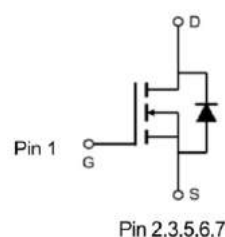
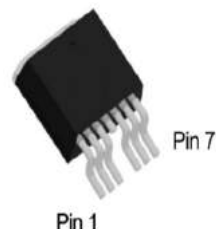


Features

- N-Channel
- Low $R_{DS(on)}$ & FOM
- Very low on-resistance $R_{DS(on)}$
- 175 °C operating temperature
- Pb-free lead plating
- 100% EAS Tested

V_{DS}	100	V
$R_{DS(on),TYP}@ V_{GS}=10V$	1.5	m Ω
I_D	330	A

TO-263-6L


Part ID	Package Type	Marking	Packing
ZTG015N10B	TO-263-6L	ZTG015N10B	800pcs/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	100	V	
T_J	Maximum Junction Temperature	175	$^\circ\text{C}$	
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$	
I_{DM}	Drain Current-Continuous@ Current-Pulsed	$T_C = 25^\circ\text{C}$ 1320	A	
Mounted on Large Heat Sink				
I_D	Drain Current-Continuous	$T_C = 25^\circ\text{C}$	330	A
		$T_C = 100^\circ\text{C}$	240	A
P_D	Maximum Power Dissipation	400	W	
	Derating factor	2.67	W/ $^\circ\text{C}$	
$R_{\theta JC}$	Thermal Resistance-Junction to Case	0.38	$^\circ\text{C}/\text{W}$	
Drain-Source Avalanche Ratings				
EAS	Avalanche Energy, Single Pulsed (Note 1)	2975	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	100	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =100V, 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	2.0	3.0	4.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =165A	--	1.5	1.9	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated) (Note 2)						
C _{iss}	Input Capacitance	V _{DS} =50V, V _{GS} =0V, f=1MHz	--	16998	--	pF
C _{oss}	Output Capacitance		--	1498	--	pF
C _{rss}	Reverse Transfer Capacitance		--	76	--	pF
R _g	Gate Resistance f=1MHz	f=1MHz	--	2.8	--	Ω
Q _g	Total Gate Charge	V _{DS} =50V, I _D =165A, V _{GS} =10V	--	250	--	nC
Q _{gs}	Gate-Source Charge		--	71	--	nC
Q _{gd}	Gate-Drain Charge		--	62	--	nC
Switching Characteristics (Note 2)						
T _{d(on)}	Turn-on Delay Time	V _{DS} =50V, I _D =165A, R _G =1.6Ω, V _{GS} =10V	--	36	--	ns
T _r	Turn-on Rise Time		--	28	--	ns
T _{d(off)}	Turn-Off Delay Time		--	81	--	ns
T _f	Turn-Off Fall Time		--	33	--	ns
Source- Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
I _{SD}	Source-Drain Current (Body Diode)		--	--	330	A
V _{SD}	Forward on voltage	I _S =165A, V _{GS} =0V	--	--	1.2	V
T _{rr}	Reverse Recovery Time	T _J =25°C, I _F =165A,	--	105	--	ns
Q _{rr}	Reverse Recovery Charge	di/dt=100A/μs	--	290	--	nC

Notes:

1. EAS condition : T_J=25°C, V_{DS}=50V, V_{GS}=10V, L=0.5mH, R_G=25Ω
2. Guaranteed by design, not subject to production
3. These curves are based on the junction-to-case thermal impedance which is measured with the device mounted to a large heatsink, assuming a maximum junction temperature of T_{J(MAX)}=175° C. The SOA curve provides a single pulse rating.

Typical Electrical and Thermal Characteristics

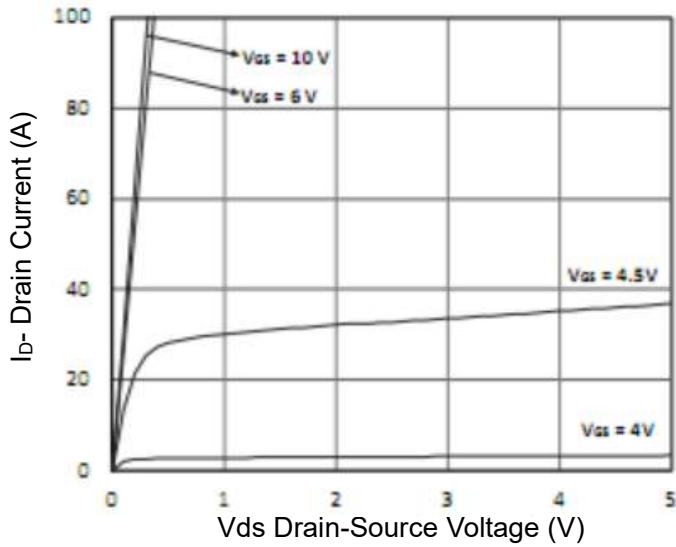


Figure 1 Output Characteristics

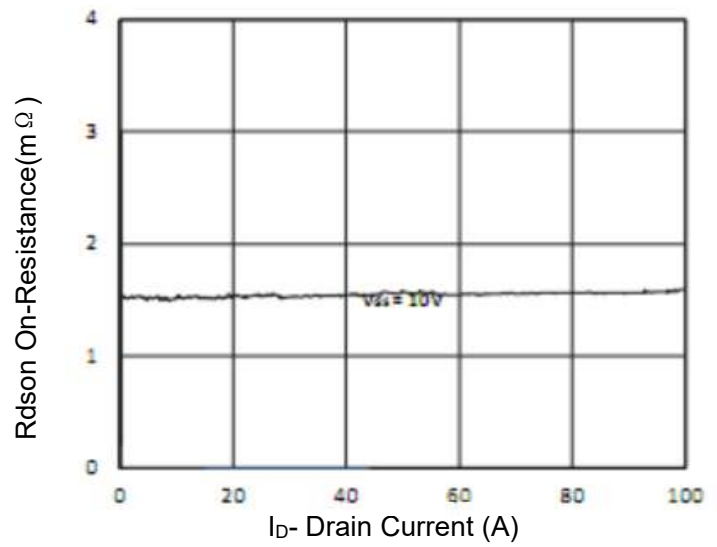


Figure 4 Rdson- Drain Current

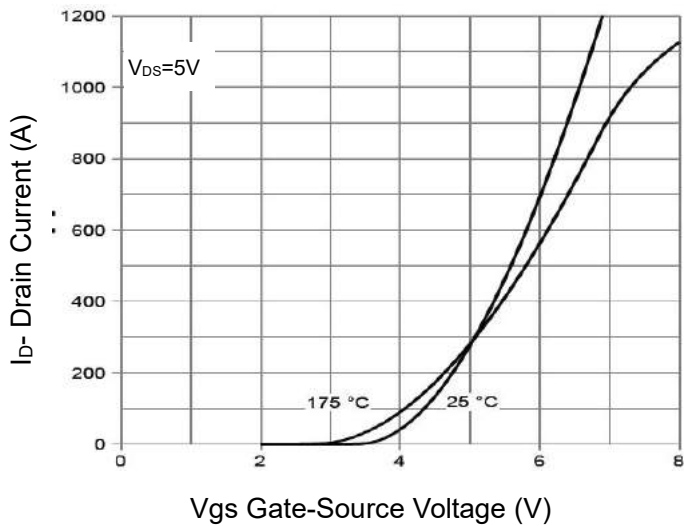


Figure 2 Transfer Characteristics

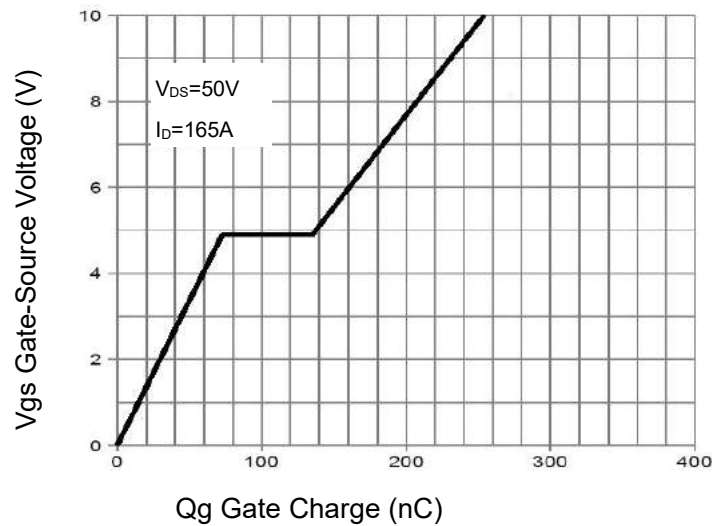


Figure 5 Gate Charge

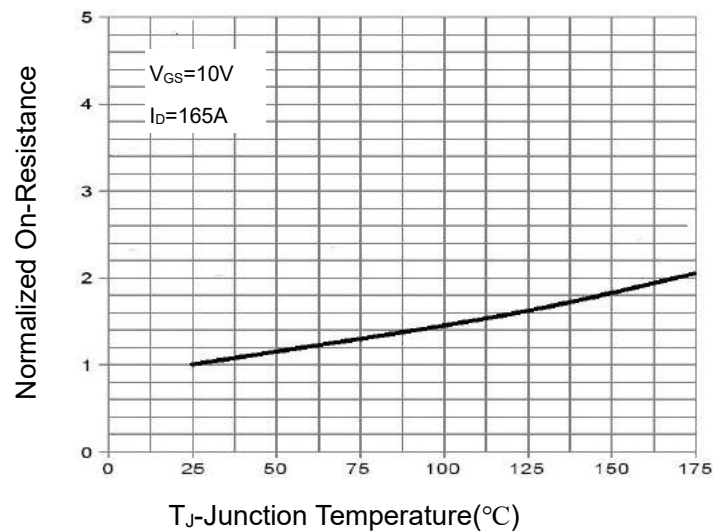


Figure 3 Rdson-Junction Temperature

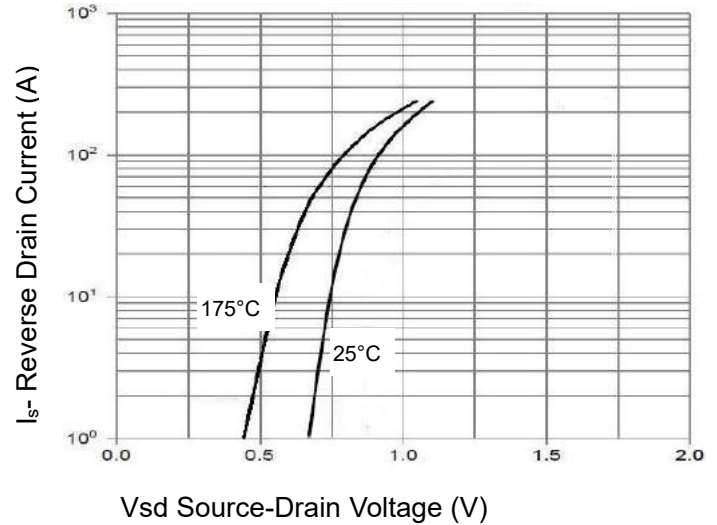
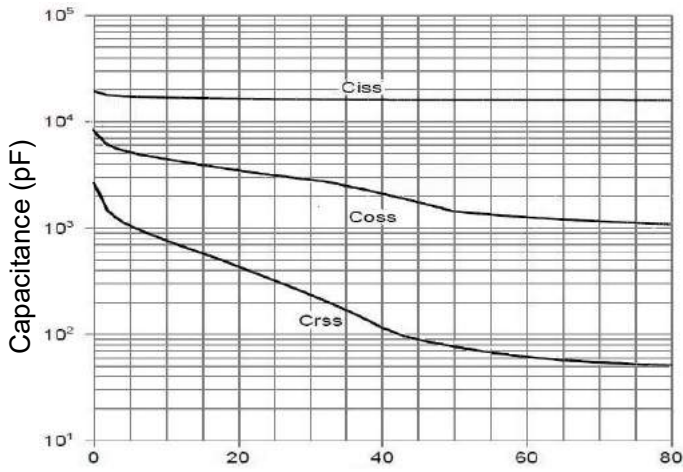
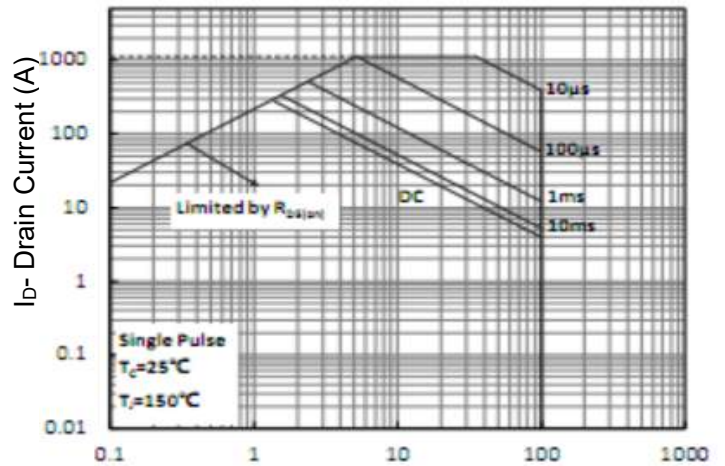


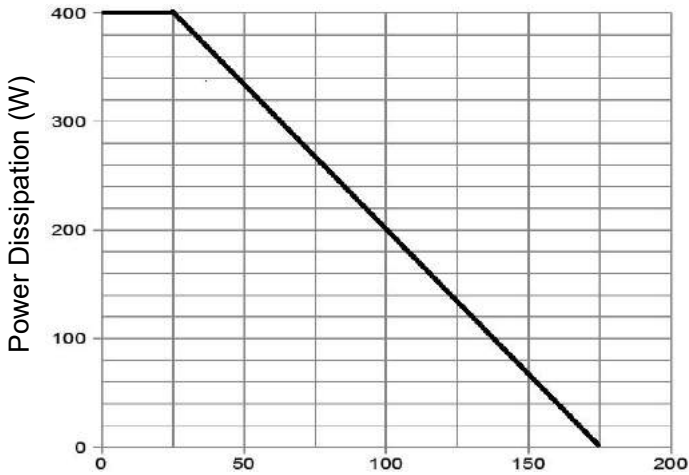
Figure 6 Source- Drain Diode Forward



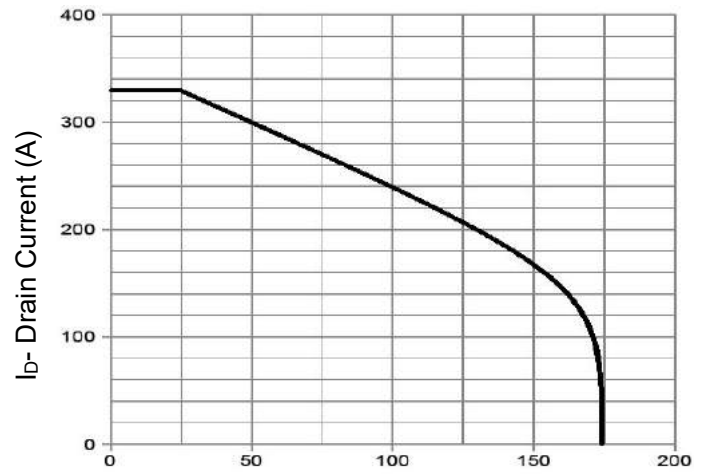
Vds Drain-Source Voltage (V)
Figure 7 Capacitance vs Vds



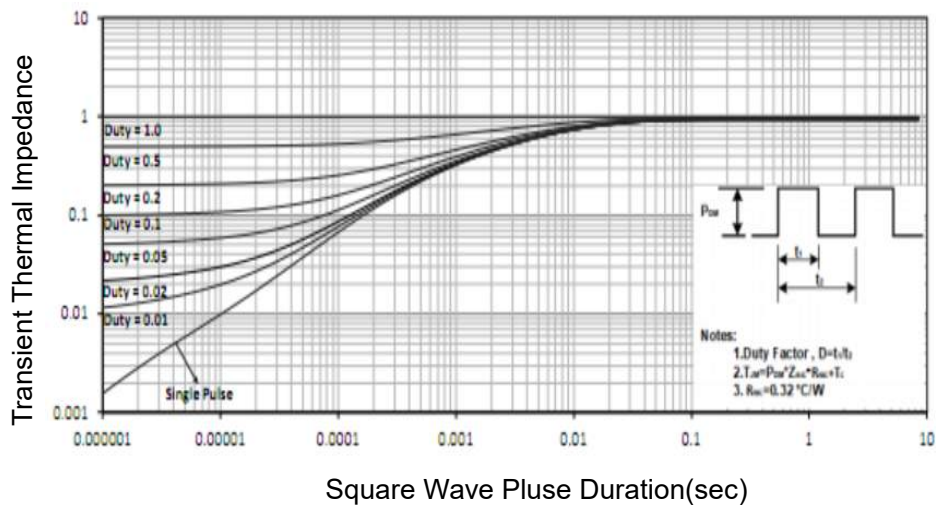
Vds Drain-Source Voltage (V)
Figure 9 Safe Operation Area (Note 3)



T_C-Case Temperature(°C)
Figure 8 Power De-rating



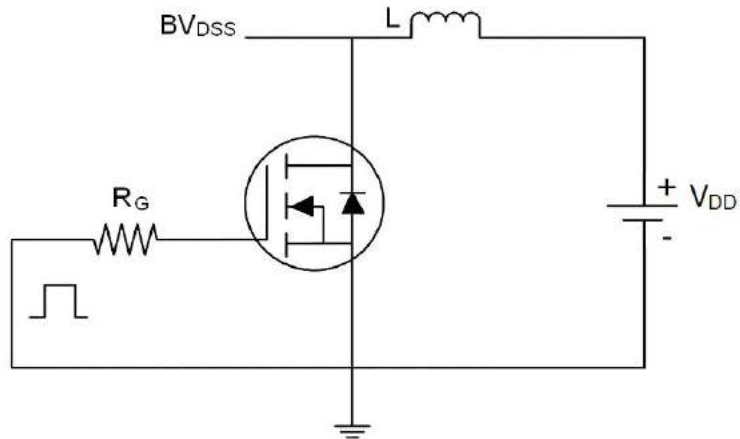
T_C-Case Temperature (°C)
Figure 10 Current De-rating



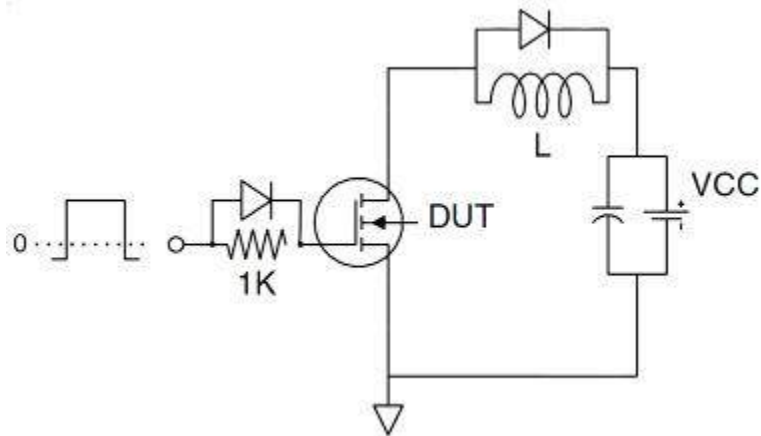
Square Wave Pluse Duration(sec)
Figure 11 Normalized Maximum Transient Thermal Impedance

Test Circuit

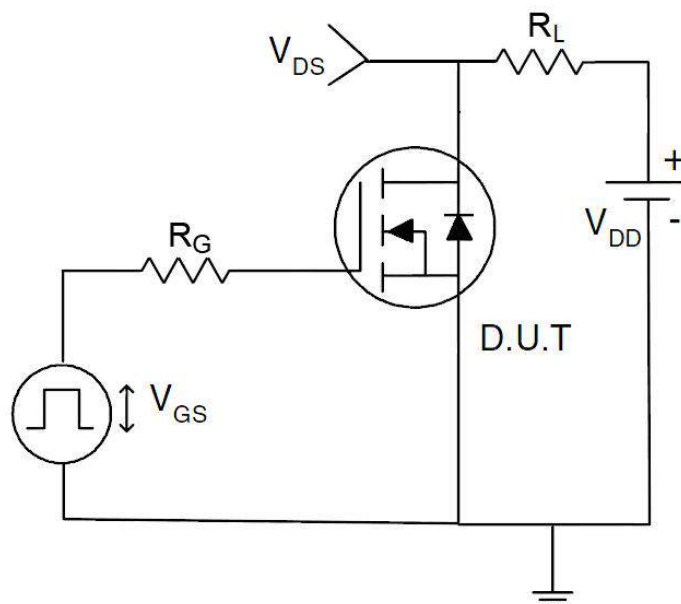
1) E_{AS} test Circuit



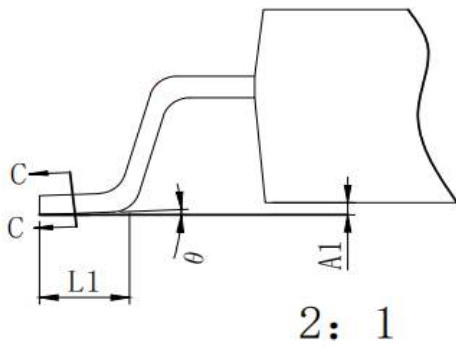
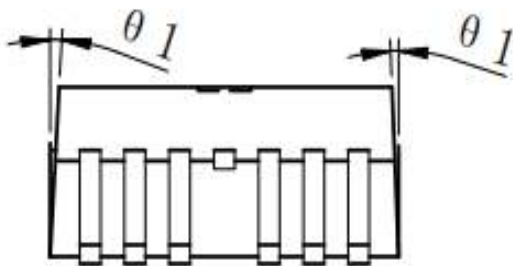
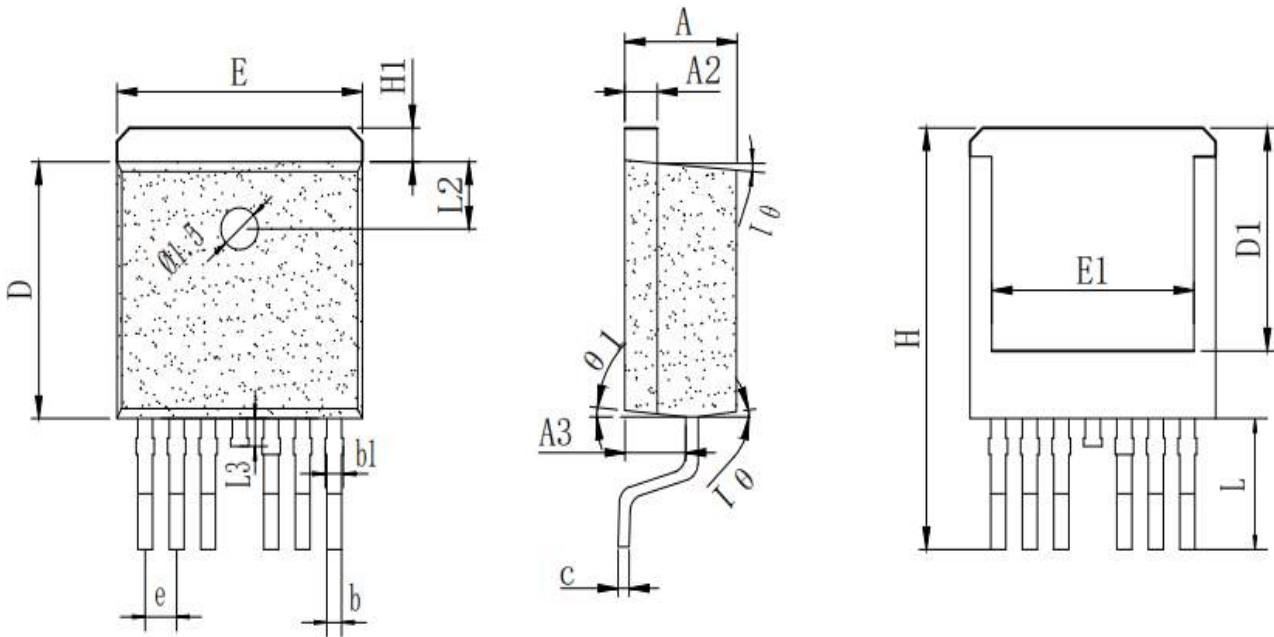
2) Gate charge test Circuit



3) Switch Time Test Circuit



TO-263-6L Package Information



SYMBOL	mm		
	MIN	NOM	MAX
*A	4.30	4.40	4.50
*A1	0.00	0.10	0.20
*A2	1.22	1.27	1.32
*A3	2.30	2.40	2.50
*b	0.50	0.60	0.70
*b1	0.59	0.61	0.63
*c	0.45	0.50	0.55
*D	9.10	9.20	9.30
D1	7.80	8.00	8.20
*E	9.80	10.00	10.20
E1	8.40	8.60	8.80
*e	1.25	1.27	1.29
*H	14.85	15.00	15.15
H1	0.90	1.00	1.10
*L	4.50	4.70	4.90
L1	2.40	2.70	3.00
L2	2.20	2.30	2.40
L3	0.85	1.00	1.15
* θ	0°	2.5°	8°
$\theta 1$	5°	7°	9°

Customer Service

Sales and Service:

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