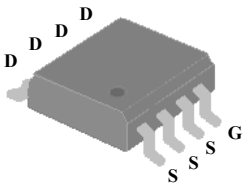
WG10V30

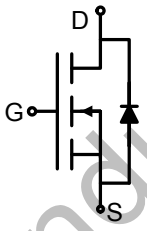
Features:

- ☐ Advanced Trench Technology
- ☐ Unrivalled Gate Charge :Qg= 15nC (Typ.).
- ☐ BVDSS=30V,I_D=15A
- ☐ R_{DS}(on) : 9.8mΩ (Typ.) @V_G=10V
- ☐ 100% Avalanche Tested

SOP-8

RoHS COMPLIANT





1. Gate (G)
2. Drain (D)
3. Source (S)

Schematic diagram

Absolute Maximum Ratings (T_A=25℃ 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_A= 25℃	15	A
		T_A= 100℃	7.2	A
I_{DM}	Pulsed Drain Current note1		44	A
EAS	Single Pulsed Avalanche Energy note2		21	mJ
P_D	Power Dissipation	T_A= 25℃	3.5	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		66	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

WildGoose Semiconductor

Electrical Characteristics (T_J=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	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}=±20V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1.0	1.6	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS}=10V, I_D=15A	-	9.8	13	mΩ
		V_{GS}=4.5V, I_D=15 A	-	14	20	mΩ
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1.0MHz	-	584	-	pF
C_{oss}	Output Capacitance		-	112	-	pF
C_{rss}	Reverse Transfer Capacitance		-	96	-	pF
Q_g	Total Gate Charge	V_{DS}=15V, I_D=10A, V_{GS}=10V	-	15	-	nC
Q_{gs}	Gate-Source Charge		-	4.7	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	3.6	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=30V, I_D=10A, V_{GS}=10V, R_{REN} =3Ω	-	5	-	ns
t_r	Turn-on Rise Time		-	8	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	21	-	ns
t_f	Turn-off Fall Time		-	7	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	15	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	44	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS}=0V, I_S=11A	-	0.8	1.2	V
trr	Body Diode Reverse Recovery Time	I_F=10A, dI/dt=100A/μs	-	7	-	ns
Qrr	Body Diode Reverse Recovery		-	5.9	-	nC

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

2. EAS condition : T_J=25℃, V_{DD}=15V, V_{GS}=10V, L=0.5mH, Rg=25Ω, I_{AS}=9A

3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

WinGoose Semiconductor

Typical Performance Characteristics

Figure1: Output Characteristics

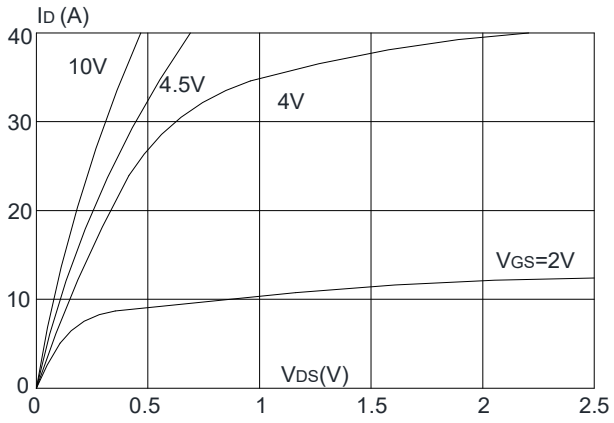


Figure 2: Typical Transfer Characteristics

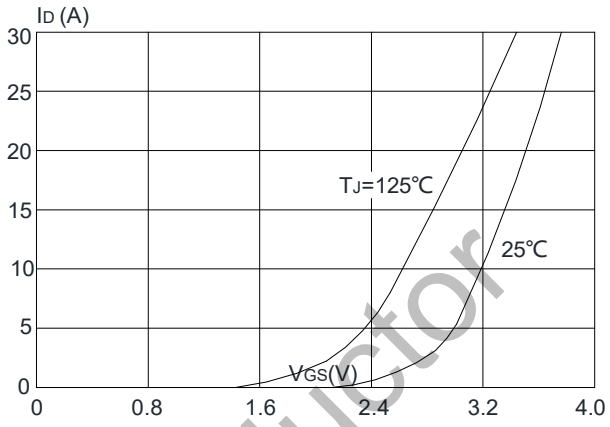


Figure 3: On-resistance vs. Drain Current

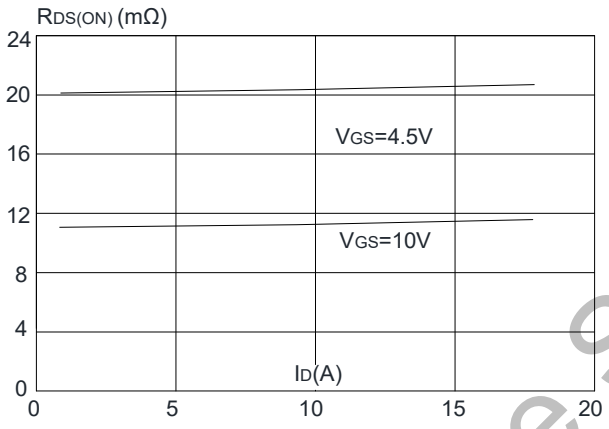


Figure 4: Body Diode Characteristics

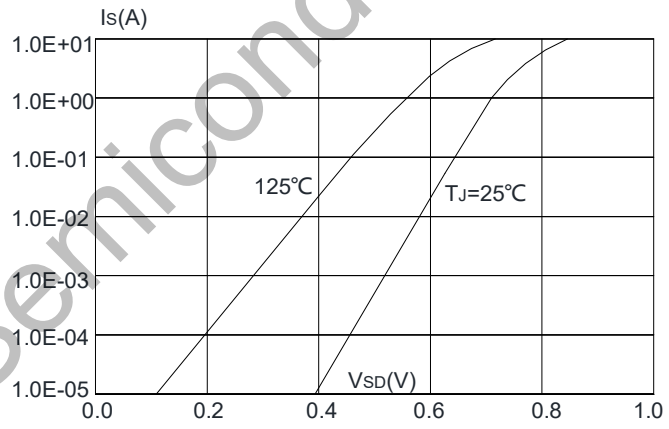


Figure 5: Gate Charge Characteristics

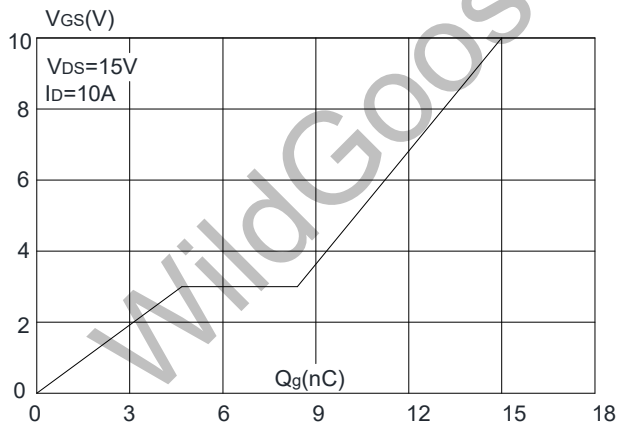
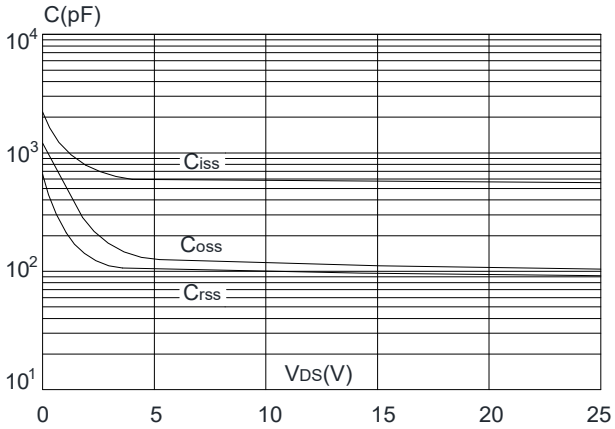


Figure 6: Capacitance Characteristics



WildGoose Semiconductor

Typical Performance Characteristics

Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

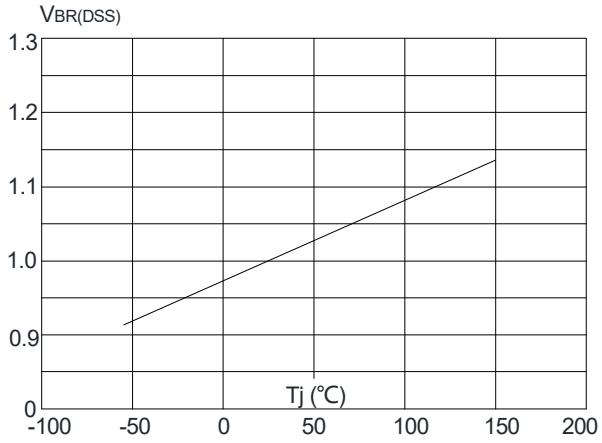


Figure 8: Normalized on Resistance vs. Junction Temperature

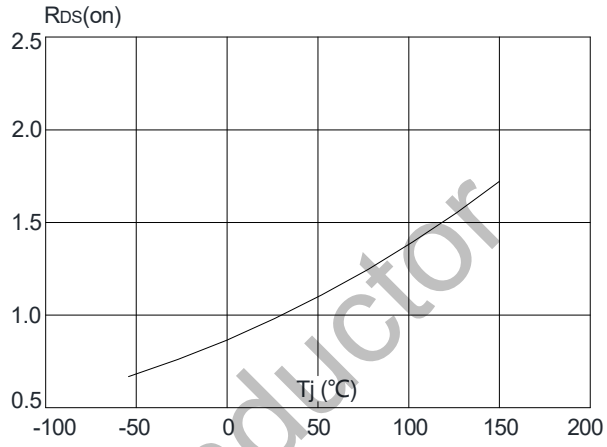


Figure 9: Maximum Safe Operating Area

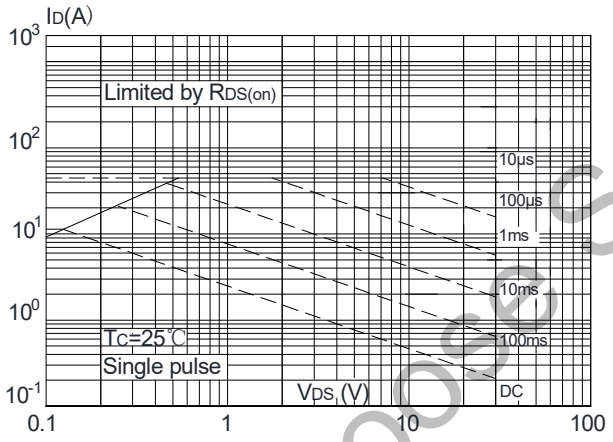


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

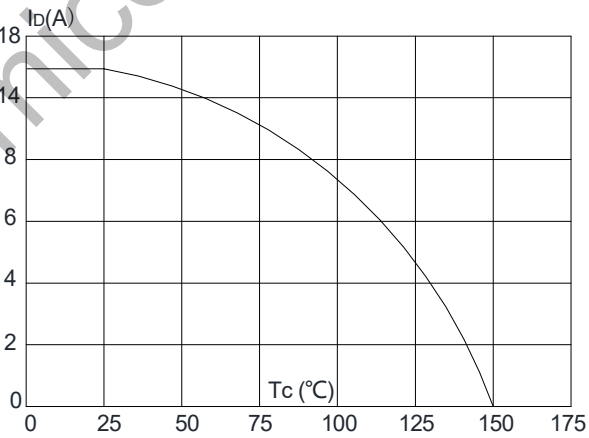
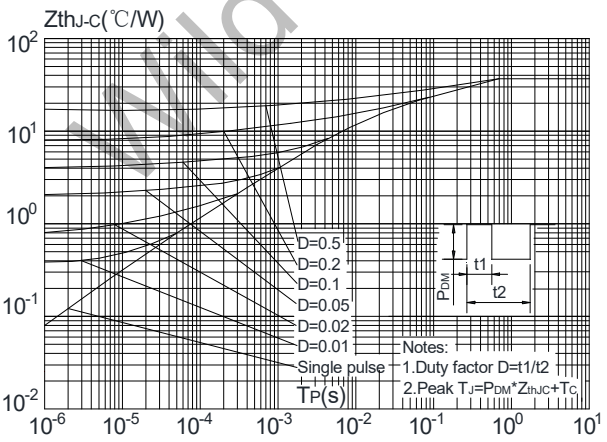


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case



WingCoos Semiconductor

Test Circuit

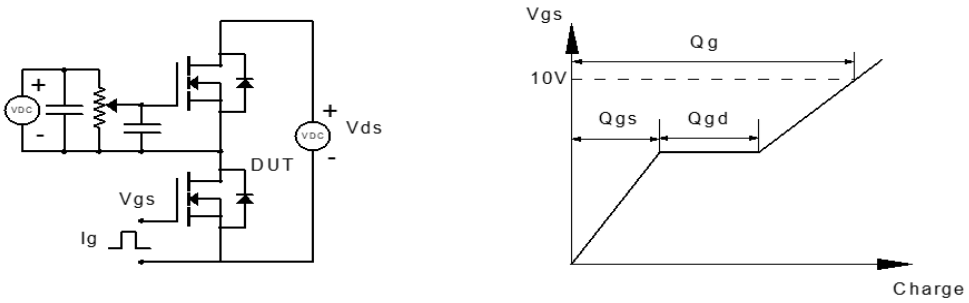


Figure 1: Gate Charge Test Circuit & Waveform

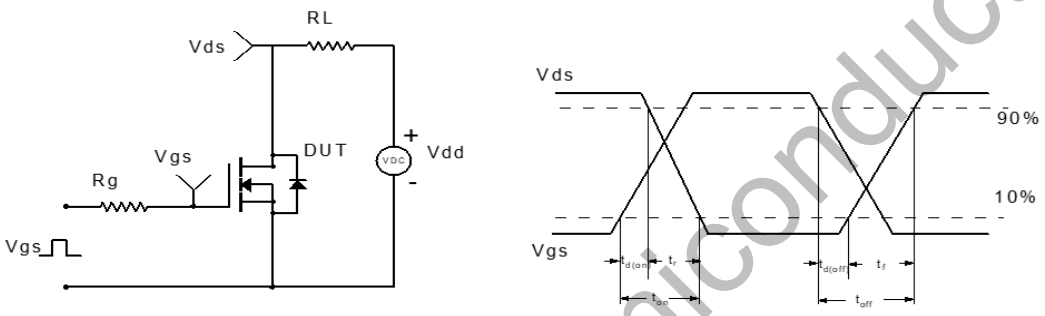


Figure 2: Resistive Switching Test Circuit & Waveform

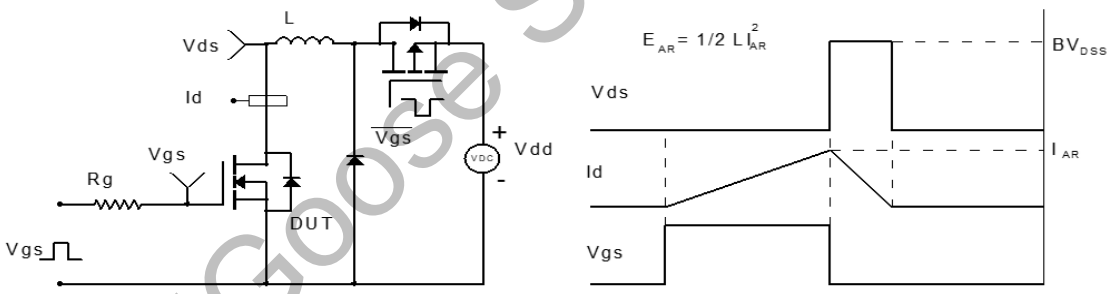


Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

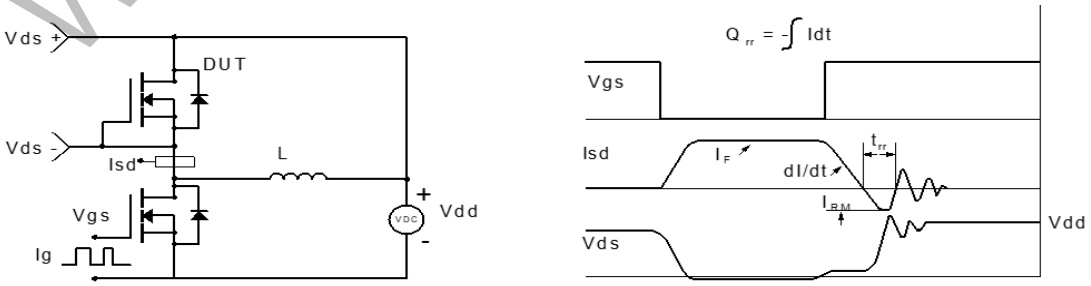


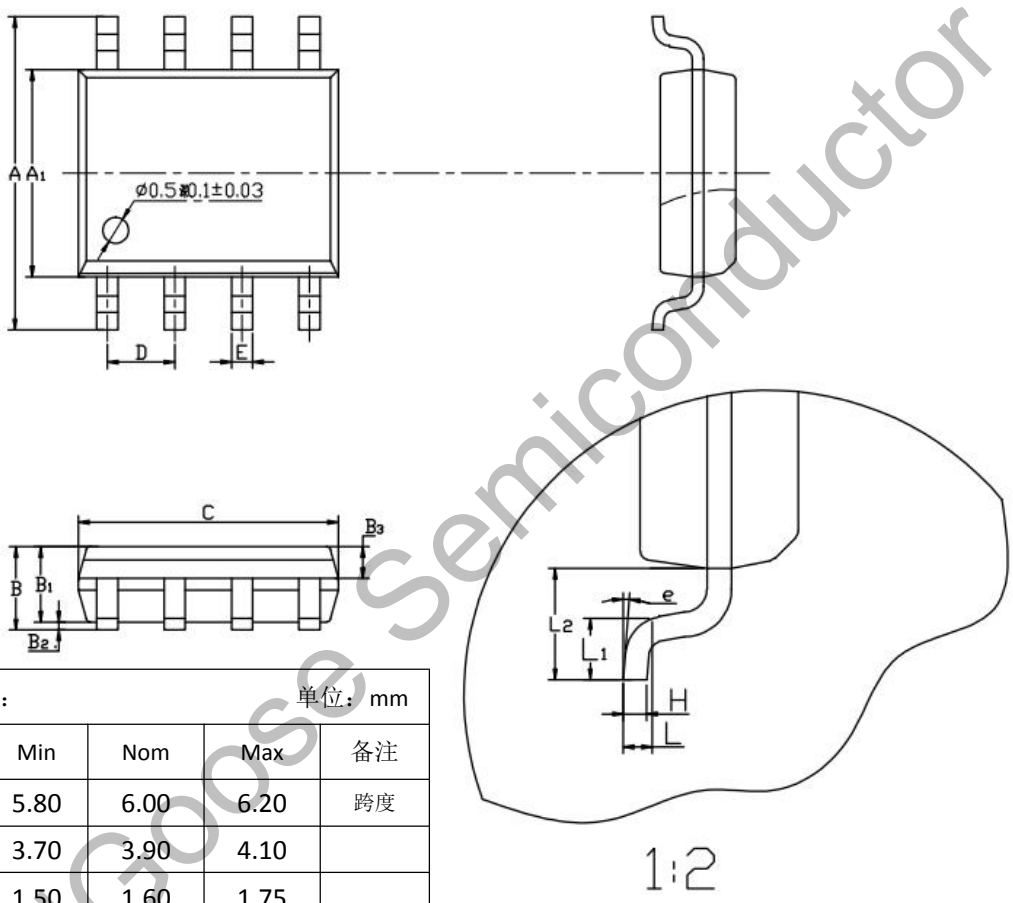
Figure 4: Diode Recovery Test Circuit & Waveform

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
A_1	3.70	3.90	4.10	
B	1.50	1.60	1.75	
B_1	1.30	1.40	1.50	
B_2	0.05	0.125	0.2	站高
B_3	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		
L_1	0.40	0.6	0.8	
L_2	0.95	1.05	1.20	脚长
e	0	4°	8°	

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