Description

Dual N-channel Enhancement Mode MOSFET

Features

- V_{DS}=20V, I_D=6.5A
- $R_{DS(ON)}$=14mΩ (Typ.) @V_{GS} =4.5V
  $R_{DS(ON)}$=19mΩ (Typ.) @V_{GS} =2.5V
- Low Gate Charge
- Low Reverse Recovery Charge
- Fast Switching
- Improved dv/dt Capability

Application

- Uninterruptible Power Supply(UPS)
- DC-DC Power Converter
- Synchronous Rectification

Package

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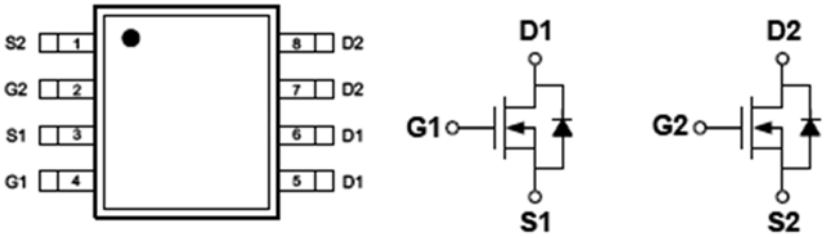


Pin assignment

Absolute Maximum Ratings (T_C=25℃ unless otherwise specified)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		20	V
V_{GSS}	Gate-Source Voltage		±12	V
I_D	Continuous Drain Current	T_C = 25℃	6.5	A
		T_C = 100℃	4	
I_{DM}	Pulsed Drain Current note1		26	A
P_D	Power Dissipation	T_A = 25℃	1.25	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		100	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

Electrical Characteristics (T_C=25℃ 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=250μA	20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =20V, V_{GS}=0V,	-	-	1.0	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS} =0V, V_{GS}=±12V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D= 250μA	0.5	0.7	1.2	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS} =4.5V, I_D=6.5A	-	14	22	mΩ
		V_{GS} =2.5V, I_D=5.5A	-	19	27	
g_{FS}	Forward Transconductance	V_{DS} =5V, I_D=6A	-	10	-	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} =10V, V_{GS} = 0V, f = 1.0MHz	-	900	-	pF
C_{oss}	Output Capacitance		-	220	-	pF
C_{rss}	Reverse Transfer Capacitance		-	100	-	pF
Q_g	Total Gate Charge	V_{DS} =10V, I_D =6A, V_{GS} =4.5V	-	12	-	nC
Q_{gs}	Gate-Source Charge		-	2.3	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	1	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD} =10V, I_D =6A, R_G=6Ω, V_{GEN}=4.5V	-	10	-	ns
t_r	Turn-on Rise Time		-	11	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	35	-	ns
t_f	Turn-off Fall Time		-	30	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	6.5	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	26	A

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

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

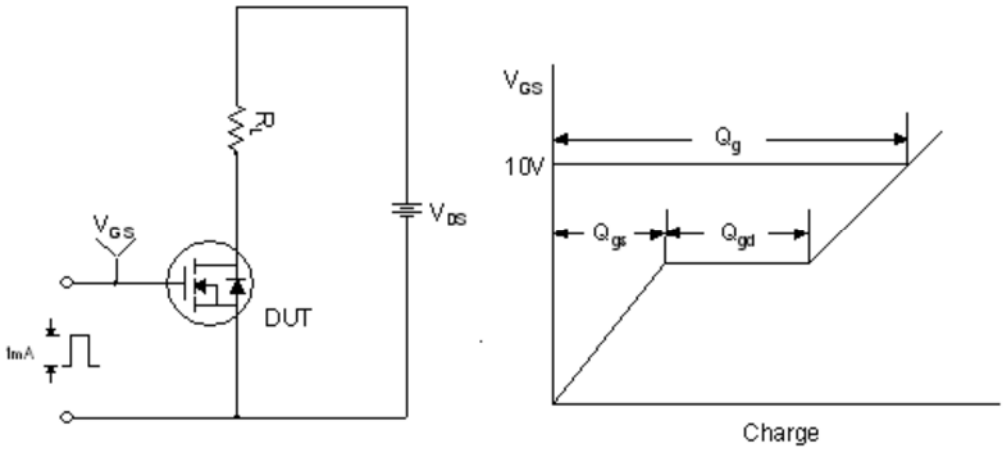


Figure 1. Gate Charge Test Circuit & Waveform

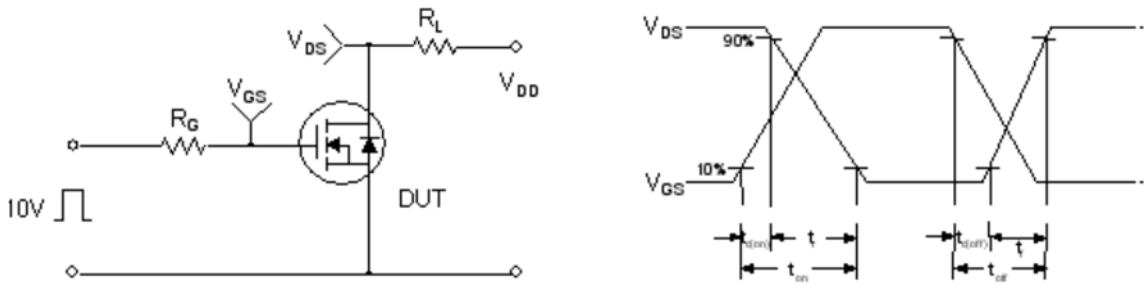


Figure 2. Resistive Switching Test Circuit & Waveforms

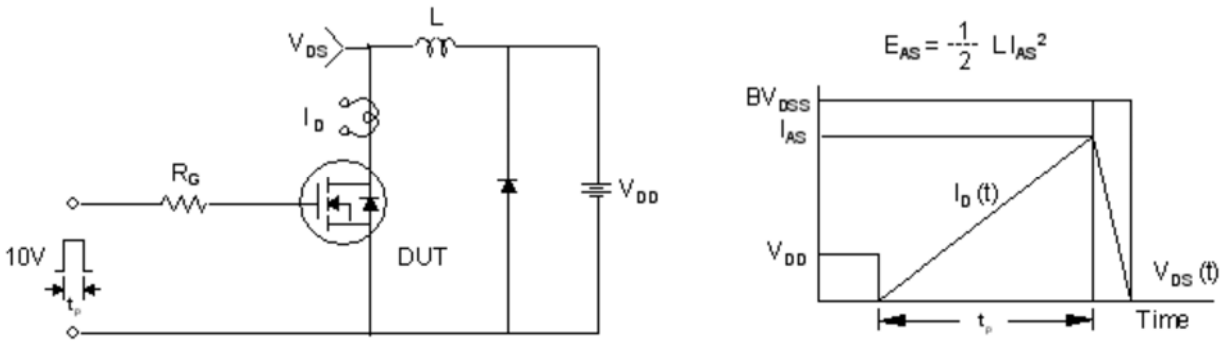


Figure 3. Unclamped Inductive Switching Test Circuit & Waveforms

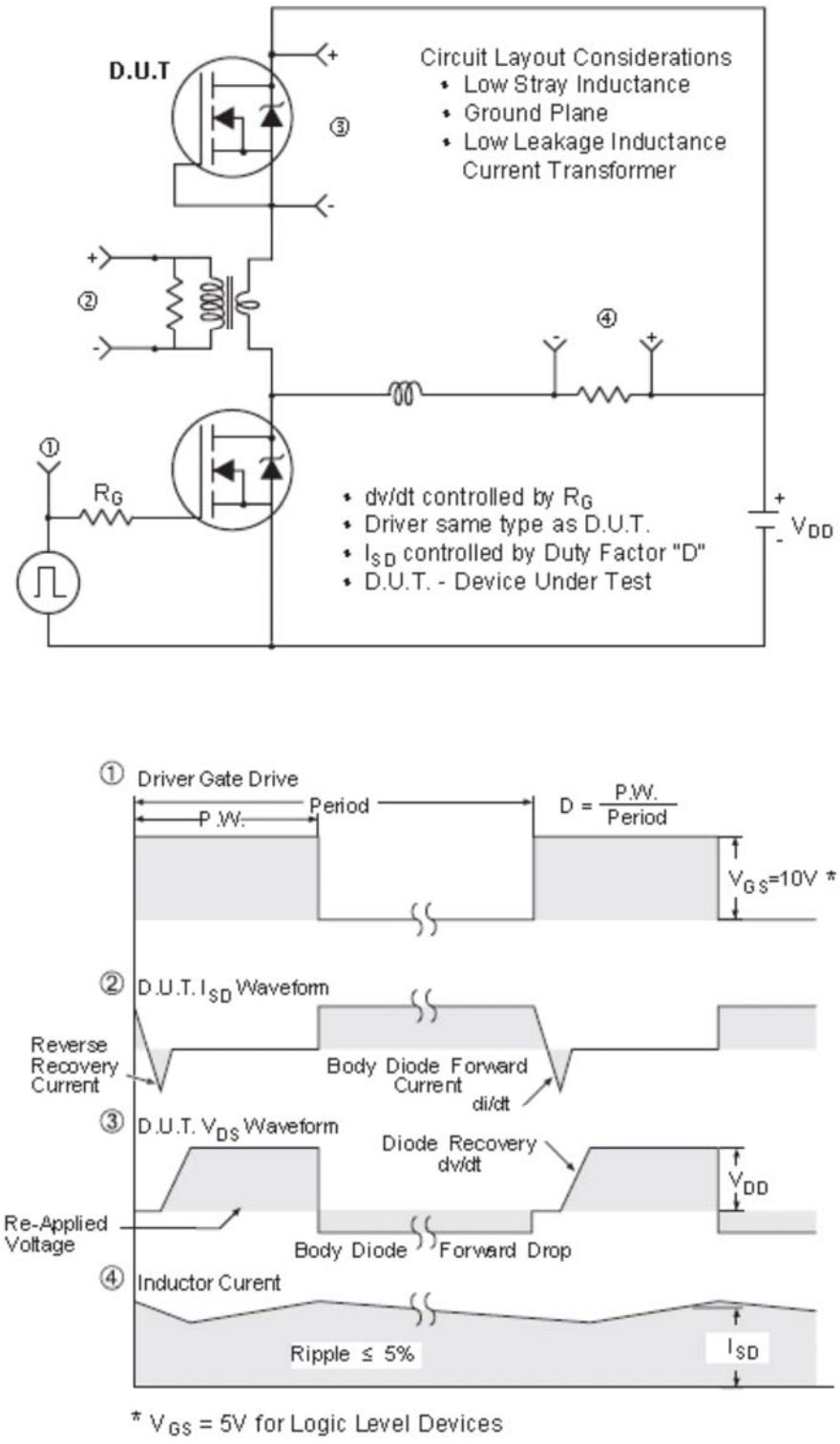
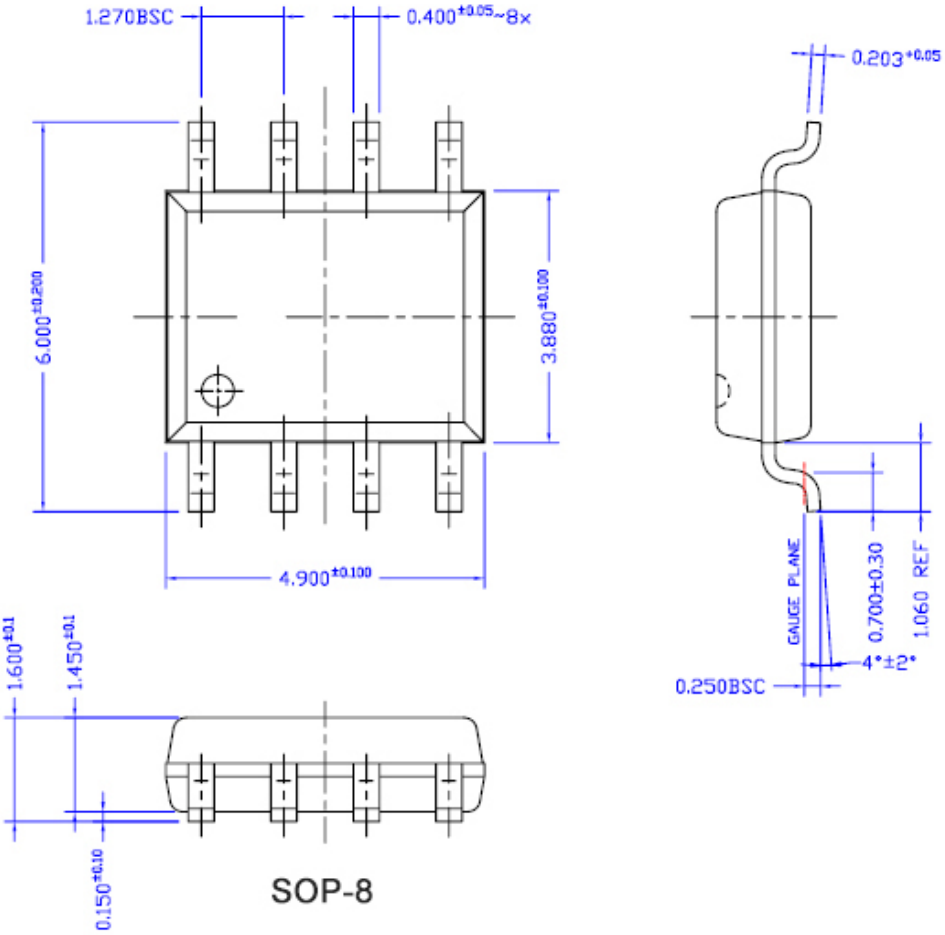


Figure 4. Peak Diode Recovery dv/dt Test Circuit & Waveforms (For N-channel)

Package Mechanical Data



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