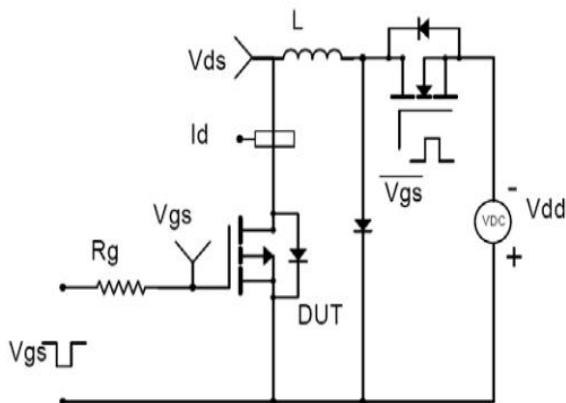
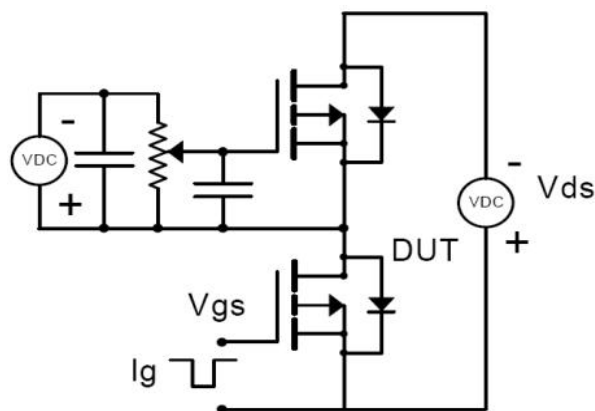
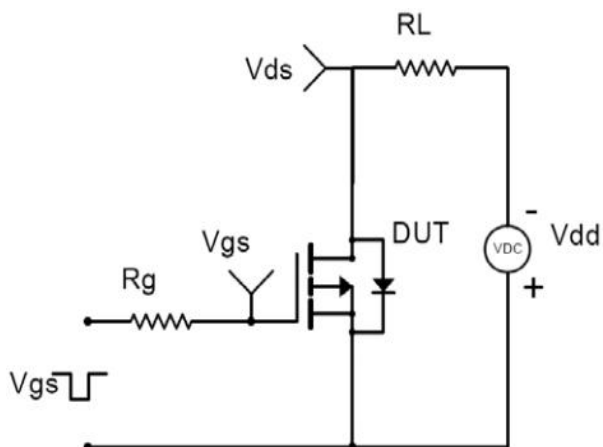
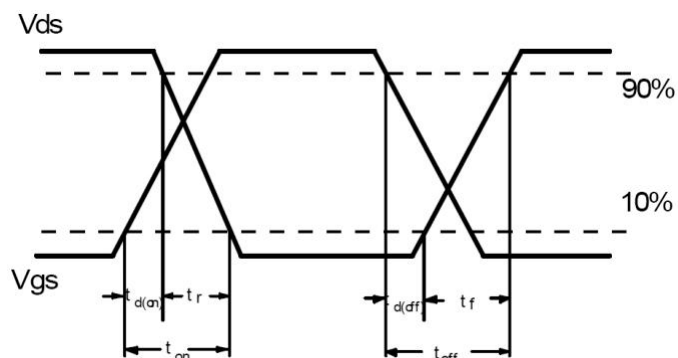
Electrical Characteristics @T_A=25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source breakdown voltage	-30	—	—	V	V _{GS} = 0V, I _D = -250μA
R _{DS(on)}	Static Drain-to-Source on-resistance	—	18	23.4	mΩ	V _{GS} = -10V, I _D = -5A
		—	23	30		V _{GS} = -4.5V, I _D = -3A
V _{GS(th)}	Gate threshold voltage	-0.7	—	-1.5	V	V _{DS} = V _{GS} , I _D = -250μA
I _{DSS}	Drain-to-Source leakage current	—	—	-1	μA	V _{DS} = -30V, V _{GS} = 0V
I _{GSS}	Gate-to-Source forward leakage	—	—	100	nA	V _{GS} = 20V
		—	—	-100		V _{GS} = -20V
Q _g	Total gate charge	—	52	—	nC	I _D = -8A, V _{DS} = -15V, V _{GS} = -10V
Q _{gs}	Gate-to-Source charge	—	10	—		
Q _{gd}	Gate-to-Drain("Miller") charge	—	8.3	—		
t _{d(on)}	Turn-on delay time	—	13.2	—	ns	V _{GS} = -10V, V _{DS} = -15V, R _{GEN} = 6Ω, I _D = -1A
t _r	Rise time	—	16	—		
t _{d(off)}	Turn-Off delay time	—	200	—		
t _f	Fall time	—	100	—		
C _{iss}	Input capacitance	—	672	—	pF	V _{GS} = 0V V _{DS} = -15V f = 1MHz
C _{oss}	Output capacitance	—	117	—		
C _{riss}	Reverse transfer capacitance	—	96	—		

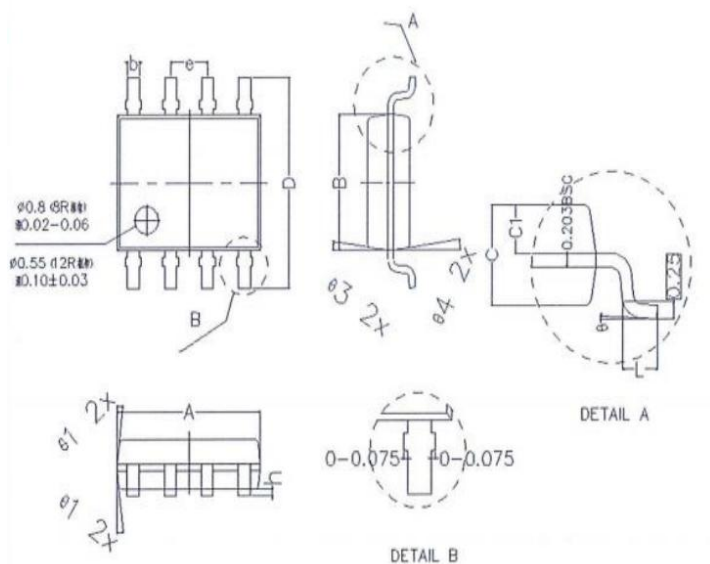
Source-Drain Ratings and Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode) ①	—	—	-8	A	MOSFET symbol showing the integral reverse p-n junction diode
I _{SM}	Pulsed Source Current (Body Diode) ①	—	—	-32	A	
V _{SD}	Diode Forward Voltage	—	—	-1.2	V	I _S = -30A, V _{GS} = 0V



Test Circuits and Waveforms
EAS Test Circuit:

Gate Charge Test Circuit:

Switching Time Test Circuit:

Switching 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 P_D 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:
SOP-8 Package Outline (Unit:mm)


COMMON DIMENSIONS (UNITS OF MEASURE 15 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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