

Features

- $R_{DS(on)_{MAX}}=6m\Omega@V_{gs}=10V$
- $R_{DS(on)_{MAX}}=10m\Omega@V_{gs}=4.5V$
- Low gate Charge (typical 42.4nC)
- Advanced High Cell Density Trench Technology
- 100% EAS Guaranteed

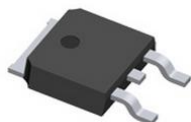
Applications

- Motor Driver

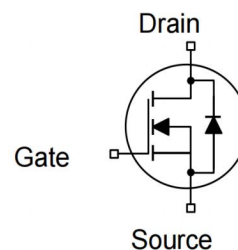
Product Summary

V_{DS}	30 V
$R_{DS(on)_{MAX}}@V_{gs}=10V$	6 m Ω
$R_{DS(on)_{MAX}}@V_{gs}=4.5V$	10 m Ω
I_D	80 A

100% DVDS Tested
100% Avalanche Tested



TO-252-3L



Package Marking and Ordering Information

Part #	Marking	Package	Packing	Reel Size	Tape Width	Qty
CAM3080TDB	CAM3080TDB	TO-252-3L	Tape&Reel	N/A	N/A	2500 pcs

Absolute Maximum Ratings $T_C = 25^{\circ}C$, unless otherwise noted				
Parameter		Symbol	Value	Unit
Drain-Source Voltage($V_{GS}=0V$)		V_{DS}	30	V
Continuous Drain Current ¹⁾	$T_C = 25^{\circ}C$	I_D	80	A
	$T_C = 100^{\circ}C$		56	
Pulsed Drain Current ²⁾		$I_{D,pulse}$	320	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulse Avalanche Energy ³⁾		E_{AS}	108	mJ
Power Dissipation		P_D	39	W
Continuous Diode Forward Current		I_S	80	A
Diode Pulsed Current ²⁾		$I_{S,pulse}$	320	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55~+150	$^{\circ}C$
Thermal Resistance, Junction-to-Case		R_{thJC}	1.8	$^{\circ}C/W$
Thermal Resistance, Junction-to-Ambient		R_{thJA}	65	

Electrical Characteristics T _J = 25°C, unless otherwise noted						
Parameter	Symbol	Test Conditions	Value			Unit
			Min.	Typ.	Max.	
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250uA	30	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30V V _{GS} = 0V, T _J = 25°C	--	--	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±20V	--	--	±100	nA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	1	--	2.5	V
Drain-Source On-State-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 40A	--	4	6	mΩ
		V _{GS} = 4.5V, I _D = 40A	--	6.8	10	mΩ
Gate Resistance	R _G	f = 1.0MHz	--	1.9	--	Ω
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	--	1728	--	pF
Output Capacitance	C _{oss}		--	268	--	
Reverse Transfer Capacitance	C _{rss}		--	182	--	
Total Gate Charge	Q _g	V _{GS} = 10V V _{DD} = 15V, I _D = 40A	--	42.4	--	nC
Gate-Source Charge	Q _{gs}		--	6.7	--	
Gate-Drain Charge	Q _{gd}		--	9.2	--	
Gate Plateau Voltage	V _{Plateau}		--	3.5	--	
Turn-on Delay Time	t _{d(on)}	V _{GS} = 10V, V _{DD} = 15V R _G = 3.3Ω, I _D = 40A	--	10	--	ns
Turn-on Rise Time	t _r		--	76	--	
Turn-off Delay Time	t _{d(off)}		--	35	--	
Turn-off Fall Time	t _f		--	10	--	
Drain-Source Body Diode Characteristics						
Body Diode Forward Voltage	V _{SD}	T _J = 25°C, V _{GS} = 0V I _S = 40A	--	--	1.2	V
Reverse Recovery Time	t _{rr}	I _F = 40A, diF/dt = 100A/us	--	19	--	ns
Reverse Recovery Charge	Q _{rr}		--	20	--	nC

Notes

- 1) Limited by maximum junction temperature.
- 2) Repetitive Rating: Pulse width limited by maximum junction temperature.
- 3) $L=0.5\text{mH}$, $R_G=25\Omega$, $V_{GS}=10V$, $V_{DD}=15V$, Start $T_J=25^\circ\text{C}$.

Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted

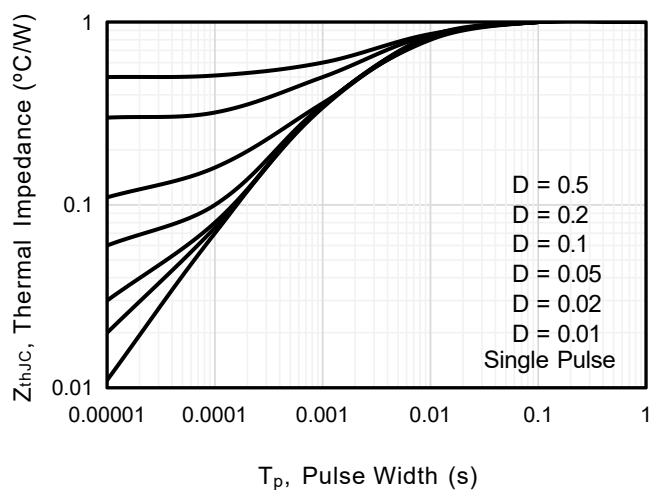


Figure 1. Transient Thermal Impedance

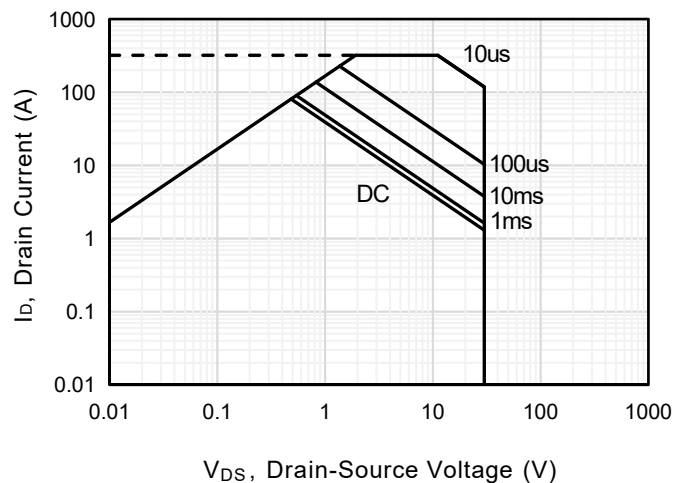


Figure 2 . Safe Operation Area

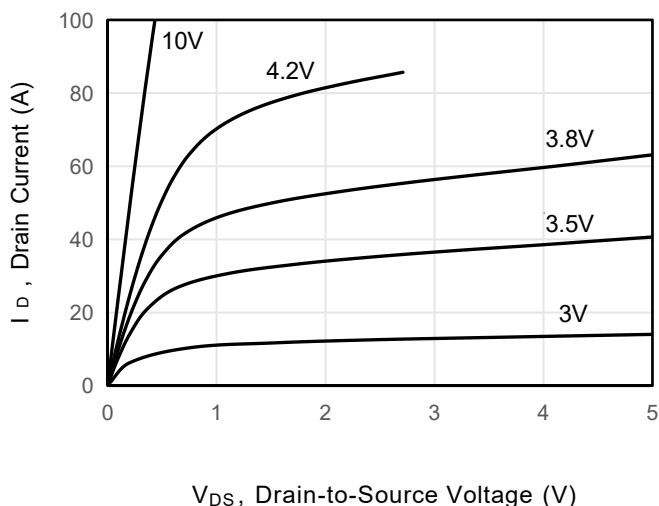


Figure 3 . Output Characteristics

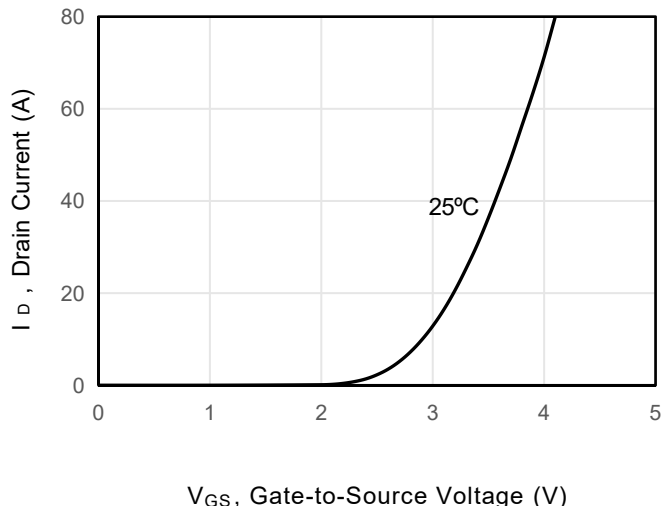


Figure 4 . Transfer Characteristics

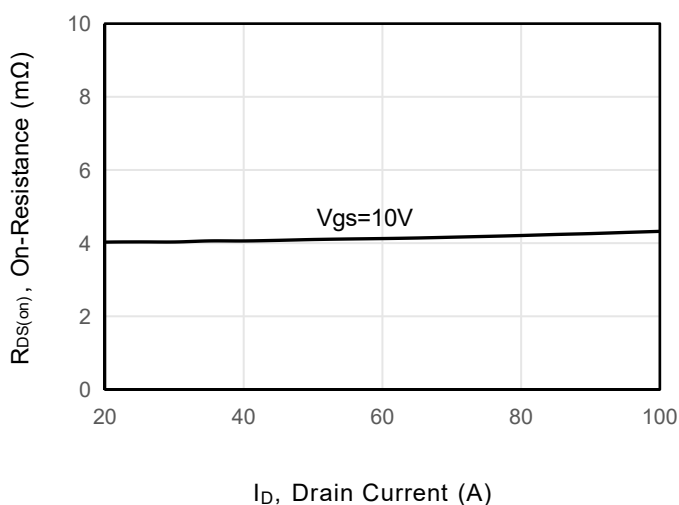


Figure 5 . On-Resistance vs Drain Current

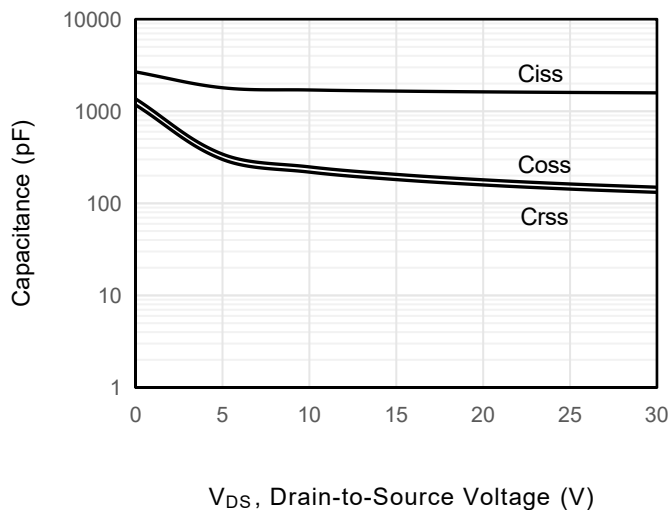


Figure 6 . Capacitance

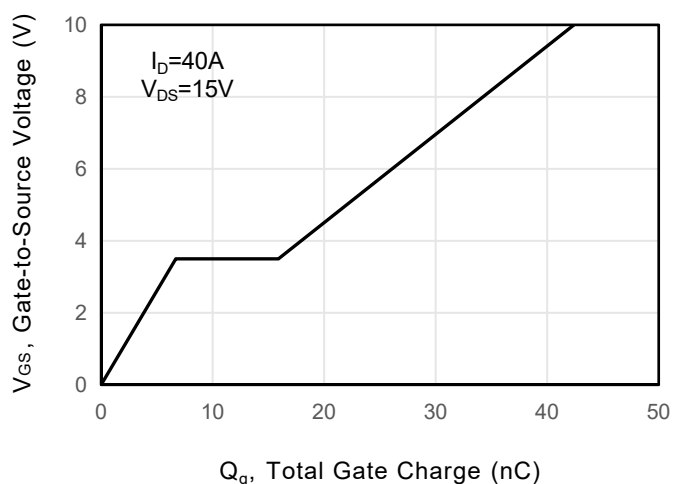


Figure 7 . Gate Charge

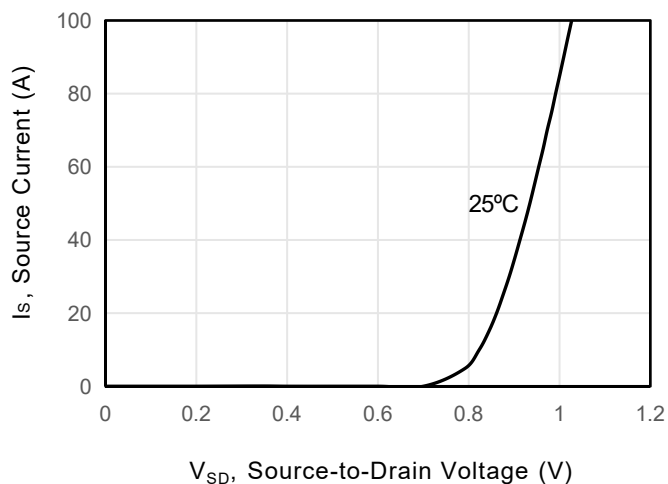


Figure 8 . Body Diode Forward Voltage

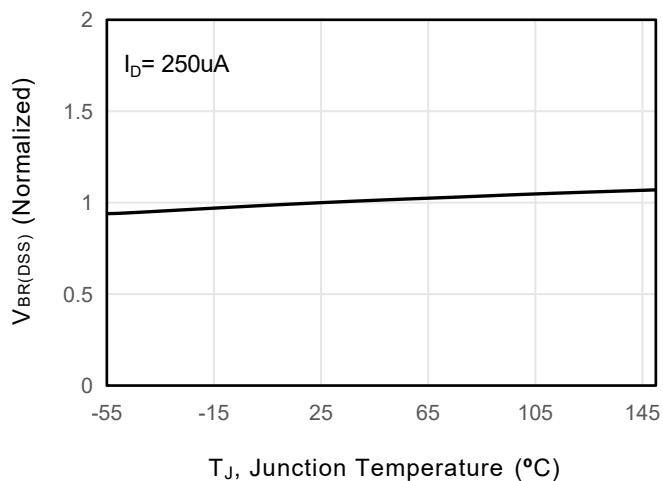


Figure 9. Breakdown Voltage vs Junction Temperature

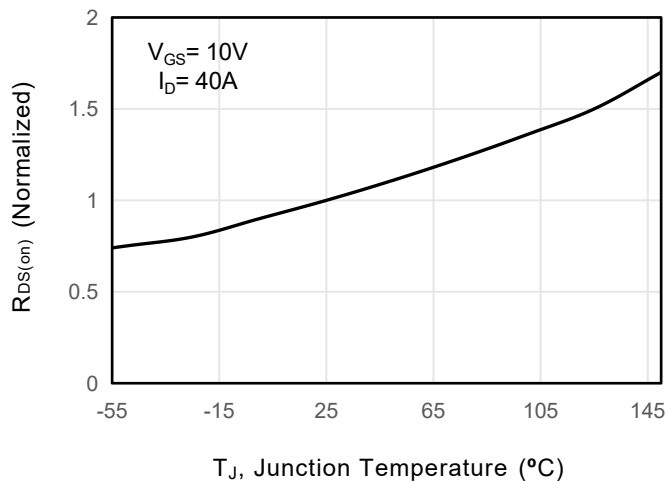


Figure 10. On-Resistance vs Temperature

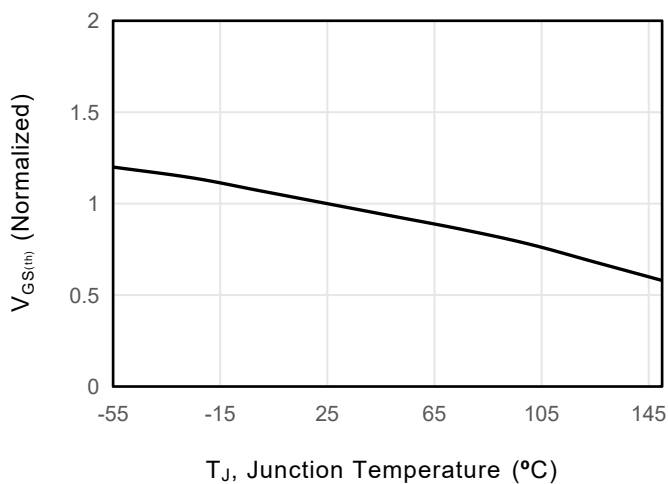

Figure 11. $V_{GS(th)}$ vs Junction Temperature

Figure A: Gate Charge Test Circuit and Waveform

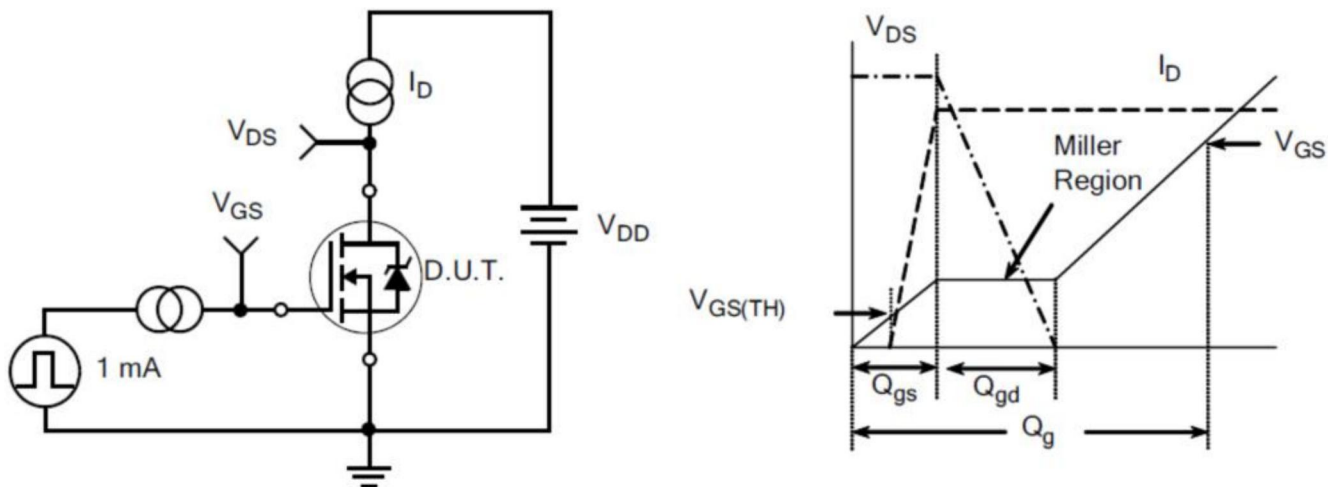


Figure B: Resistive Switching Test Circuit and Waveform

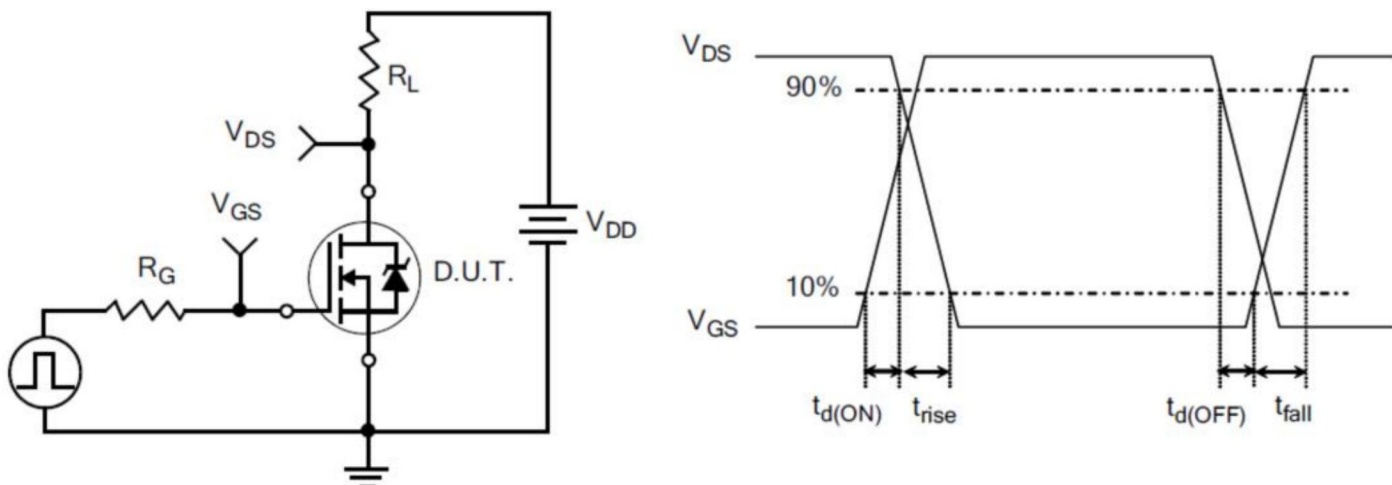
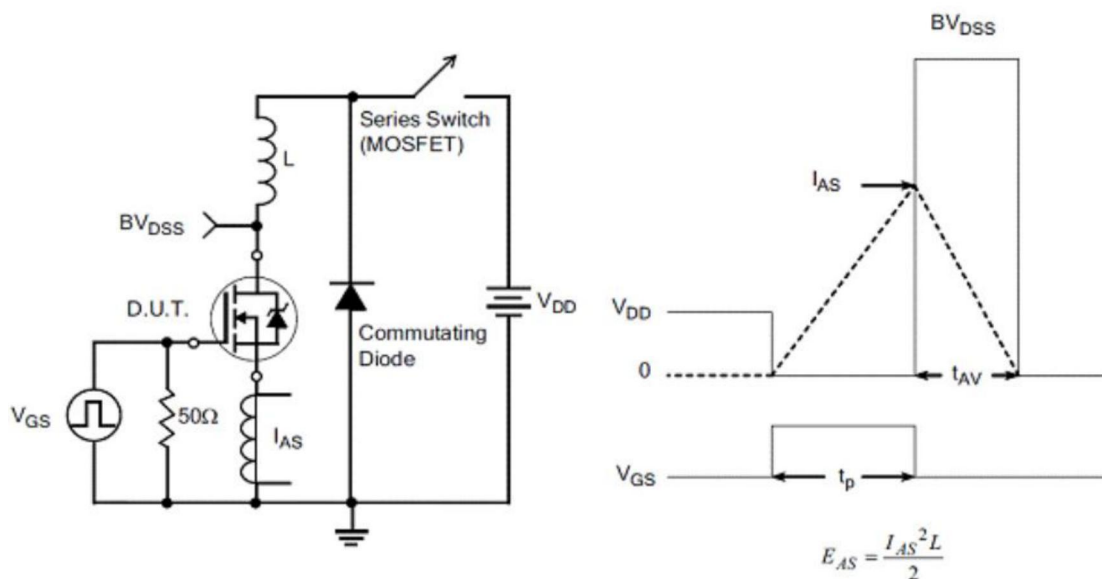
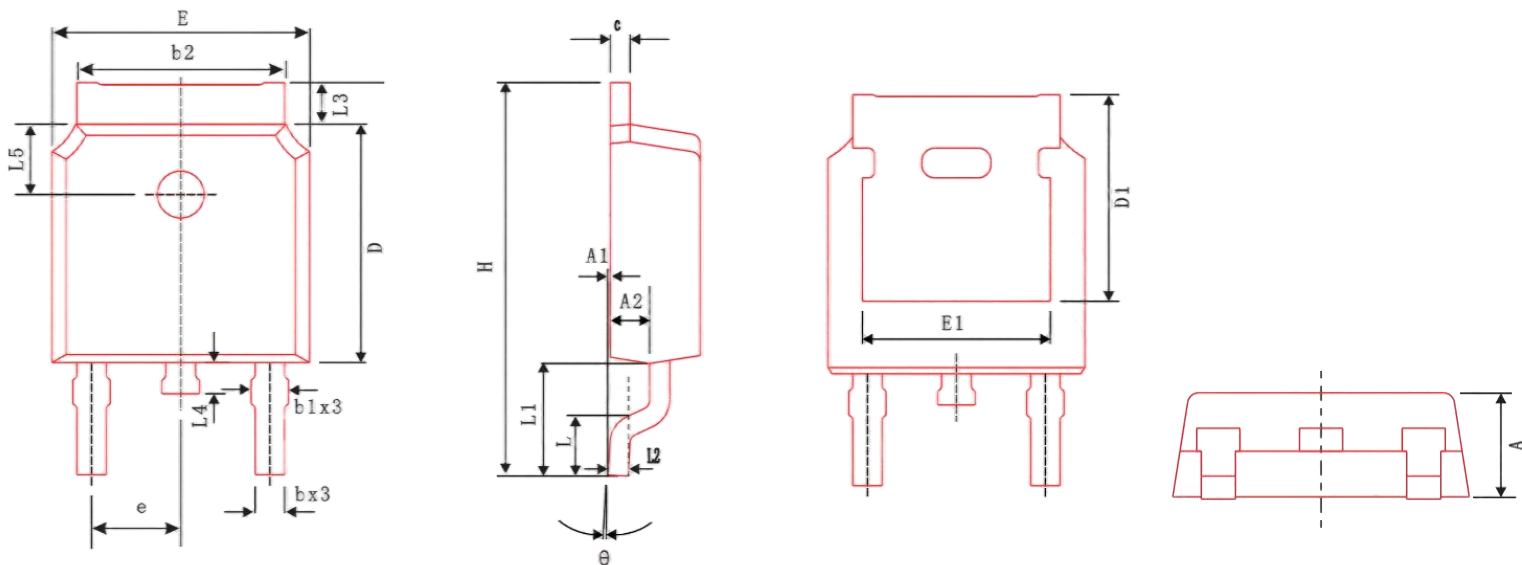


Figure C: Unclamped Inductive Switching Test Circuit and Waveform



Package Outline: TO-252-3L



SYMBOL	MIN	NOM	MAX
A	2.20	2.30	2.40
A1	0.00	0.05	0.12
A2	0.91	1.01	1.11
b	0.68	0.78	0.88
b1		-	1.00
b2	5.13	5.33	5.53
C	0.428	0.528	0.628
D	5.90	6.10	6.30
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.83REF		
H	9.64	10.04	10.44
L	1.25	1.50	1.75
L1	2.88REF		
L2	0.51BSC		
L3	0.86	1.06	1.26
L4	0.60	0.80	1.00
L5	1.65	1.80	1.95
θ	0°	-	8°
e	2.286BSC		