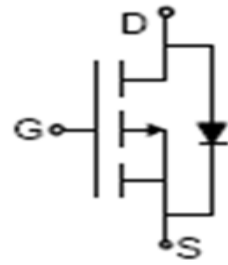


-30V P-Channel MOSFETs

Features

- $V_{DS} = -30V$, $I_D = -12A$
- $R_{DS(ON)} = 14m\Omega$ @ $V_{GS} = -4.5V$
 $R_{DS(ON)} = 10m\Omega$ @ $V_{GS} = -10V$
- High Power and Current Handling Capability
- Lead Free Product is Acquired
- Surface Mount Package

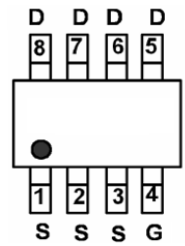


Application

- PWM Applications
- Load Switch
- Power Management



SOP-8



Pin assignment

Absolute Maximum Ratings ($T_C = 25^\circ C$ unless otherwise specified)

Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	-30	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	$T_C = 25^\circ C$	-12
		$T_C = 100^\circ C$	-8
I_{DM}	Pulsed Drain Current ^{note1}	-60	A
P_D	Power Dissipation	$T_A = 25^\circ C$	3.1
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	40	$^\circ C/W$
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	$^\circ C$

Electrical Characteristics ($T_c=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D = -250\mu A$	-30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = -30V, V_{GS} = 0V,$	-	-	-1	μA
I_{GSS}	Gate to Body Leakage Current	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.6	-3.0	V
$R_{DS(on)}$	Static Drain-Source on-Resistance <small>note2</small>	$V_{GS} = -10V, I_D = -12A$	-	10	14	m Ω
		$V_{GS} = -4.5V, I_D = -10A$	-	14	20	
g_{FS}	Forward Transconductance	$V_{GS} = -5V, I_D = -12A$	-	24	-	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS} = -15V, V_{GS} = 0V,$ $f = 1.0MHz$	-	2000	-	pF
C_{oss}	Output Capacitance		-	370	-	pF
C_{riss}	Reverse Transfer Capacitance		-	295	-	pF
Q_g	Total Gate Charge	$V_{DS} = -15V, I_D = -12A,$ $V_{GS} = -10V$	-	30	-	nC
Q_{gs}	Gate-Source Charge		-	4.6	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	10	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD} = -15V, R_L = 2.2\Omega,$ $V_{GS} = -10V, R_{GEN} = 3\Omega$	-	11	-	ns
t_r	Turn-on Rise Time		-	9.4	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	24	-	ns
t_f	Turn-off Fall Time		-	12	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-12	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-60	A
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS} = 0V, I_S = -1.0A$	-	-0.75	-1.0	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

 2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$

Typical Performance Characteristics

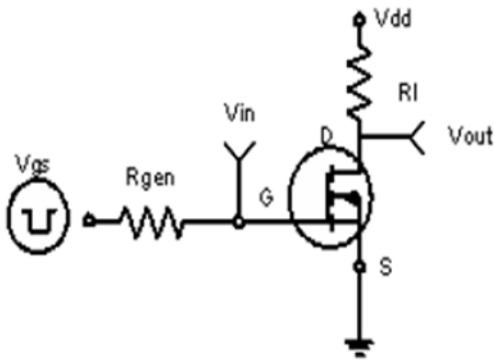


Figure1:Switching Test Circuit

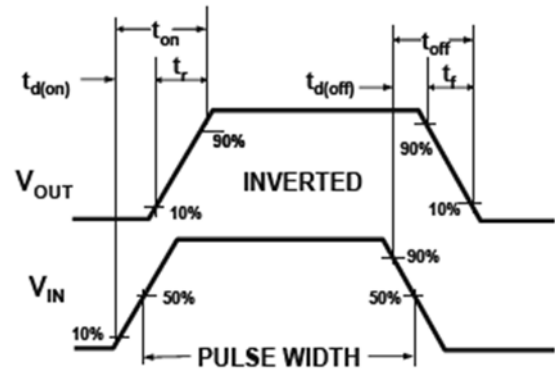
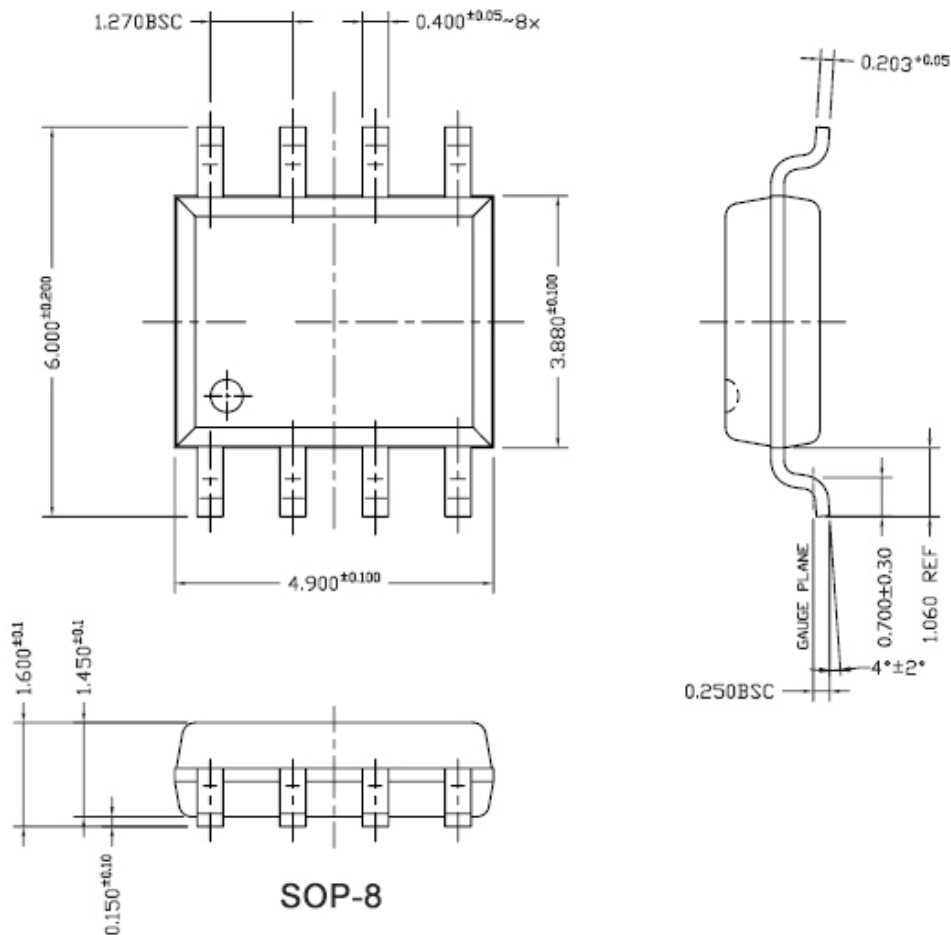


Figure2:Switching Waveforms

Package Mechanical Data



Revision history

Date	Revision	Changes
28-May-2020	1.0	Initial release

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