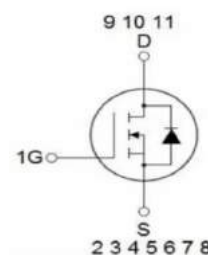
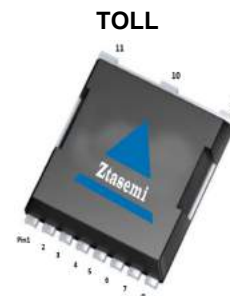


Features

- N-Channel
- Fast Switching
- Low Gate Charge and $R_{DS(ON)}$
- Low Reverse transfer capacitances
- 100% EAS Tested

V_{DS}	100	V
$R_{DS(on),TYP}@ V_{GS}=10V$	1.5	m Ω
I_D	310	A



Part ID	Package Type	Marking	Packing
ZTG015N10L	TOLL	ZTG015N10L	2000pcs/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	150	$^\circ\text{C}$	
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
I_{DM}	Drain Current-Continuous@ Current-Pulsed (Note 1)	$T_C = 25^\circ\text{C}$ 1280	A	
Mounted on Large Heat Sink				
I_D	Drain Current-Continuous	$T_C = 25^\circ\text{C}$	310	A
		$T_C = 100^\circ\text{C}$	196	A
P_D	Maximum Power Dissipation	360	W	
$R_{\theta JC}$	Thermal Resistance-Junction to Case	0.35	$^\circ\text{C}/\text{W}$	
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	43	$^\circ\text{C}/\text{W}$	
Drain-Source Avalanche Ratings				
EAS	Avalanche Energy, Single Pulsed (Note 2)	1226	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
IDSS	Zero Gate Voltage Drain Current	V _{DS} =100V, V _{GS} =0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	2.8	3.3	3.8	V
RDS(on)	Drain-Source On-State Resistance	V _{GS} =10V, I _D =50A	--	1.5	2.0	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated) (Note 2)						
Ciss	Input Capacitance	V _{DS} =50V, V _{GS} =0V, f=1MHz	--	8142	--	pF
Coss	Output Capacitance		--	3025	--	pF
Crss	Reverse Transfer Capacitance		--	55	--	pF
Rg	Gate Resistance f=1MHz	f=1MHz	--	1.0	--	Ω
Qg	Total Gate Charge	V _{DS} =50V, I _D =20A, V _{GS} =10V	--	120	--	nC
Qgs	Gate-Source Charge		--	36	--	nC
Qgd	Gate-Drain Charge		--	26	--	nC
Switching Characteristics (Note 2)						
Td(on)	Turn-on Delay Time	V _{DS} =50V, I _D =20A, R _G =5Ω, V _{GS} =10V	--	24	--	ns
Tr	Turn-on Rise Time		--	31	--	ns
Td(off)	Turn-Off Delay Time		--	92	--	ns
Tf	Turn-Off Fall Time		--	73	--	ns
Source- Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
ISD	Source-Drain Current (Body Diode)		--	--	310	A
VSD	Forward on voltage	I _S =80A, V _{GS} =0V	--	--	1.2	V
Trr	Reverse Recovery Time	I _S =20A, V _{DD} =50V,	--	96	--	ns
Qrr	Reverse Recovery Charge	di/dt=100A/μs	--	300	--	nC

Notes:

1. Repetitive rating; pulse width limited by maximum junction temperature
2. V_{DD}=50V, L=0.5mH, R_g=25Ω, Starting T_J=25 °C

Typical Electrical and Thermal Characteristics

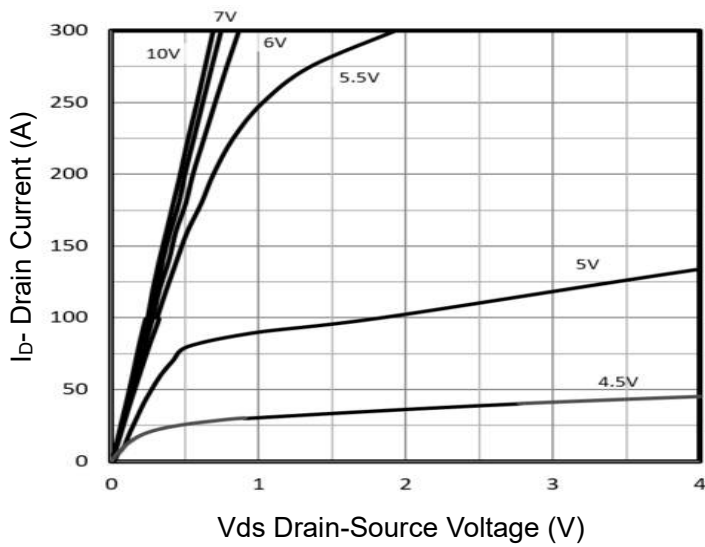


Figure 1 Output Characteristics

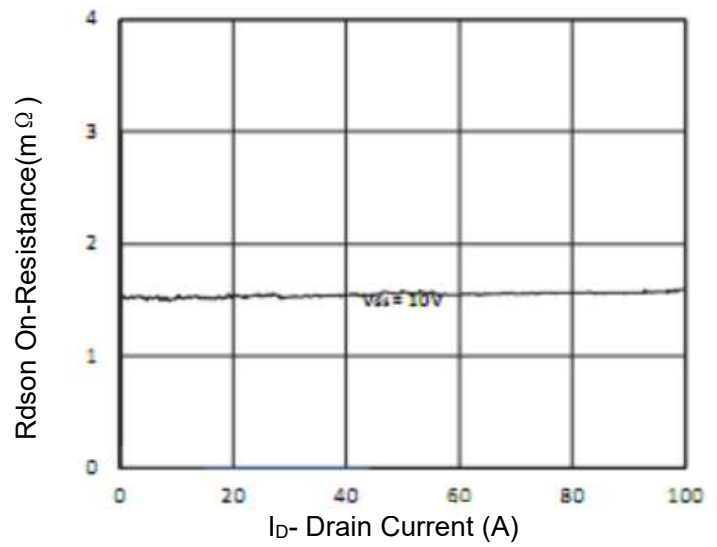


Figure 4 Rds(on) - Drain Current

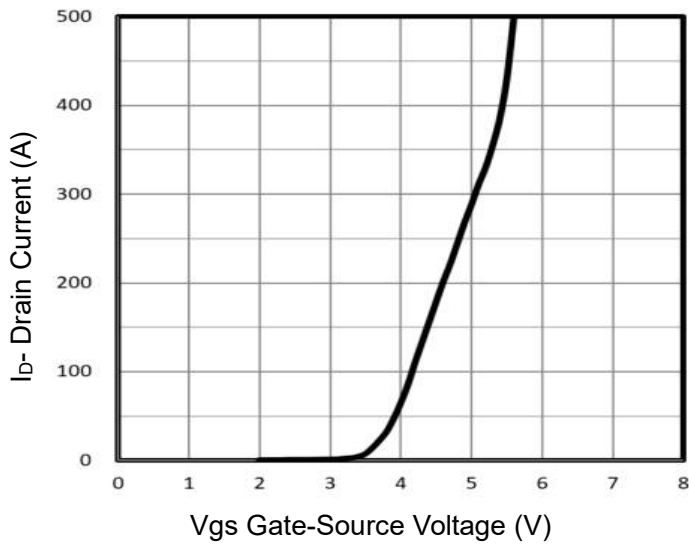


Figure 2 Transfer Characteristics

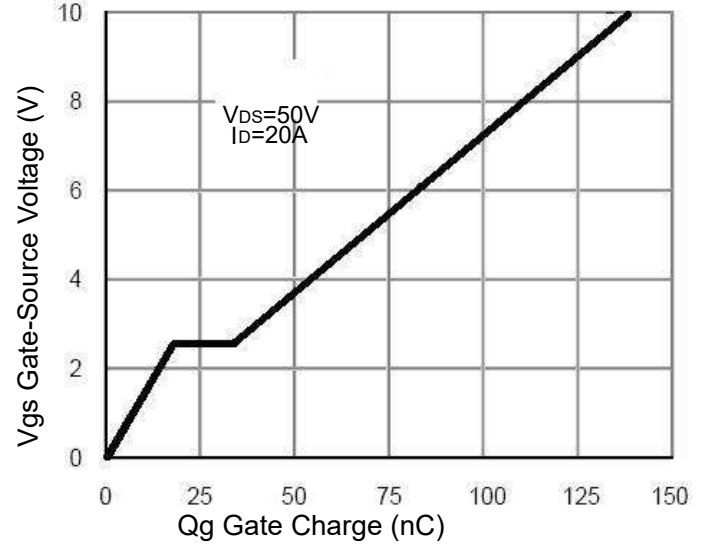


Figure 5 Gate Charge

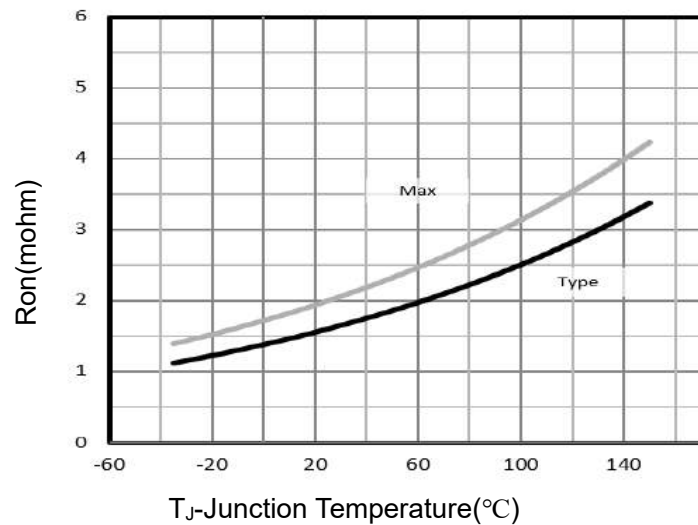


Figure 3 Drain-source on-state resistance

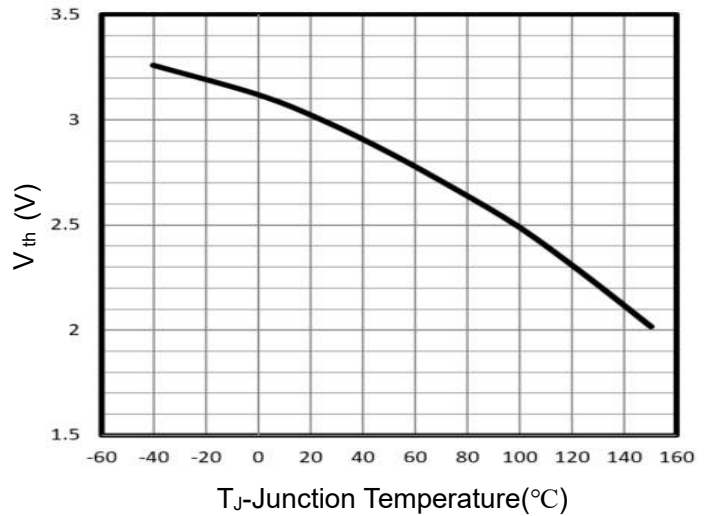


Figure 6 Gate Threshold Voltage

Typical Electrical and Thermal Characteristics

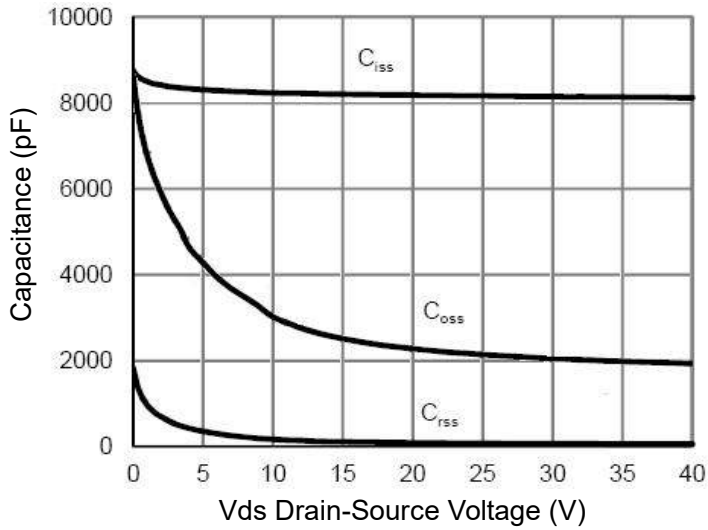


Figure 7 Capacitance vs Vds

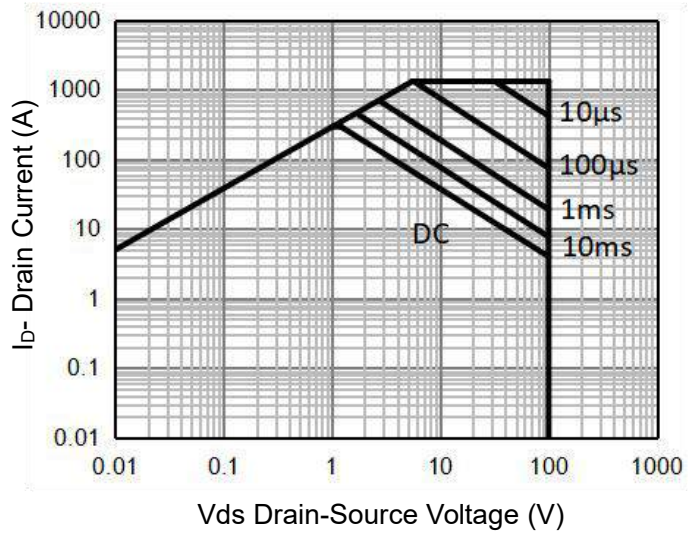


Figure 9 Safe Operation Area (Note 3)

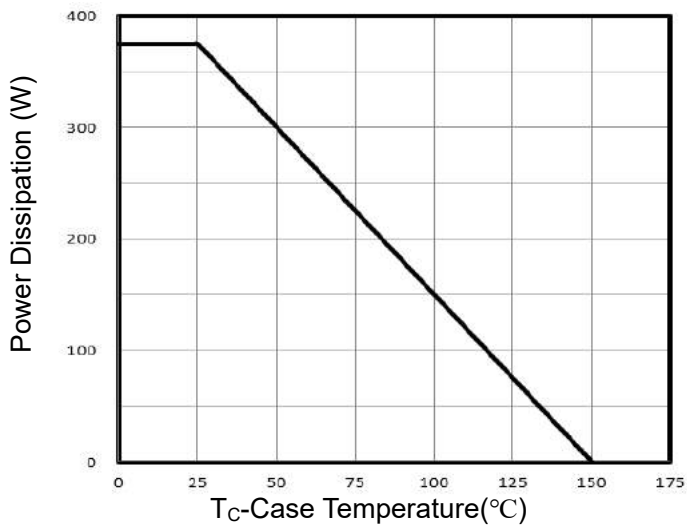


Figure 8 Power De-rating

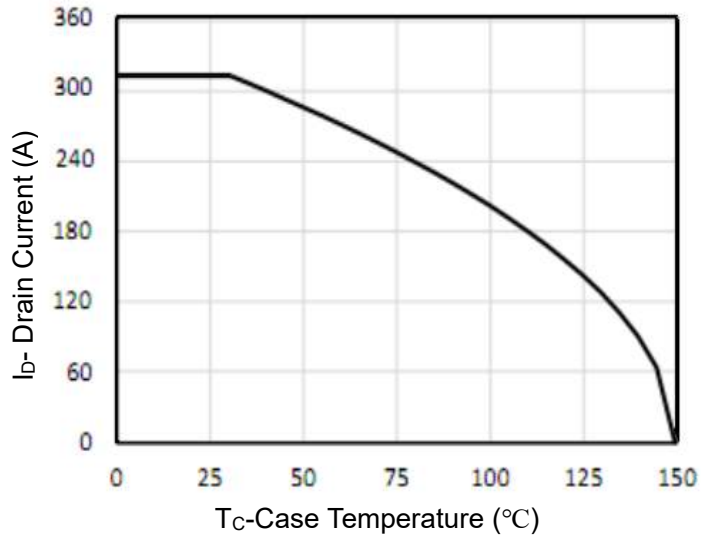


Figure 10 Current De-rating

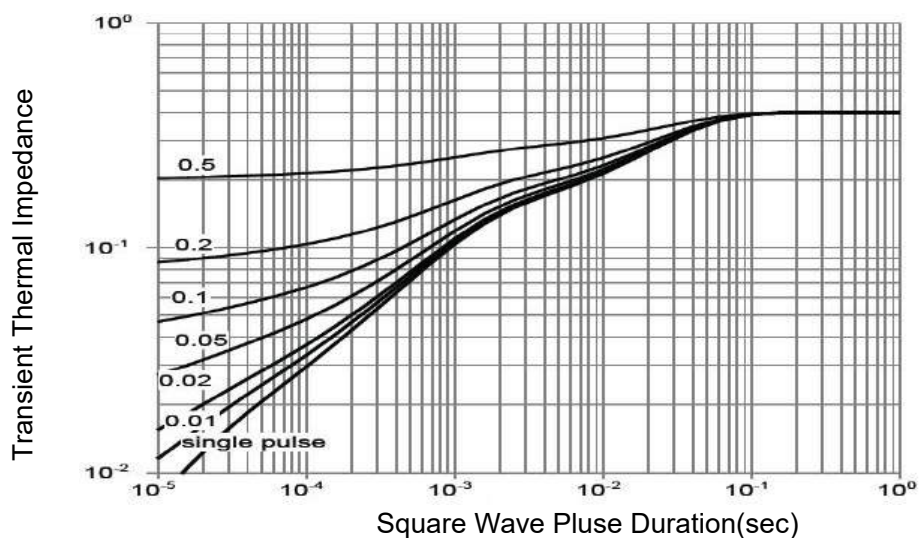
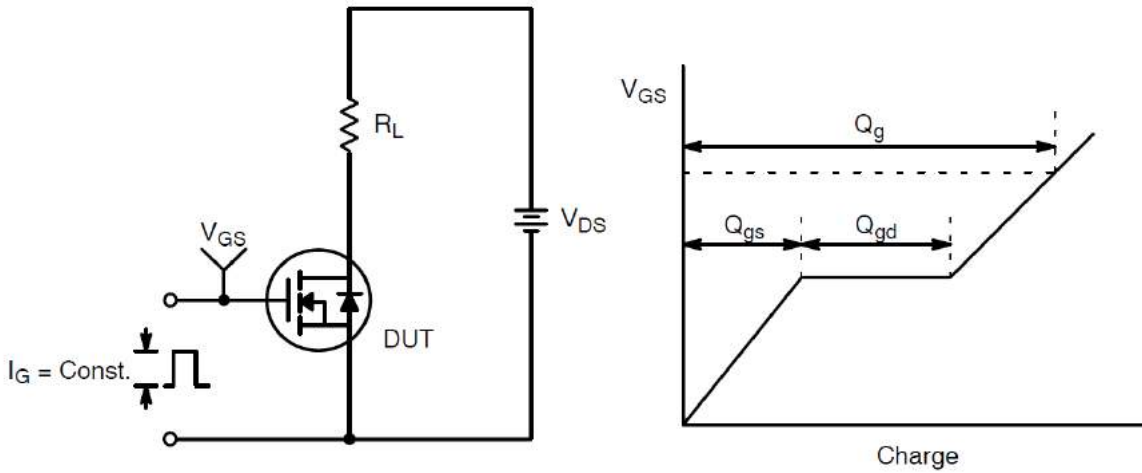
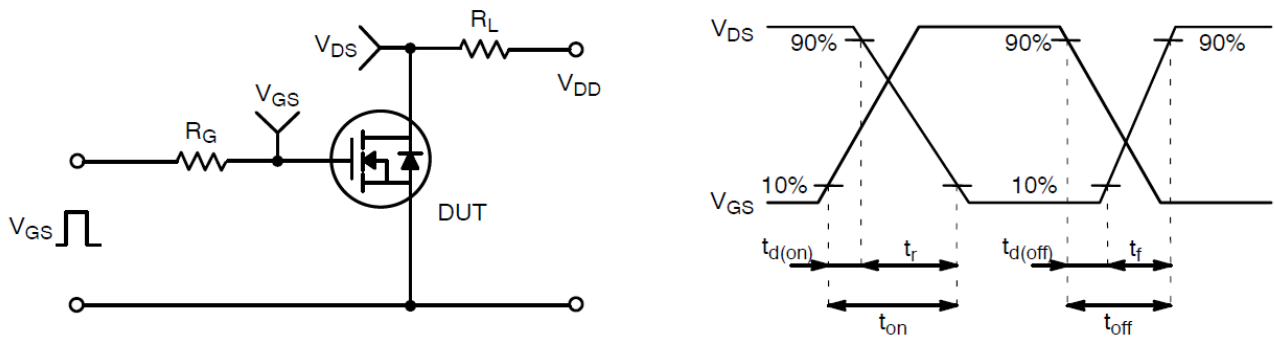


Figure 11 Normalized Maximum Transient Thermal Impedance

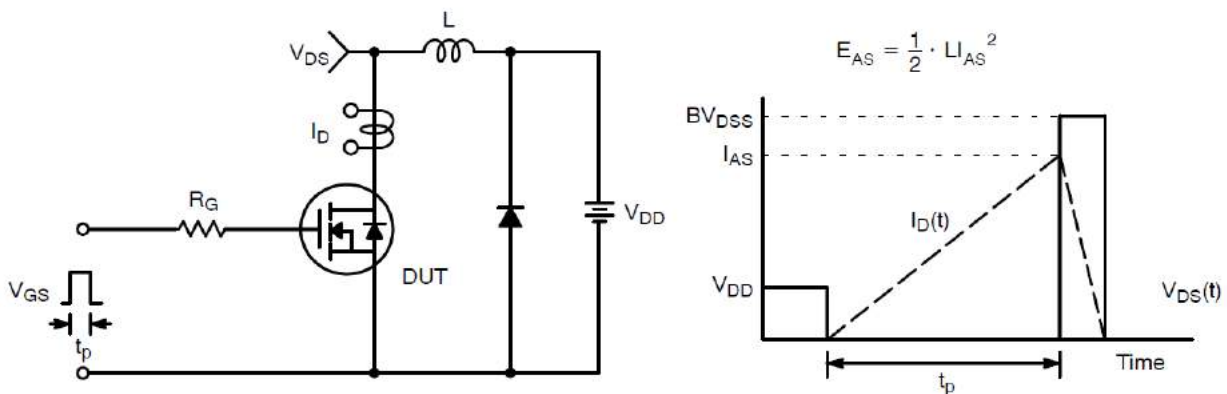
Test Circuit and Waveform:



Gate Charge Test Circuit & Waveform

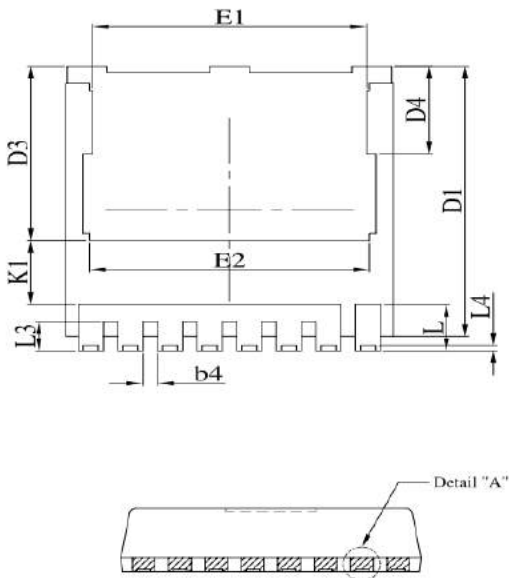
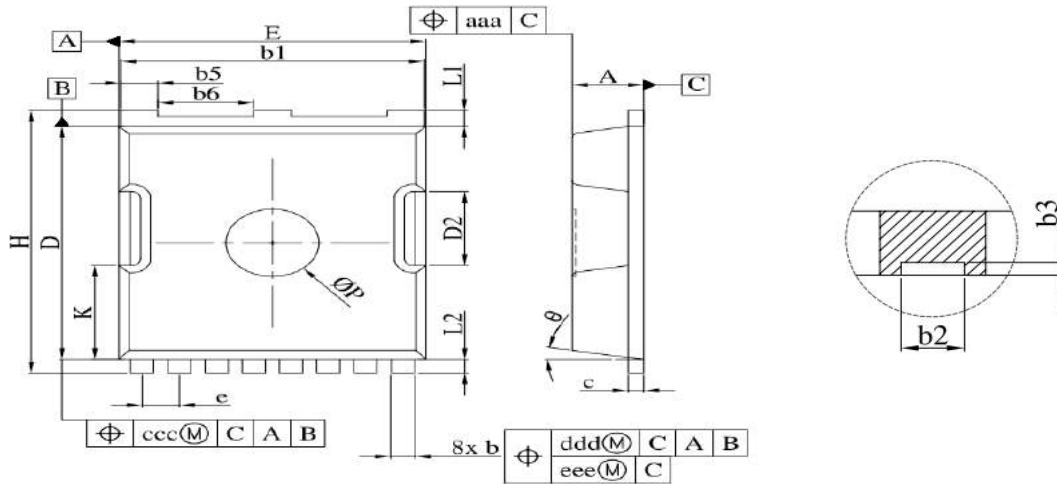


Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms

TOLL-8L Package Information



SYMBOL	COMMON		
	MILLIMETER		
	MIN.	NOMINAL	MAX.
A	2.20	2.30	2.40
b	0.70	0.80	0.90
b1	9.70	9.80	9.90
b2	0.36	0.45	0.55
b3	0.05	0.100	0.35
b4	0.30	0.40	0.50
b5	1.10	1.20	1.30
b6	3.00	3.10	3.20
c	0.40	0.50	0.60
D	10.28	10.38	10.55
D1	10.98	11.08	11.18
D2	3.20	3.30	3.40
D3	7.00	7.15	7.30
D4	3.44	3.59	3.74
e	1.10	1.20	1.30
E	9.80	9.90	10.00
E1	8.20	8.30	8.40
E2	8.35	8.50	8.65
H	11.50	11.68	11.85
K	4.08	4.18	4.28
K1	2.45	---	---
L	1.60	1.90	2.10
L1	0.50	0.70	0.90
L2	0.50	0.60	0.70
L3	1.00	1.20	1.30
L4	0.13	0.23	0.33
P	2.85	3.00	3.15
θ	10° REF		
aaa	0.20		
ccc	0.20		
ddd	0.25		
eee	0.20		

Customer Service

Sales and Service:

zj@ztasemi.com