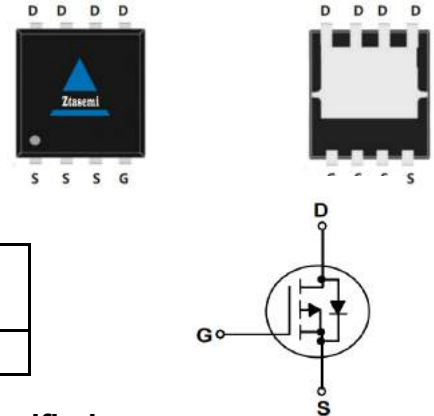


Features

- P-Channel
- Low Gate Charge
- Lead free product is acquired
- High Power and current handing capability
- 100% EAS Tested

V_{DS}	-60	V
$R_{DS(on),TYP}@ V_{GS}=-10V$	7.2	m Ω
$R_{DS(on),TYP}@ V_{GS}=-4.5V$	8.6	m Ω
I_D	-86	A

DFN5X6


Part ID	Package Type	Marking	Packing
ZT080P06G	DFN5x6	ZT080P06G	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	-60	V	
T_J	Maximum Junction Temperature	150	$^\circ\text{C}$	
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$	
I_{DM}	Drain Current-Continuous@ Current-Pulsed (Note 1)	$T_C=25^\circ\text{C}$ -344	A	
Mounted on Large Heat Sink				
I_D	Drain Current-Continuous	$T_C=25^\circ\text{C}$	-86	A
		$T_C=100^\circ\text{C}$	-55	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$	131	W
		$T_C=100^\circ\text{C}$	52	W
$R_{\theta JC}$	Thermal Resistance-Junction to Case	0.95	$^\circ\text{C/W}$	
Drain-Source Avalanche Ratings				
EAS	Avalanche Energy, Single Pulsed (Note 2)	812	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	-1.0	--	-2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-20A	--	7.2	9.4	mΩ
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-4.5V, I _D =-20A	--	8.6	11.4	mΩ
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-20A	--	50	--	S
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =-30V, V _{GS} =0V, f=1MHz	--	13298	--	pF
C _{oss}	Output Capacitance		--	506	--	pF
C _{rss}	Reverse Transfer Capacitance		--	468	--	pF
R _g	Gate Resistance	f=1MHz	--	1.7	--	Ω
Q _g	Total Gate Charge	V _{DS} =-30V, I _D =-20A, V _{GS} =-10V	--	195	--	nC
Q _{gs}	Gate-Source Charge		--	25	--	nC
Q _{gd}	Gate-Drain Charge		--	44	--	nC
Switching Characteristics						
T _{d(on)}	Turn-on Delay Time	V _{DS} =-30V, R _L =1.5Ω, R _G =3Ω, V _{GS} =-10V	--	25.6	--	ns
T _r	Turn-on Rise Time		--	32.5	--	ns
T _{d(off)}	Turn-Off Delay Time		--	272	--	ns
T _f	Turn-Off Fall Time		--	89	--	ns
Source- Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
I _{SD}	Source-Drain Current (Body Diode)		--	--	-86	A
V _{SD}	Forward on voltage (Note 3)	I _S = -20A, V _{GS} =0V	--	--	-1.2	V
T _{rr}	Reverse Recovery Time	T _J =25°C, I _F = -20A,	--	36.4	--	ns
Q _{rr}	Reverse Recovery Charge	di/dt=100A/μs	--	43.7	--	nC

Notes:

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2.E_{AS} condition: T_J=25°C, V_{DD}=-40V, V_G=-10V, R_G=25Ω, L=0.5mH.
- 3.Repetitive Rating: Pulse width limited by maximum junction temperature.

Typical Electrical And Thermal Characteristics (Curves)

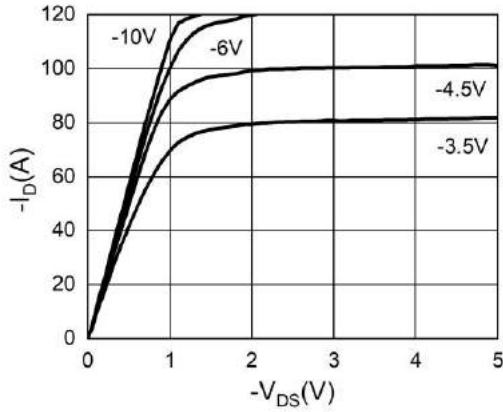


Figure 1. Output Characteristics

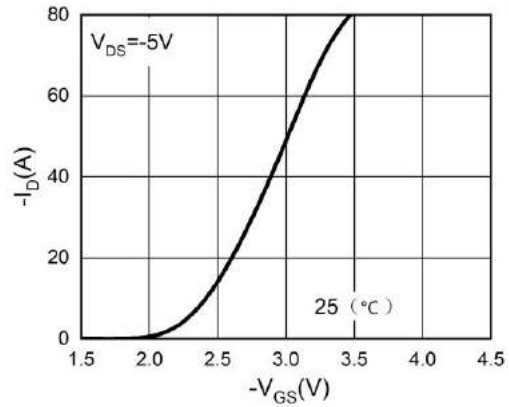


Figure 4. Transfer Characteristics

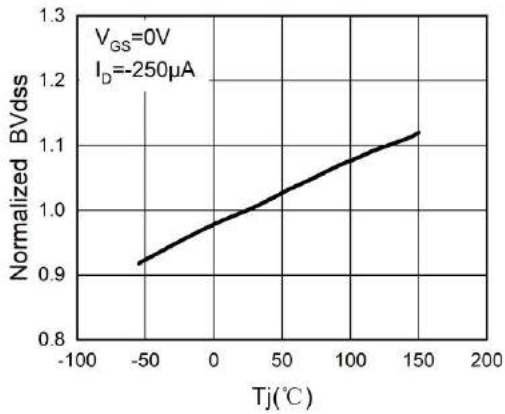


Figure 2. BV_{DS} vs Junction Temperature

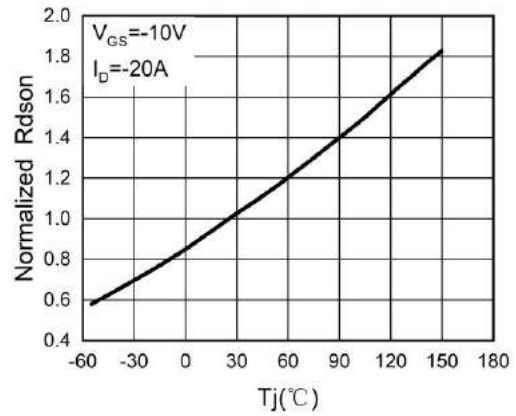


Figure 5. $R_{DS(ON)}$ vs Junction Temperature

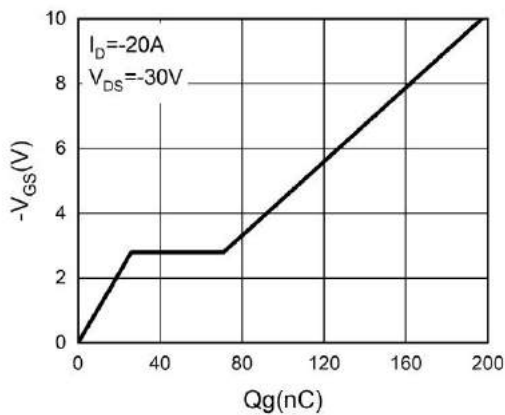


Figure 3. Gate Charge Waveforms

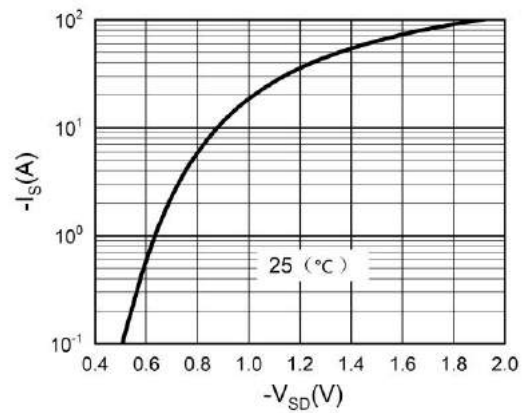


Figure 6. Body-Diode Characteristics

Typical Electrical And Thermal Characteristics (Curves)

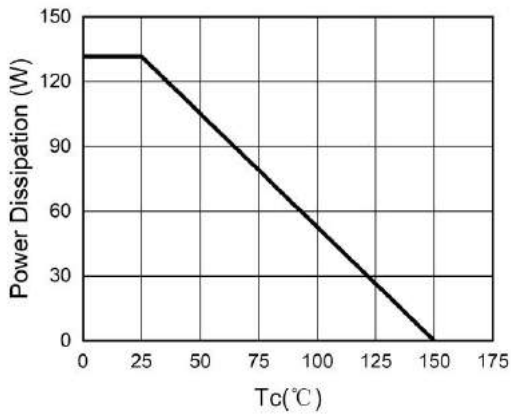


Figure 7. Power Dissipation

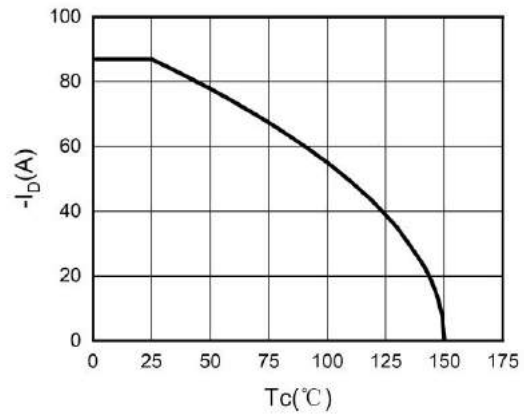


Figure 9. Drain Current

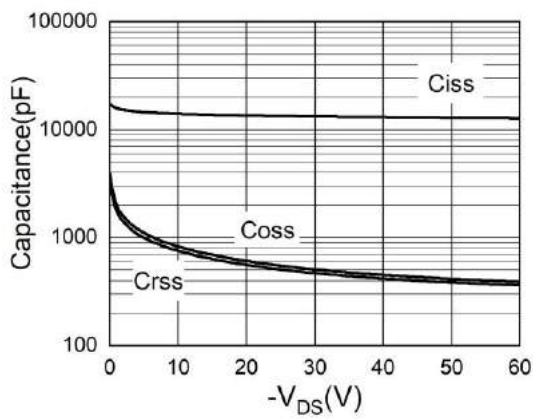


Figure 8. Capacitance

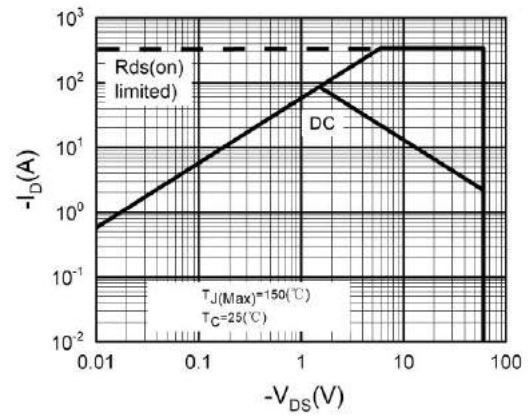
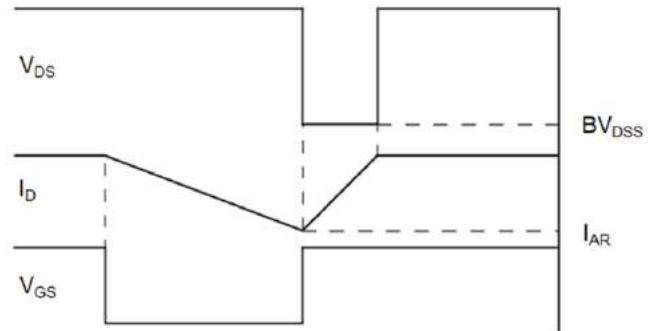
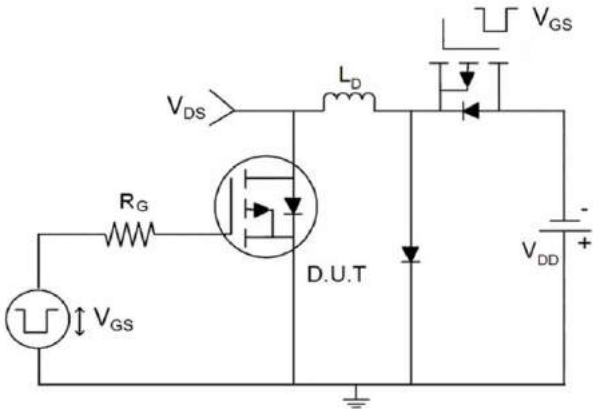


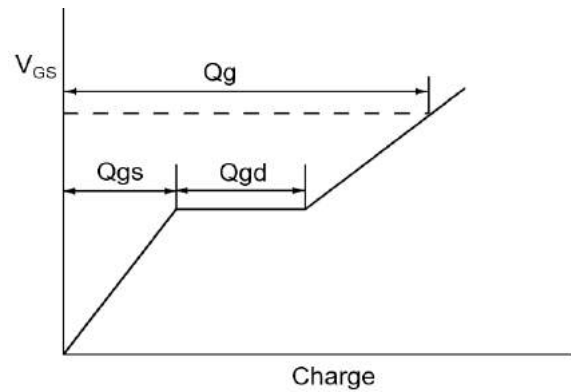
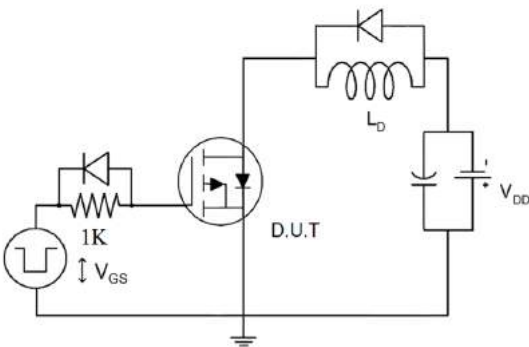
Figure 10. Maximum Safe Operating Area

Test Circuit

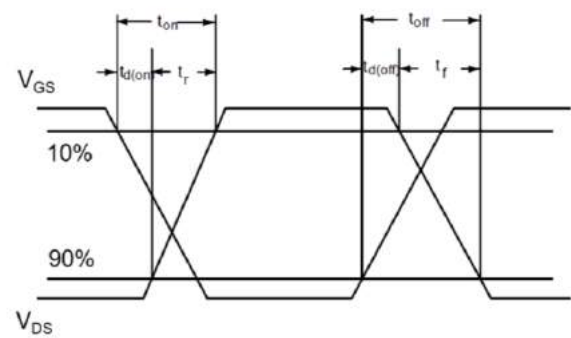
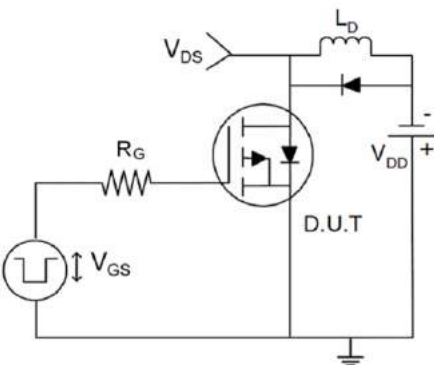
1) E_{AS} Test Circuits



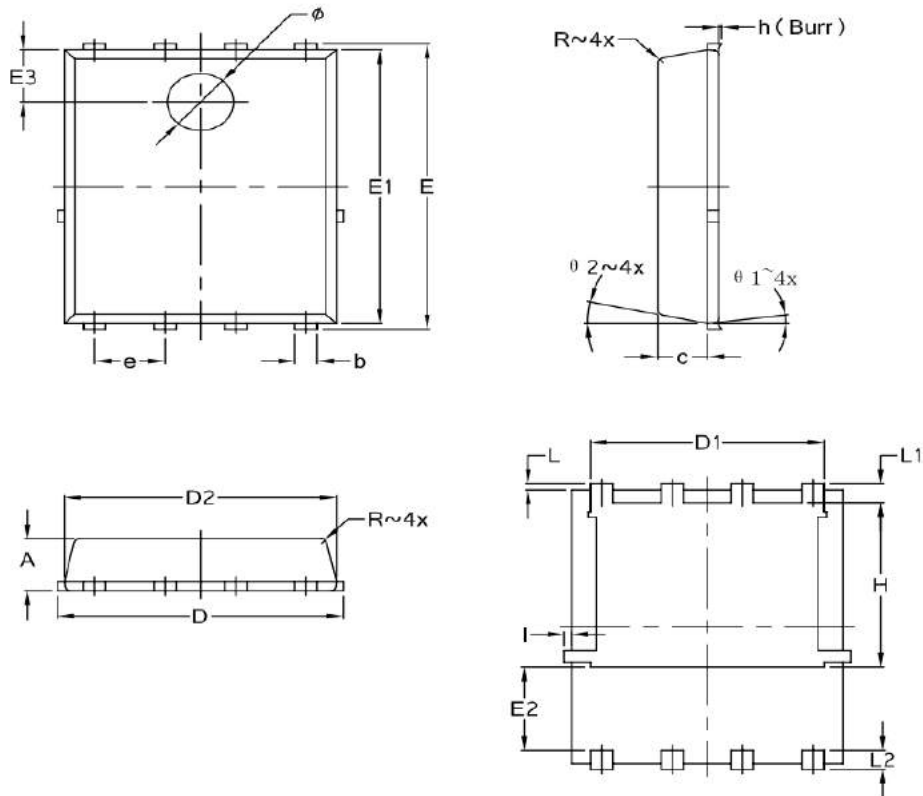
2) Gate Charge Test Circuit



3) Switch Time Test Circuit



DFN5x6-8L Package Information



SYMBOL	COMMON			
	MM		INCH	
	MIN.	MAX.	MIN.	MAX.
A	1.03	1.17	0.0406	0.0461
b	0.35	0.46	0.0138	0.0181
c	0.84	0.95	0.0331	0.0374
D	4.83	5.37	0.1902	0.2114
D1	4.14	4.28	0.1630	0.1685
D2	4.83	4.97	0.1902	0.1957
E	6.03	6.13	0.2374	0.2413
E1	5.68	5.82	0.2236	0.2291
E2	1.65	—	0.0650	—
E3	1.03	1.17	0.0406	0.0461
e	1.27 BSC		0.0500 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.40	0.48	0.0157	0.0189
L2	0.40	0.48	0.0157	0.0189
H	3.315	3.475	0.1305	0.1368
I	—	0.16	—	0.0063
ϕ	1.13	1.27	0.0445	0.0500
R	0.10		0.0039	
$\theta 1$	7° REF		7° REF	
$\theta 2$	12° REF		12° REF	
h	0.08 MAX		0.0031	

Customer Service

Sales and Service:

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