

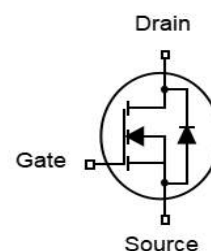
Features

- N-Channel
- Low $R_{DS(ON)}$
- High Speed Power Switching
- 100% EAS Tested

V_{DS}	65	V
$R_{DS(on),TYP@ V_{GS}=10V}$	3.5	m Ω
$R_{DS(on),TYP@ V_{GS}=4.5V}$	4.8	m Ω
I_D	95	A

DFN5x6


Part ID	Package Type	Marking	Packing
ZTG035N06G	DFN5x6	ZTG035N06G	5000pcs/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	65	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 1)	$T_c = 25^\circ\text{C}$ 380	A	
Mounted on Large Heat Sink				
I_D	Drain Current-Continuous	$T_c = 25^\circ\text{C}$	95	A
		$T_c = 100^\circ\text{C}$	61	A
P_D	Maximum Power Dissipation	73.5	W	
$R_{\theta JC}$	Thermal Resistance-Junction to Case	1.7	$^\circ\text{C/W}$	
$R_{\theta JA}$	Thermal Resistance Junction-Ambient (Note 3)	51	$^\circ\text{C/W}$	
Drain-Source Avalanche Ratings				
EAS	Avalanche Energy, Single Pulsed (Note 2)	184	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	65	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =65V, 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	1.2	1.7	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance ^(Note 4)	V _{GS} =10V, I _D =20A	--	3.5	4.8	mΩ
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =10A	--	4.8	6.6	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated) ^(Note 5)						
C _{iss}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	--	2178	--	pF
C _{oss}	Output Capacitance		--	733	--	pF
C _{rss}	Reverse Transfer Capacitance		--	41	--	pF
R _g	Gate Resistance	f=1MHz	--	1.8	--	Ω
Q _g	Total Gate Charge	V _{DS} =30V, I _D =20A, V _{GS} =10V	--	35	--	nC
Q _{gs}	Gate-Source Charge		--	6.5	--	nC
Q _{gd}	Gate-Drain Charge		--	8.2	--	nC
Switching Characteristics						
T _{d(on)}	Turn-on Delay Time	V _{DD} =30V, I _D =20A, R _G =3.0Ω, V _{GS} =10V	--	9.2	--	ns
T _r	Turn-on Rise Time		--	8.4	--	ns
T _{d(off)}	Turn-Off Delay Time		--	32.3	--	ns
T _f	Turn-Off Fall Time		--	12.4	--	ns
Source- Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
I _S	Diode Forward Current		--	--	95	A
V _{SD}	Forward on voltage ^(Note 4)	I _S =20A, V _{GS} =0V	--	--	1.2	V
T _{rr}	Reverse Recovery Time	V _{DD} =30V, I _F =20A	--	50	--	ns
Q _{rr}	Reverse Recovery Charge	di/dt=100A/μs	--	20	--	nC

Notes:

1. Repetitive rating, pulse width limited by junction temperature T_{J(MAX)}=150°C
2. The EAS data shows Max. rating . The test condition is V_{DD}=25V, V_{GS}=10V, L=0.5mH, I_{AS}=27A.
3. The data tested by surface mounted on a 1 inch2 FR-4 board with 20Z copper, The value in any given application depends on the user's specific board design.
4. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
5. This value is guaranteed by design hence it is not included in the production test.

Electrical Characteristics Diagrams

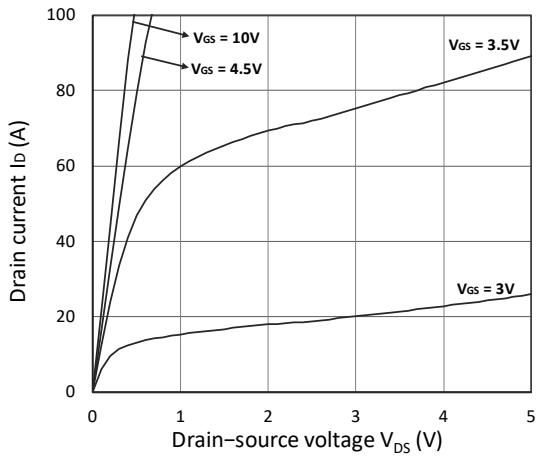


Figure 1. Output Characteristics

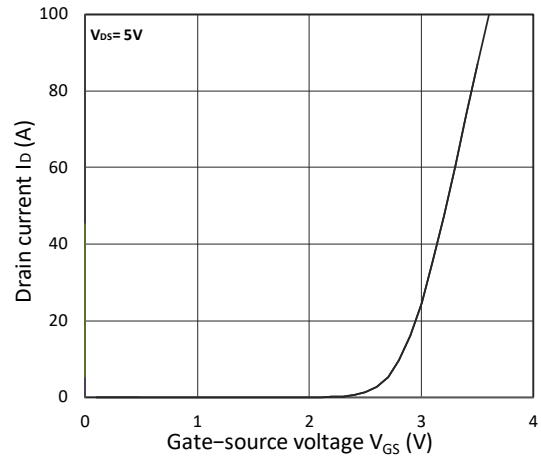


Figure 4. Transfer Characteristics

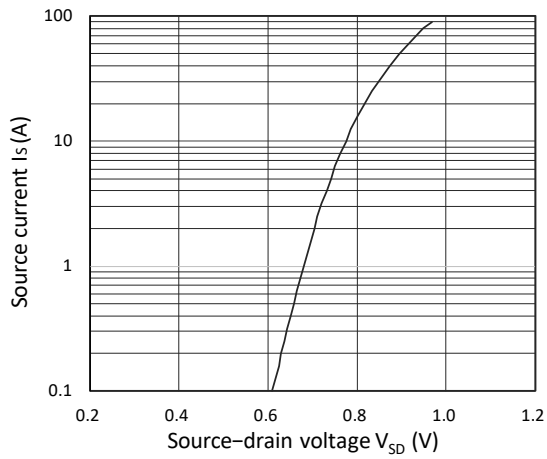


Figure 2. Forward Characteristics of Reverse

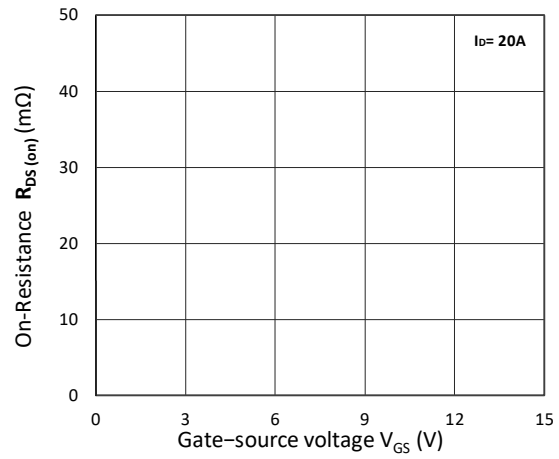


Figure 5. $R_{DS(on)}$ vs. V_{GS}

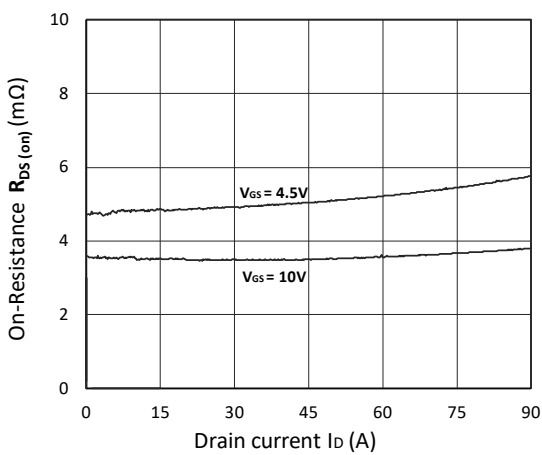


Figure 3. $R_{DS(on)}$ vs. I_D

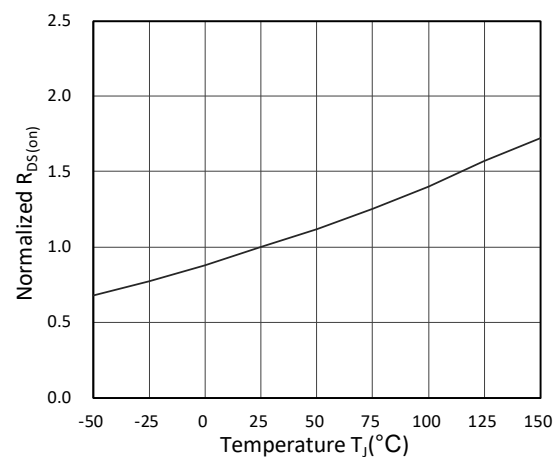


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

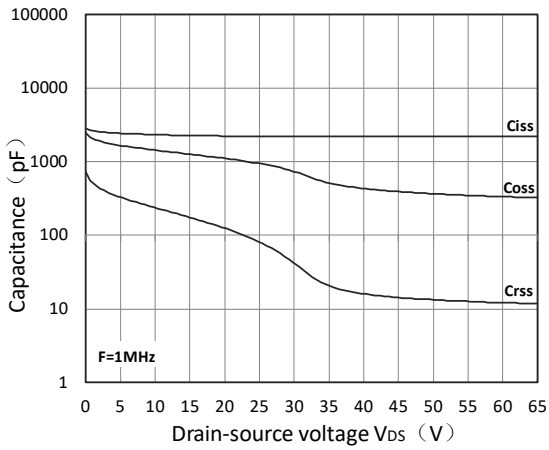


Figure 7. Capacitance Characteristics

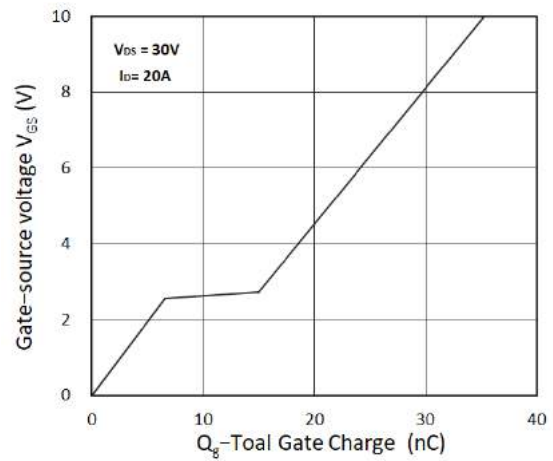


Figure 9. Gate Charge Characteristics

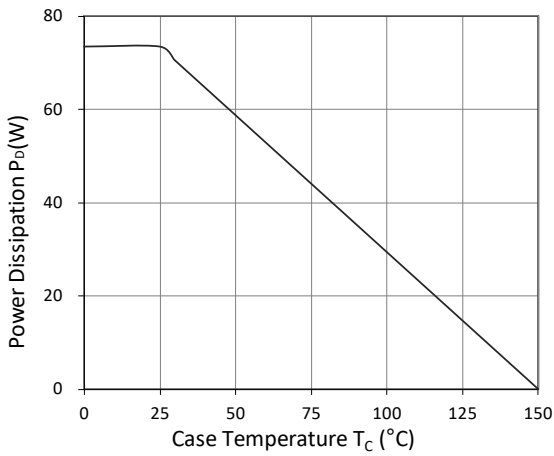


Figure 8. Power Dissipation

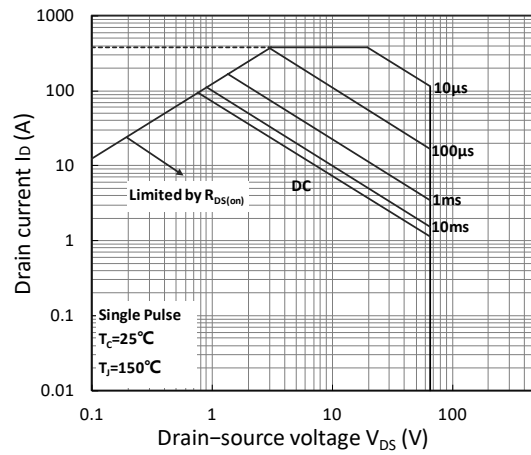


Figure 10. Safe Operating Area

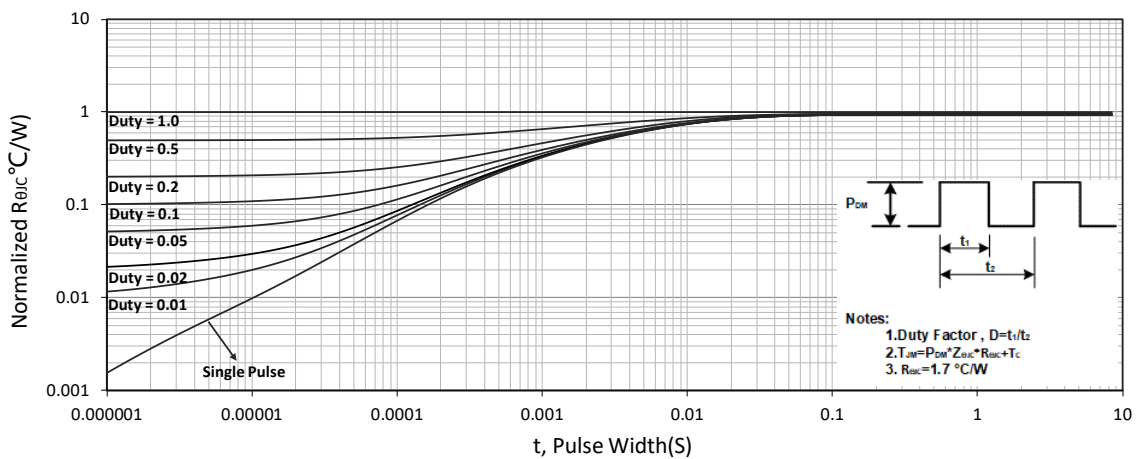
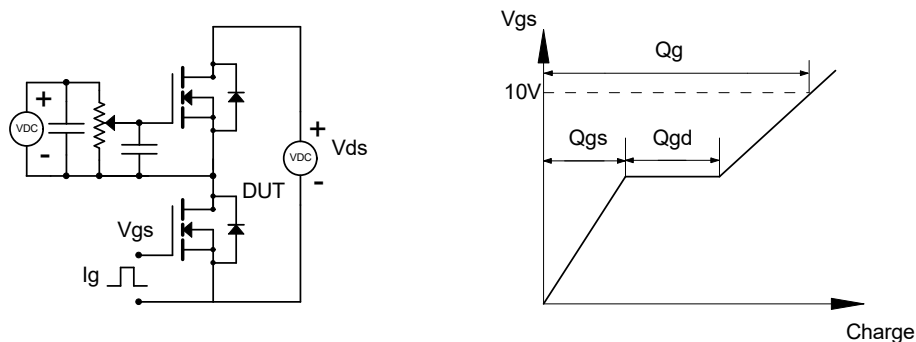


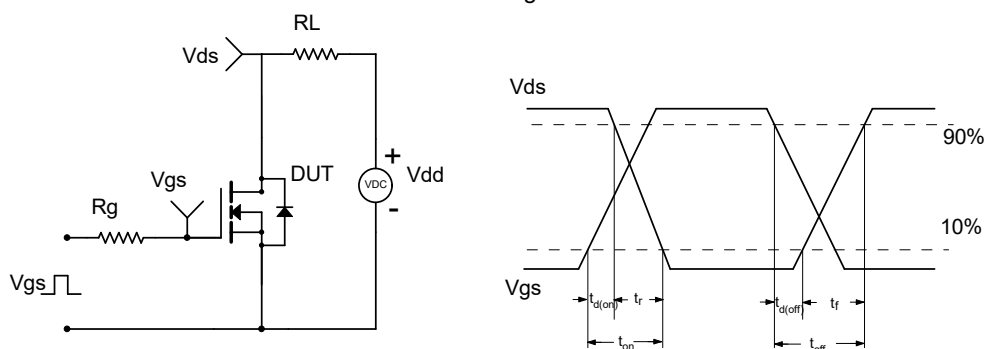
Figure 11. Normalized Maximum Transient Thermal Impedance

Test Circuit and Waveform

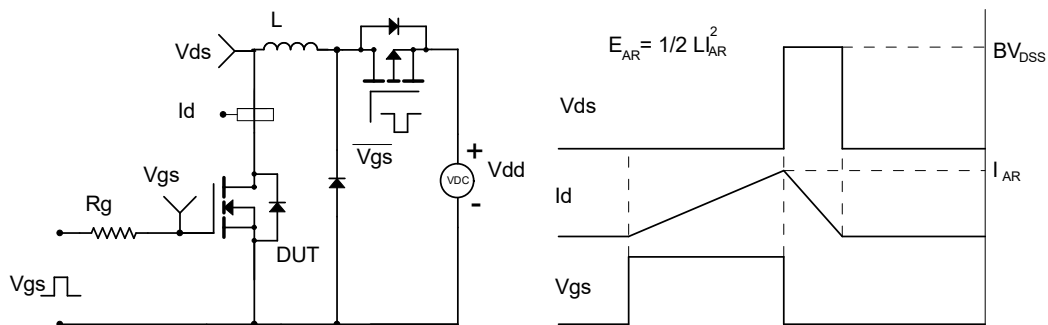
Gate Charge Test Circuit & Waveform



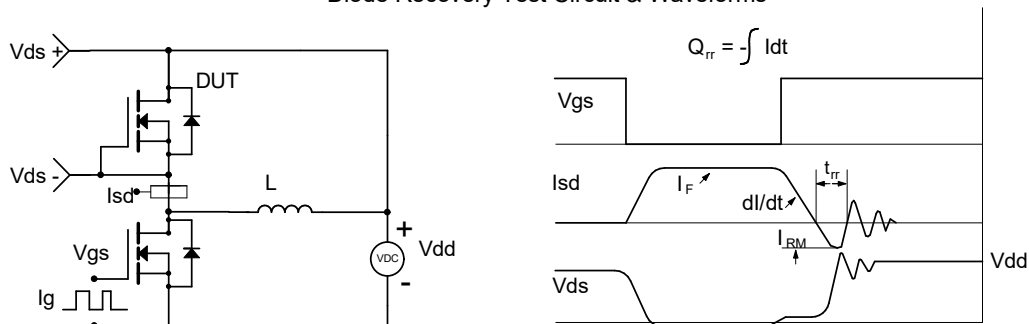
Resistive Switching Test Circuit & Waveforms



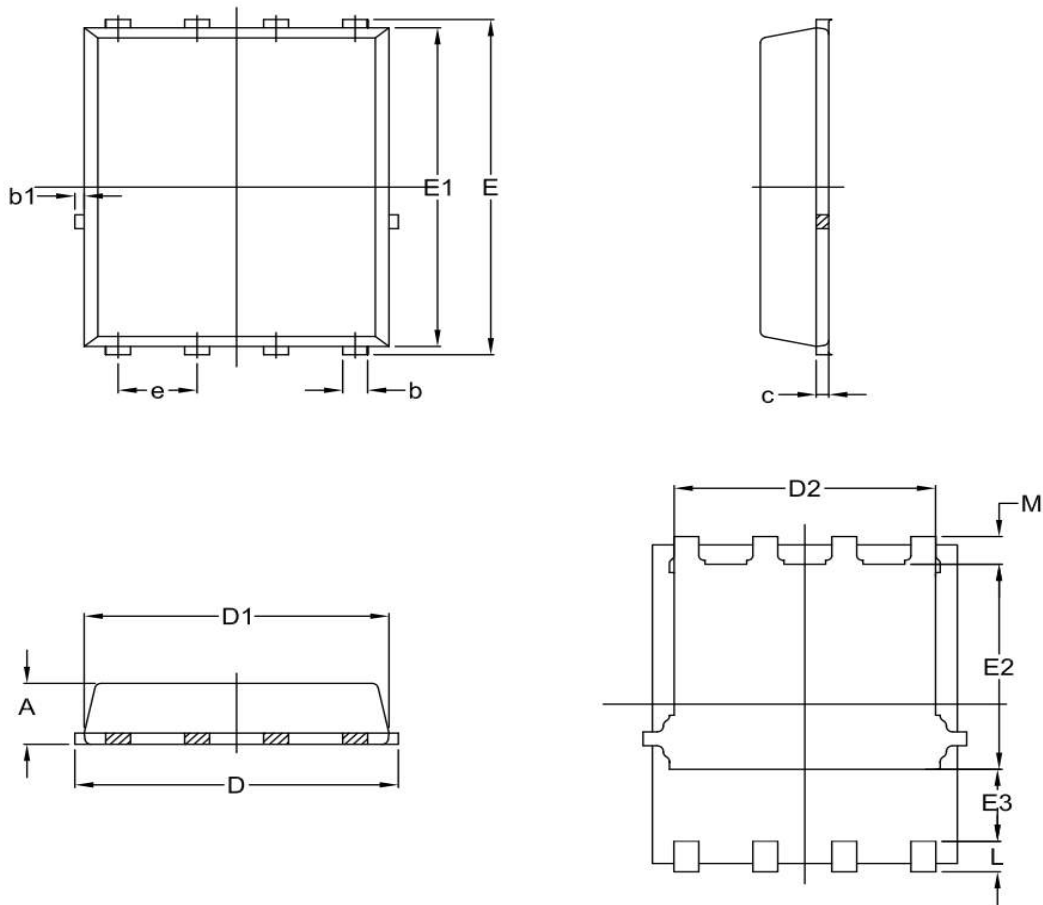
Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



DFN5x6-8L Package Information



DIM	MILLIMETERS		
	MIN	NOM	MAX
A	1.00	1.10	1.20
b	0.30	0.40	0.50
b ₁	0.02	0.15	0.22
c	0.15	0.20	0.35
D	4.95	5.15	5.35
D ₁	4.80	4.90	5.00
D ₂	4.00	4.20	4.40
E	5.95	6.05	6.25
E ₁	5.65	5.75	5.85
E ₂	3.50	3.70	3.90
E ₃	1.10	/	/
e	1.27		
L	0.40	0.55	0.70
M	0.35	0.50	0.65

Customer Service

Sales and Service:

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