

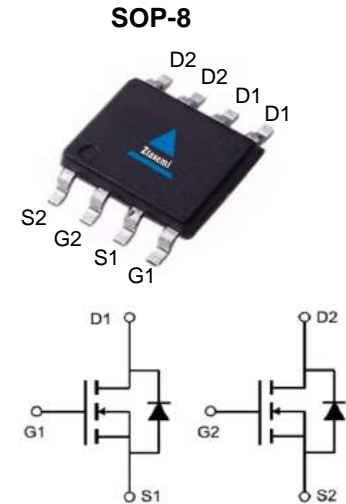
Features

- Dual N-Channel
- Green Device Available
- Low Gate Charge
- 100% EAS Tested

V_{DS}	60	V
$R_{DS(on),TYP@ V_{GS}=10V}$	10	m Ω
$R_{DS(on),TYP@ V_{GS}=4.5V}$	14	m Ω
I_D	13	A



Part ID	Package Type	Marking	Packing
ZTG11D06S	SOP-8	ZTG11D06S	4000pcs/reel



Absolute Maximum Ratings $T_A = 25^\circ\text{C}$, unless otherwise specified

Symbol	Parameter	Rating	Unit	
Common Ratings ($T_c=25^\circ\text{C}$ Unless Otherwise Noted)				
V_{GS}	Gate-Source Voltage	± 20	V	
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	60	V	
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$	
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
I_{DM}	Drain Current-Continuous@ Current-Pulsed (Note 2)	$T_c = 25^\circ\text{C}$ 50	A	
Mounted on Large Heat Sink				
I_D	Drain Current-Continuous (Note 1)	$T_c = 25^\circ\text{C}$	13	A
		$T_c = 100^\circ\text{C}$	8.8	A
P_D	Maximum Power Dissipation (Note 4)	3.1	W	
$R_{\theta JA}$	Thermal Resistance Junction-Ambient (Note 1)	40.3	$^\circ\text{C/W}$	
Drain-Source Avalanche Ratings				
EAS	Avalanche Energy, Single Pulsed (Note 3)	64.8	mJ	

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

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J=25°C (unless otherwise stated)						
V(BR)DSS	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	60	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} =0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1.4	1.9	2.4	V
R _{DS(on)}	Drain-Source On-State Resistance (Note 4)	V _{GS} =10V, I _D =13.5A	--	10	13	mΩ
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =11.5A	--	14	18	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	--	1055	--	pF
C _{oss}	Output Capacitance		--	422	--	pF
C _{rss}	Reverse Transfer Capacitance		--	21	--	pF
R _g	Gate Resistance	f=1MHz	--	1.4	--	Ω
Q _g	Total Gate Charge	V _{DS} =30V, I _D =13A, V _{GS} =10V	--	18.2	--	nC
Q _{gs}	Gate-Source Charge		--	6.5	--	nC
Q _{gd}	Gate-Drain Charge		--	3.8	--	nC
Switching Characteristics						
T _{d(on)}	Turn-on Delay Time	V _{DD} =30V, I _D =13A, R _G =3.0Ω, V _{GS} =10V	--	6.9	--	ns
T _r	Turn-on Rise Time		--	52.1	--	ns
T _{d(off)}	Turn-Off Delay Time		--	17.6	--	ns
T _f	Turn-Off Fall Time		--	7.8	--	ns
Source- Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
I _S	Diode Forward Current (Note 1,5)		--	--	13	A
V _{SD}	Forward on voltage (Note 2)	I _S =1A, V _{GS} =0V	--	--	1.2	V

Notes:

1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
3. The EAS data shows Max. rating . The test condition is V_{DD}=50V, V_{GS}=10V, L=0.4mH, I_{AS}=18A
4. The power dissipation is limited by 150°C junction temperature
5. The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics

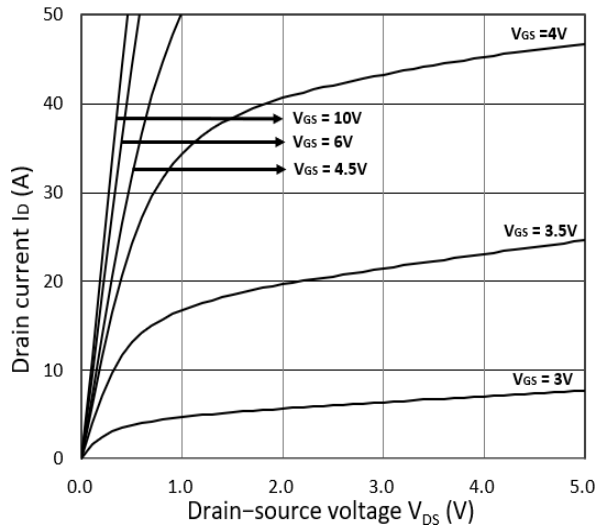


Figure 1. Output Characteristics

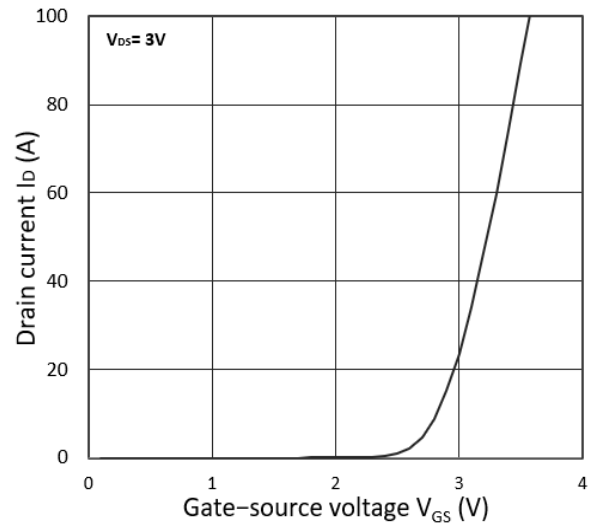


Figure 4. Transfer Characteristics

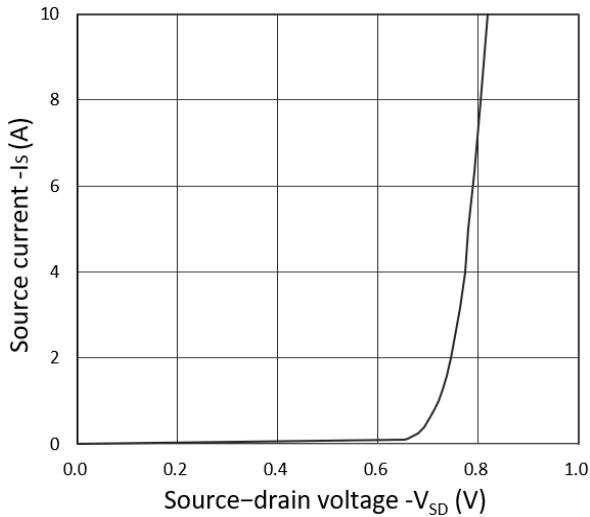


Figure 2. Forward Characteristics of Reverse

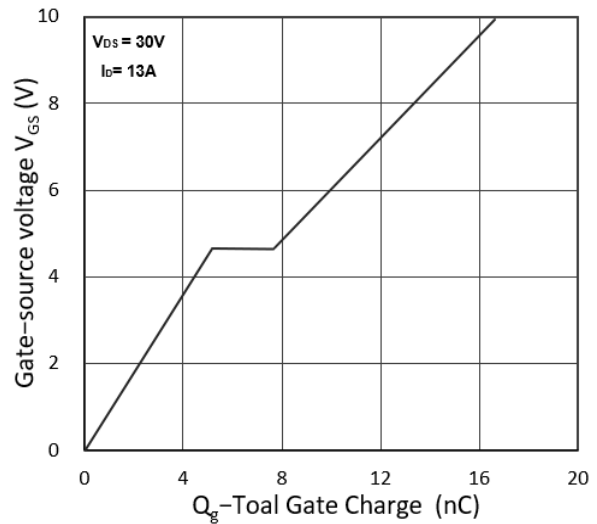


Figure 5. Gate Charge Characteristics

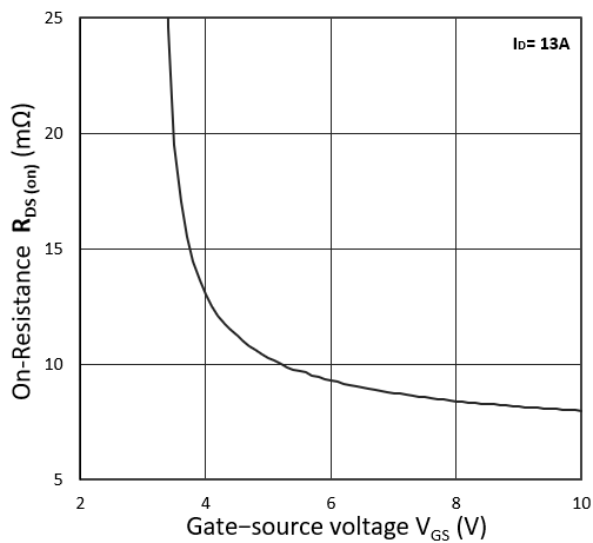


Figure 3. $R_{DS(on)}$ vs. V_{GS}

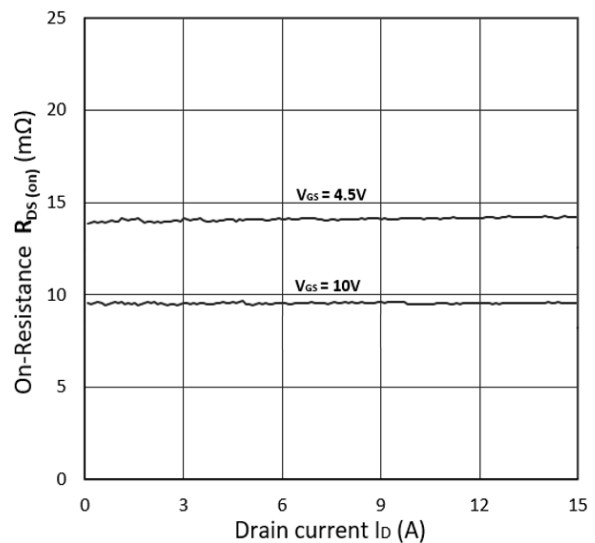


Figure 6. $R_{DS(on)}$ vs. I_D

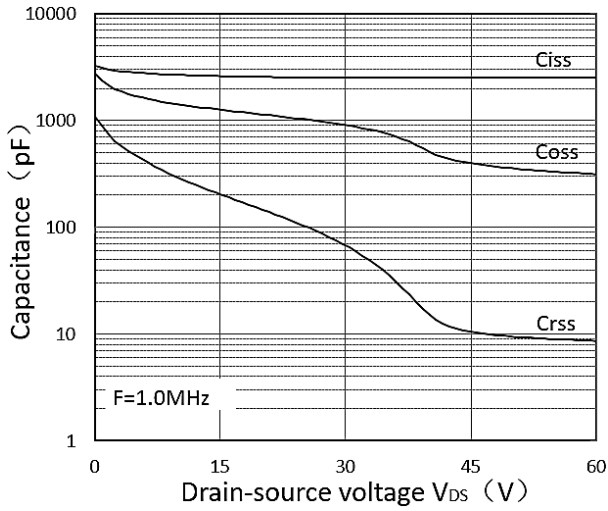


Figure 7. Capacitance Characteristics

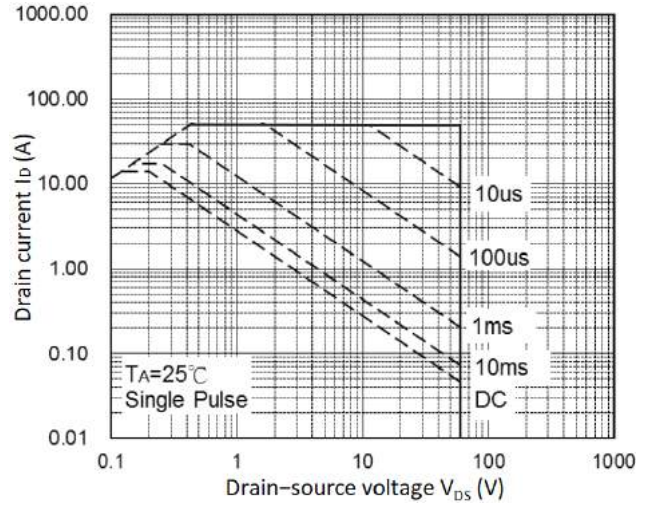


Figure 8. Safe Operating Area

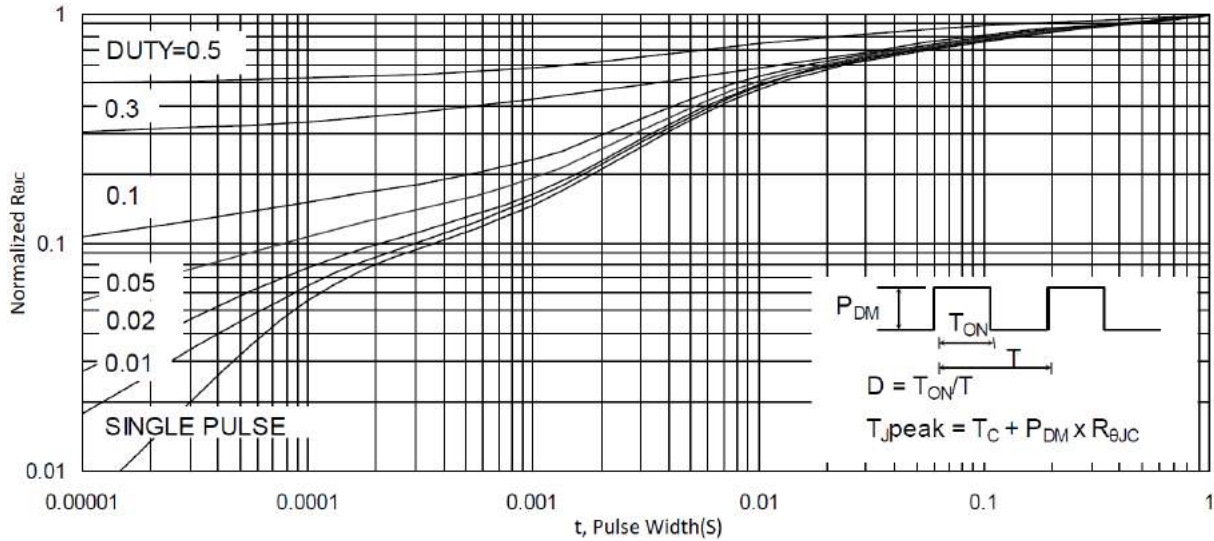


Figure 9. Normalized Maximum Transient Thermal Impedance

Test Circuit

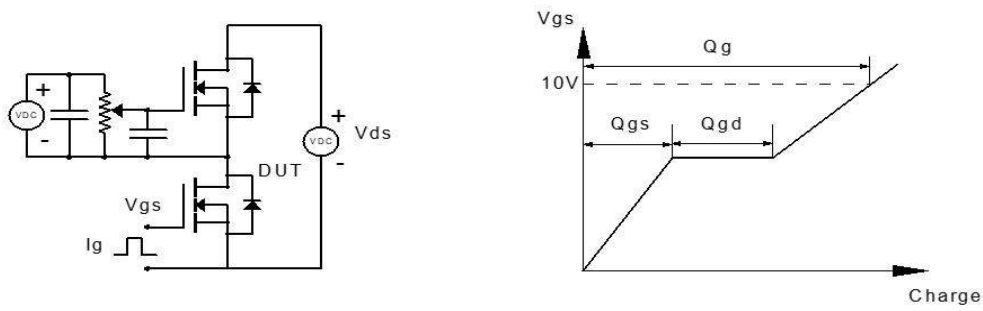


Figure 1: Gate Charge Test Circuit & Waveform

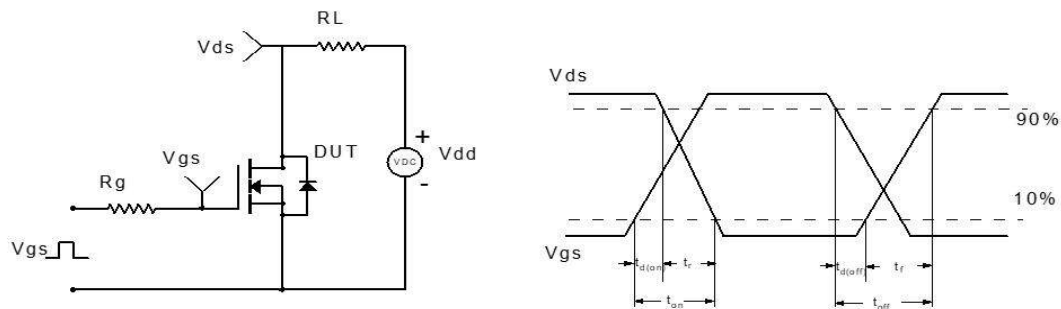


Figure 2: Resistive Switching Test Circuit & Waveform

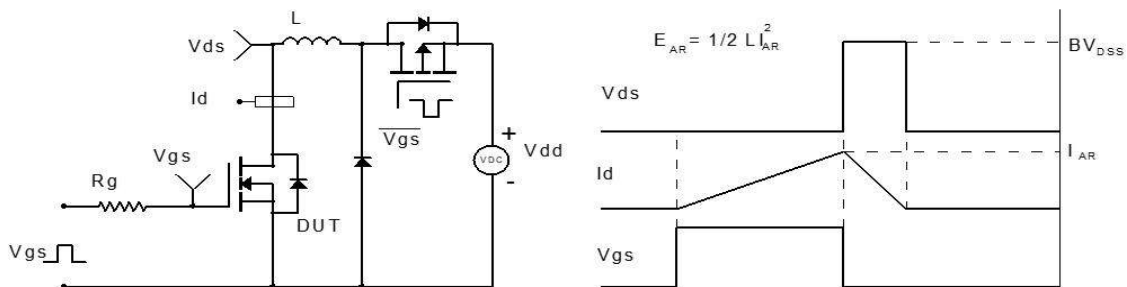


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

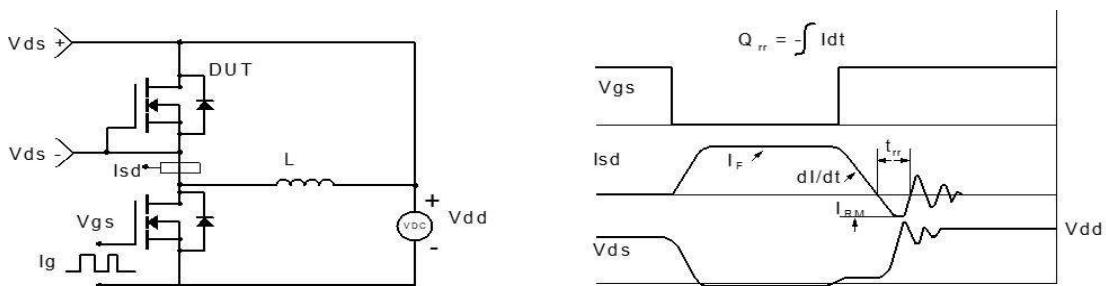
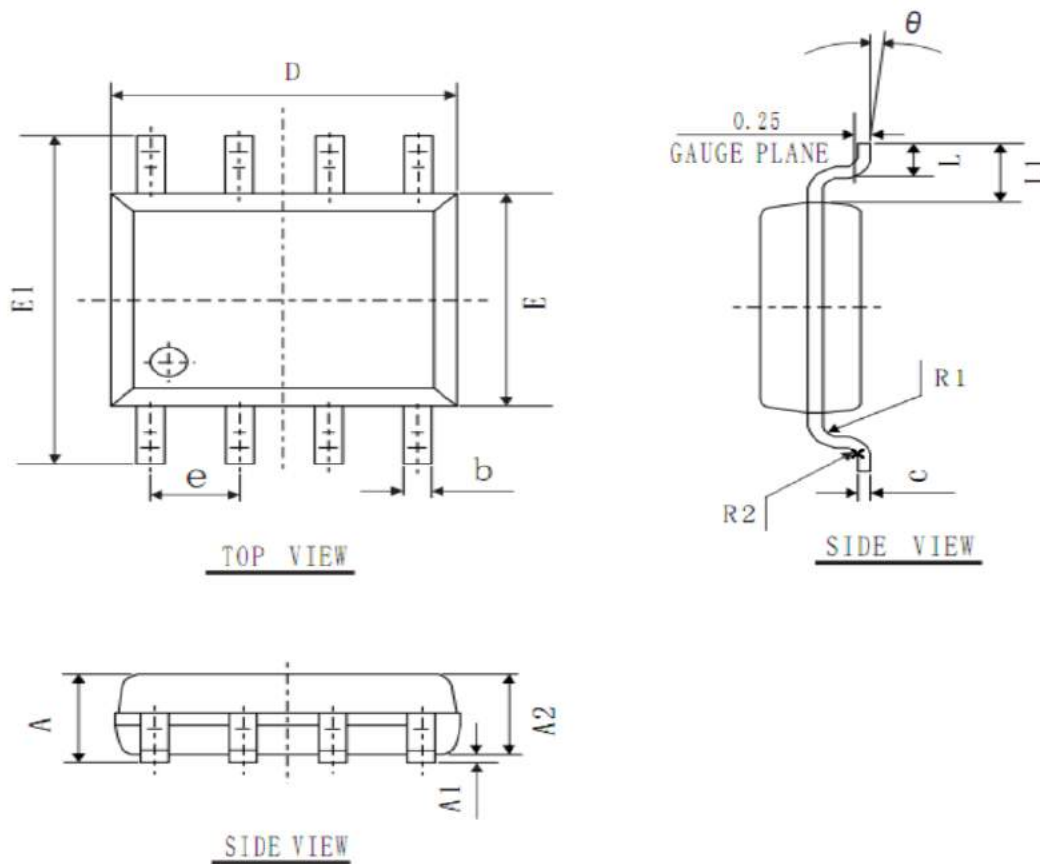


Figure 4: Diode Recovery Test Circuit & Waveform

SOP-8 Package Information



COMMON DIMENSIONS
(UNITS OF MEASURE=mm)

SYMBOL	MIN	NOM	MAX
A	1.40	1.60	1.80
A1	0.05	0.15	0.25
A2	1.35	1.45	1.55
b	0.30	0.40	0.50
c	0.153	0.203	0.253
D	4.80	4.90	5.00
E	3.80	3.90	4.00
E1	5.80	6.00	6.20
L	0.45	0.70	1.00
θ	2°	4°	6°
L1	1.04 REF		
e	1.27 BSC		
R1	0.07 TYP		
R2	0.07 TYP		

Customer Service

Sales and Service:

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