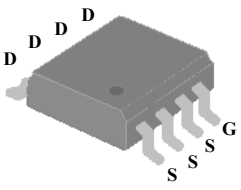
WG160V10G

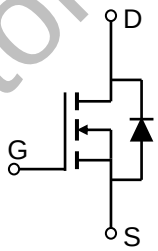
Features:

- ☐ Low Intrinsic Capacitances.
- ☐ Excellent Switching Characteristics.
- ☐ Extended Safe Operating Area.
- ☐ Unrivalled Gate Charge :Qg=24nC (Typ.).
- ☐ BVDSS=100V,I_D=9.5A
- ☐ R_{DS}(on) : 14.1mΩ (Typ) @V_G=10V
- ☐ 100% Avalanche Tested

SOP-8

RoHS COMPLIANT





Schematic diagram

Absolute Maximum Ratings (@ T_C = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (T_C =25℃)	I_D	9.5	A
Continuous Drain Current (T_C =100℃)	I_D	5	A
Pulsed Drain Current (1)	I_{DM}	40	A
Single Pulsed Avalanche Energy (2)	E_{AS}	10	mJ
Power Dissipation	P_D	2.5	W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	45	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

WildGoose Semiconductor

Electrical Characteristics (T_J = 25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=250μA，V_{GS}=0	100	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=100V, V_{GS}=0V	-	-	1.0	μA
		V_{DS}=100V, Tj=125℃		0.8		
I_{GSSF}	Gate-body leakage Current, Forward	V_{GS}=+20V, V_{DS}=0V	-	-	100	nA
I_{GSSR}	Gate-body leakage Current, Reverse	V_{GS}=-20V, V_{DS}=0V	-	-	-100	
On Characteristics						
$V_{GS(TH)}$	Date Threshold Voltage	I_D=250μA,V_{DS}=V_{GS}	1.5	2.0	2.5	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	I_D=8 A,V_{GS}=10V	-	14.1	17	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	V_{DS}=50V，V_{GS}=0，f=1.0MHz	-	1382	-	pF
Coss	Output Capacitance		-	184	-	
Crss	Reverse Transfer Capacitance		-	5.8	-	
Switching Characteristics						
Td(on)	Turn-On Delay Time	V_{DD}=50V，I_D=8 A R_G=3.0Ω,V_{GS}=10 (Note 3,4)	-	5.6	-	ns
Tr	Turn-On Rise Time		-	29	-	
Td(off)	Turn-Off Delay Time		-	28	-	
Tf	Turn-Off Rise Time		-	9.9	-	
Qg	Total Gate Charge	V_{DD}=50,V_{GS}=10V，I_D=8 A(Note 3,4)	-	24		nC
Qgs	Gate-Source Charge		-	5.3	-	
Qgd	Gate-Drain Charge		-	3.7	-	
Drain-Source Diode Characteristics and Maximum Ratings						
Is	Max. Diode Forward Current	-	-	-	9.5	A
I_{SM}	Max. Pulsed Forward Current	-	-	-	40	
V_{SD}	Diode Forward Voltage	I_S=8 A,V_{GS} =0V	-	0.9	1.4	V
Trr	Reverse Recovery Time	I_S=8 A,V_{GS} =0V diF/dt=100A/μs (Note3)	-	41	-	nS
Qrr	Reverse Recovery Charge		-	42	-	μC

Notes : 1, L=0.5mH, VDD=50V, RG=25Ω, Starting TJ =25°C
2, Repetitive Rating : Pulse width limited by maximum junction temperature
3, Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%
4, Essentially Independent of Operating Temperature

WinGoose Semiconductor

Typical Performance Characteristics

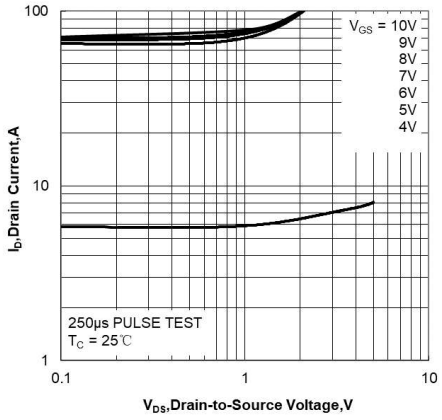


Figure 1. Output Characteristics

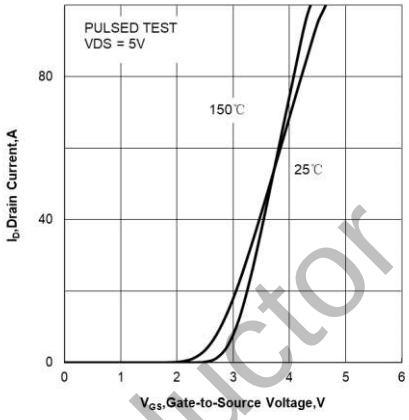


Figure 2. Transfer Characteristics

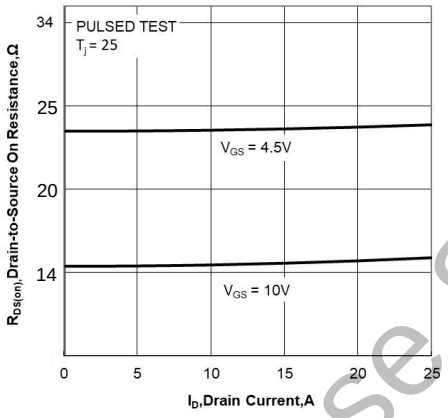


Figure 3. Drain-to-Source On Resistance vs Drain Current

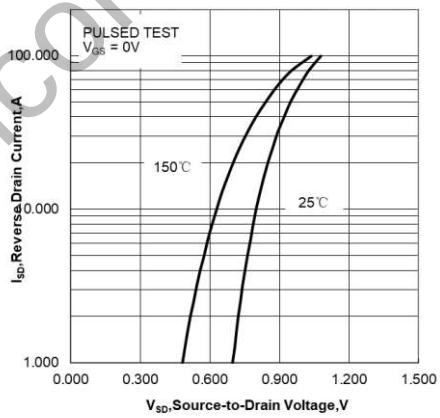


Figure 4. Body Diode Forward Voltage vs Source Current and Temperature

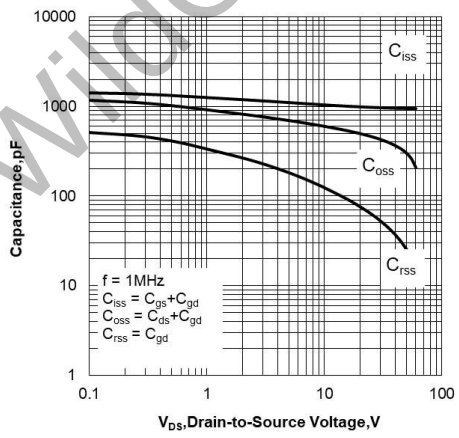


Figure 5. Capacitance Characteristics

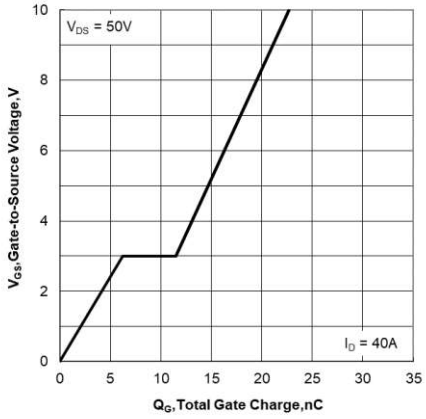


Figure 6. Gate Charge Characteristics

WilGoose Semiconductor

Typical Performance Characteristics

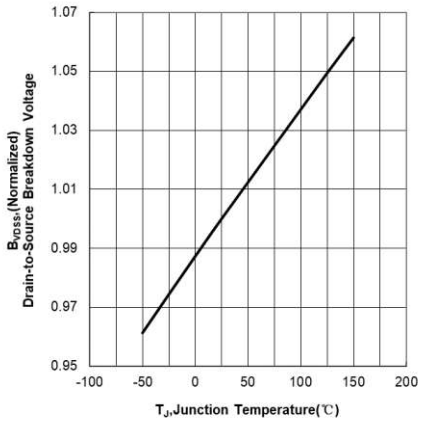


Figure 7. Normalized Breakdown Voltage vs Junction Temperature

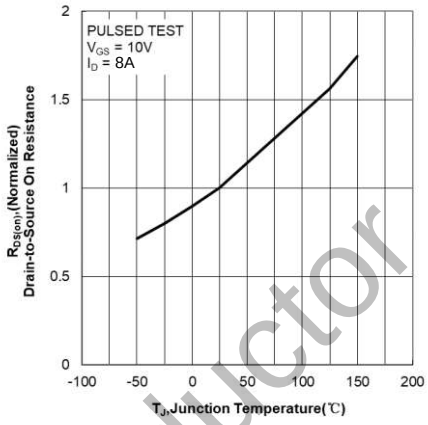


Figure 8. Normalized On Resistance vs Junction Temperature

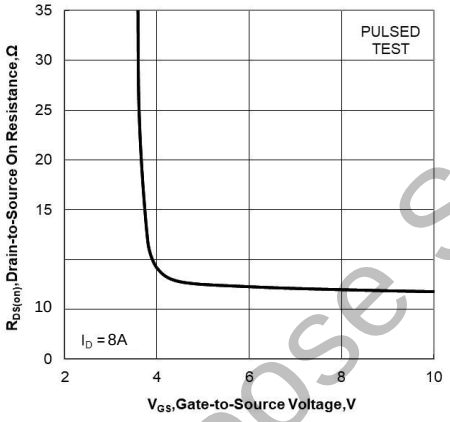


Figure 9. Drain-to-Source On Resistance vs Gate Voltage and Drain Current

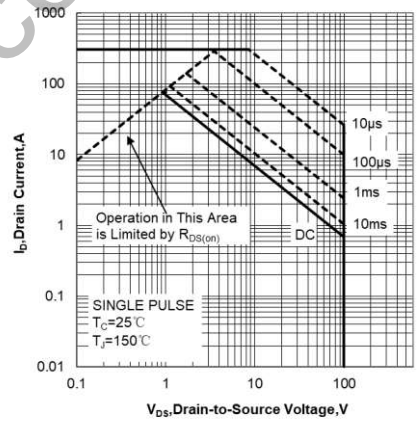


Figure 10. Maximum Safe Operating Area

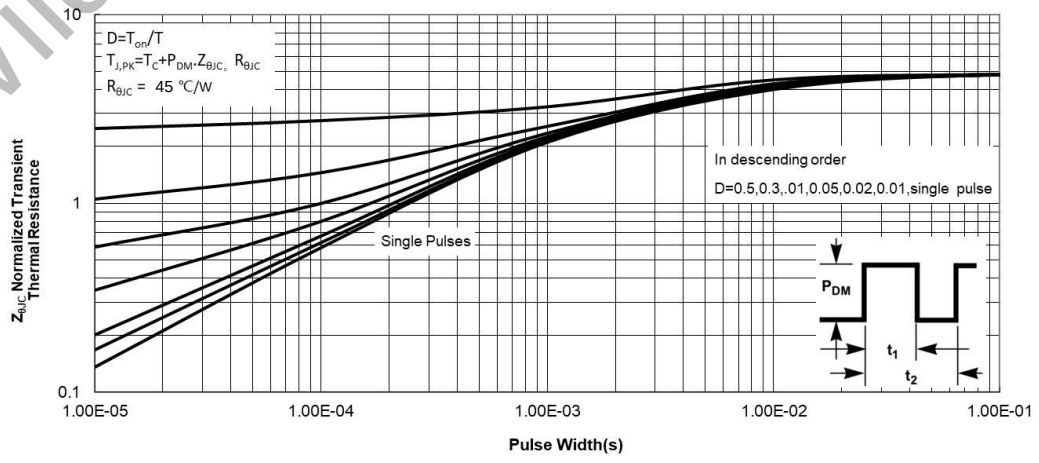


Figure11. Maximum Effective Transient Thermal Impedance, Junction-to-Case

WildGoose Semiconductor

Test Circuit

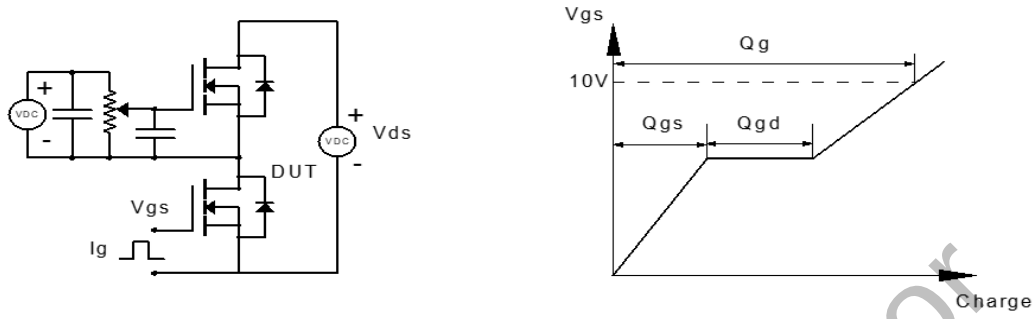


Figure 1: Gate Charge Test Circuit & Waveform

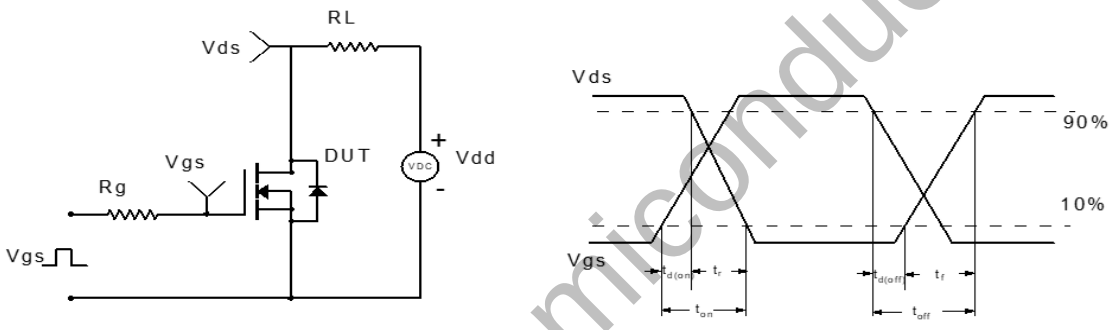


Figure 2: Resistive Switching Test Circuit & Waveform

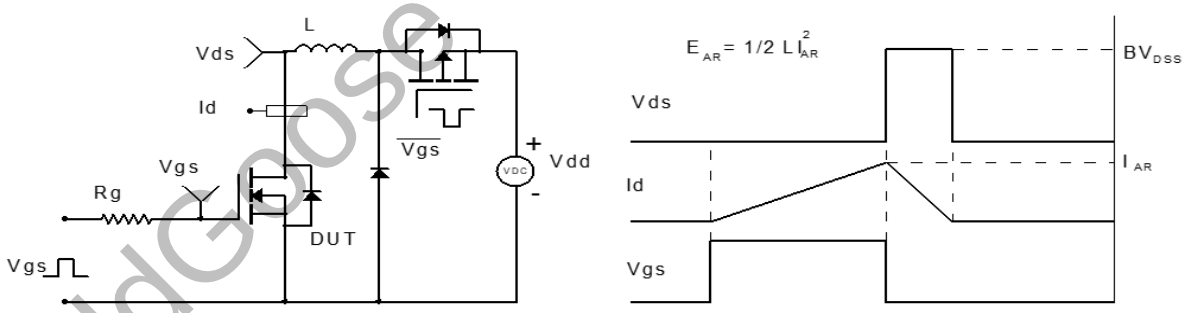


Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

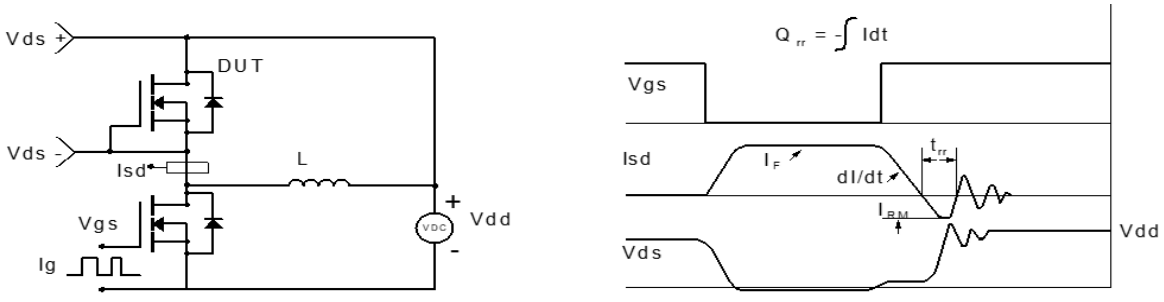


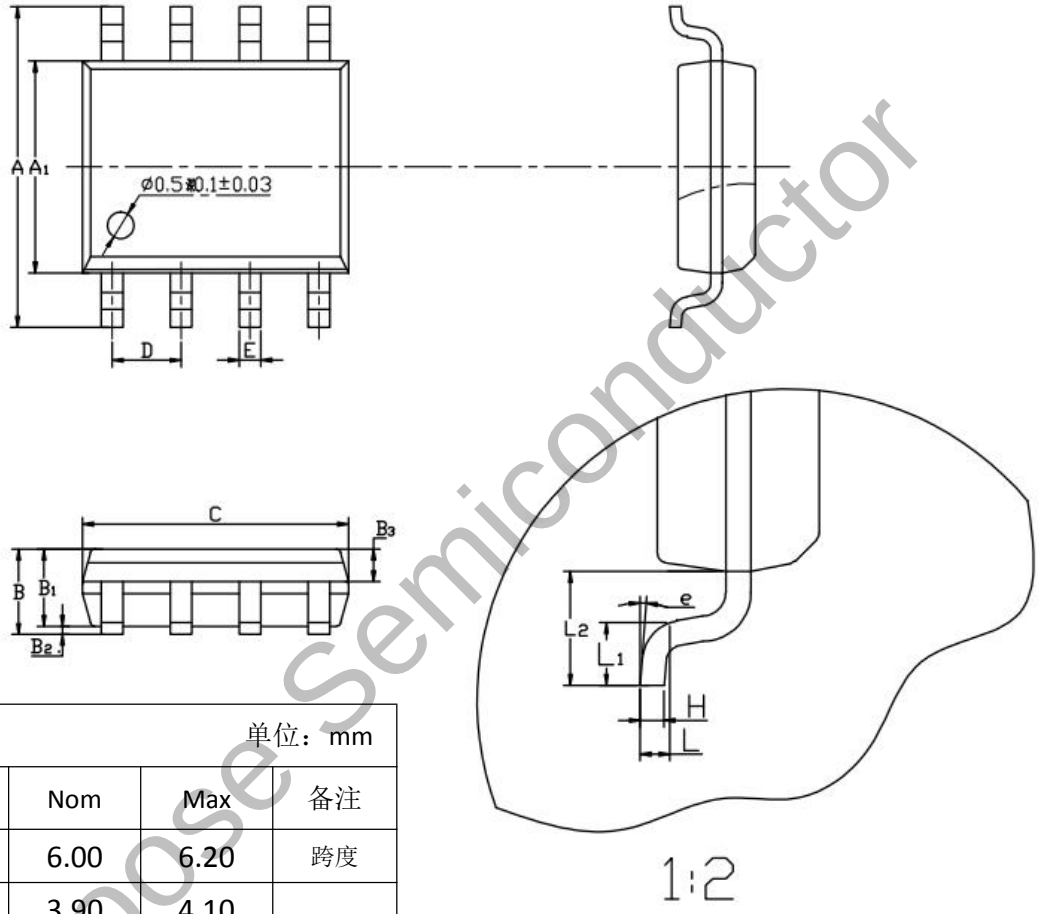
Figure 4: Diode Recovery Test Circuit & Waveform

WildGoose Semiconductor

Package Dimension

SOP-8

Unit: mm



尺寸数据：			单位：mm	
标注	Min	Nom	Max	备注
A	5.80	6.00	6.20	跨度
A1	3.70	3.90	4.10	
B	1.50	1.60	1.75	
B1	1.30	1.40	1.50	
B2	0.05	0.125	0.2	站高
B3	0.60	0.70	0.75	
C	4.75	4.85	5.05	
D	1.27BSC			
E	0.39	0.44	0.49	
H	0.10	0.20	0.25	
L	0.25BSC			
L1	0.40	0.6	0.8	
L2	0.95	1.05	1.20	脚长
e	0	4°	8°	

WildGoose Semiconductor