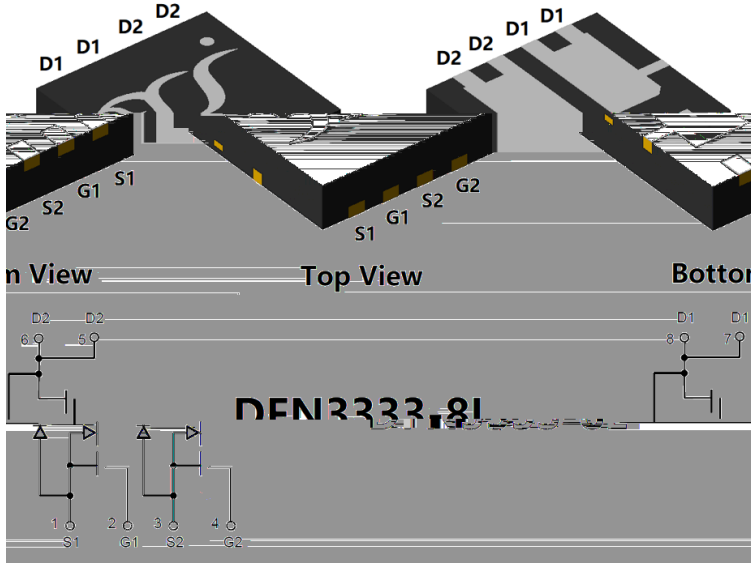


N-Channel Enhancement Mode Field Effect Transistor



Product Summary

P_{DS}	30V
I_G	30A
$L_{DS(ON)}$ (at $V_{GS}= 10V$)	13mohm
$L_{DS(ON)}$ (at $V_{GS}= 4.5V$)	16mohm
100% EAS Tested	

General Description

N h b Ji FP GI M N bhi f a
 Excellent package for heat dissipation
 High density cell design for low $R_{DS(ON)}$
 Gi c M h ccc F f-
 Epoxy Meets UL 94 V-0 Flammability Rating
 Halogen Free

Applications

High current load applications
 Load switch
 Hard switched and high frequency circuits
 Uninterruptible power supply

Absolute Maximum Ratings ($T_A=25$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	30	V
Gate-source Voltage		V_{GS}	20	V
Drain Current	$T_A=25$	I_D	9.7	A
	$T_A=100$		6.1	
	$T_C=25$		30	
	$T_C=100$		21	
Pulsed Drain Current ^A		I_{DM}	115	A
Total Power Dissipation ^B	$T_A=25$	P_D	2	W
	$T_A=100$		0.8	
	$T_C=25$		21	
	$T_C=100$		10.5	
Single Pulse Avalanche Energy		E_{AS}	140	mJ
Thermal Resistance-Junction to Ambient ^C		R_{JA}	60	/ W
Thermal Resistance Junction-to-Case		R_{JC}	7.1	/ W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 +150	

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJQ3622A	F1	Q3622	5000	10000	100000	13 reel



YJQ3622A

Electrical Characteristics (T_J=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250 ;	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	T _J =25		1	;
			T _J =55		5	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = 20V, V _{DS} =0V			100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250 ;	1.0	1.5	2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D =20A		7.5	13	m
		V _{GS} = 4.5V, I _D =10A		11.5	16	
Diode Forward Voltage	V _{SD}	I _S =15A, V _{GS} =0V		0.85	1.2	V
Maximum Body-Diode Continuous Current	I _S				30	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHZ		1015		pF
Output Capacitance	C _{oss}			201		
Reverse Transfer Capacitance	C _{rss}			164		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =20V, I _D =20A		23.6		nC
Gate-Source Charge	Q _{gs}			3.9		
Gate-Drain Charge	Q _{gd}			7.0		
Reverse Recovery Charge	Q _{rr}	I _r =15A, di/dt=100A/us		0.2		
Reverse Recovery Time	t _{rr}			5		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =20V, I _D =2A, R _{GEN} =3		7		ns
Turn-on Rise Time	t _r			19		
Turn-off Delay Time	t _{D(off)}			24		
Turn-off fall Time	t _f			24		

A. Repetitive rating; pulse width limited by max. junction temperature.

B. P_q is based on max. junction temperature, using junction-case thermal resistance.

C. The value of R_q is measured with the device mounted on 1 in2 FR-4 board with 2oz. Copper, in the still air environment with T_A =25 .
The maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.



■ Typical Performance Characteristics

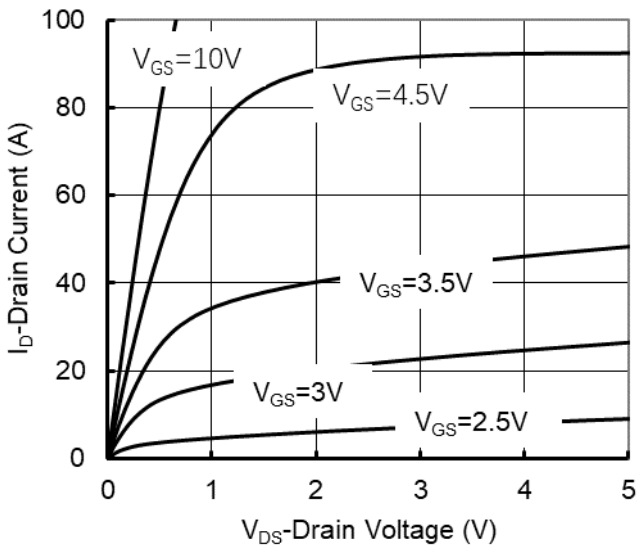


Figure1. Output Characteristics

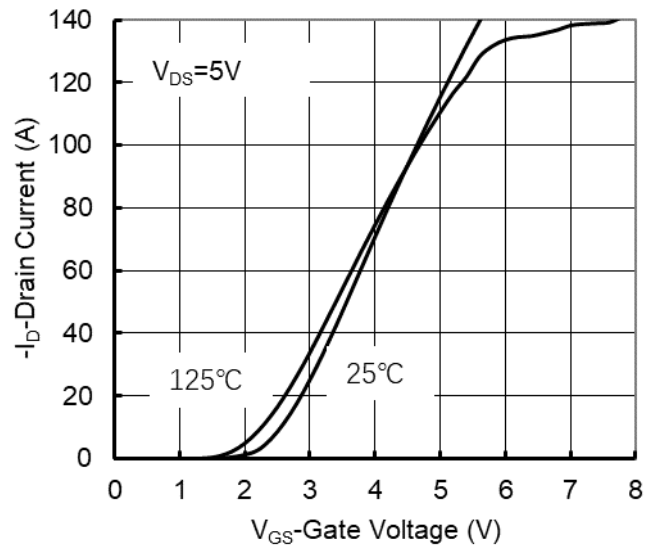


Figure2. Transfer Characteristics

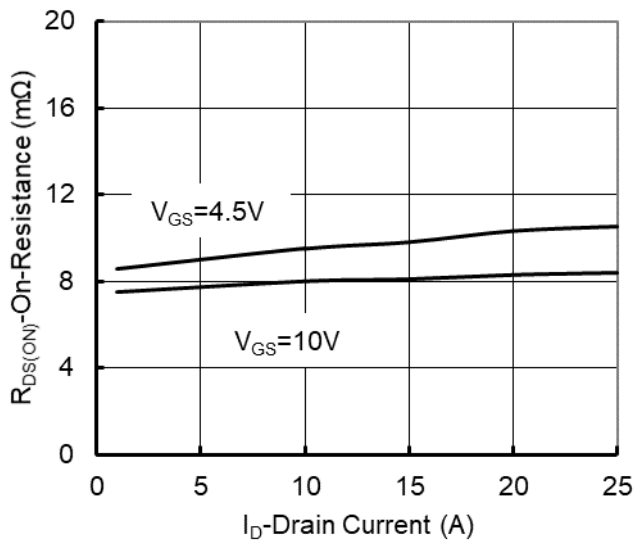


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

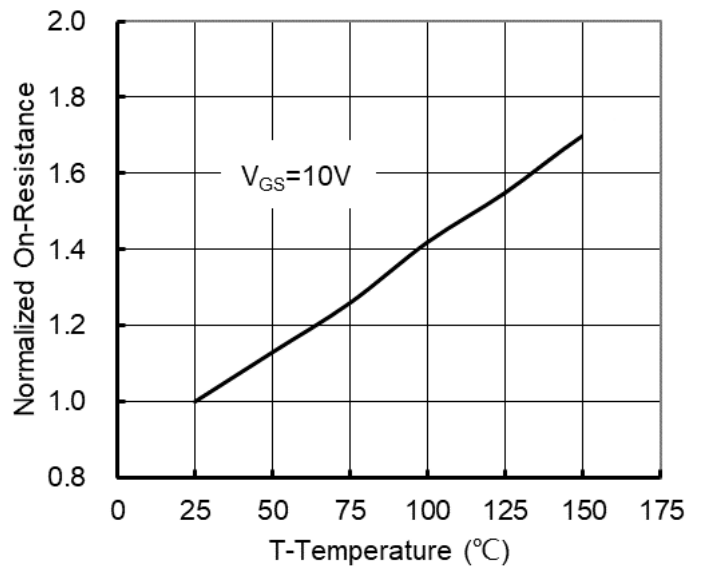


Figure 4: On-Resistance vs. Junction Temperature

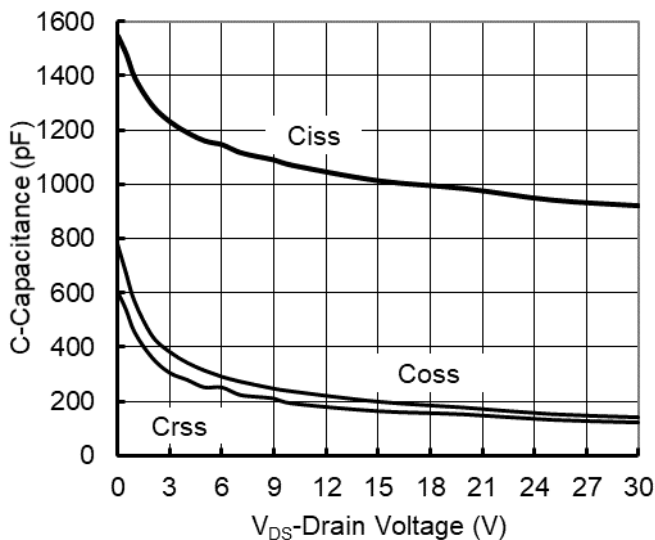


Figure5. Capacitance Characteristics

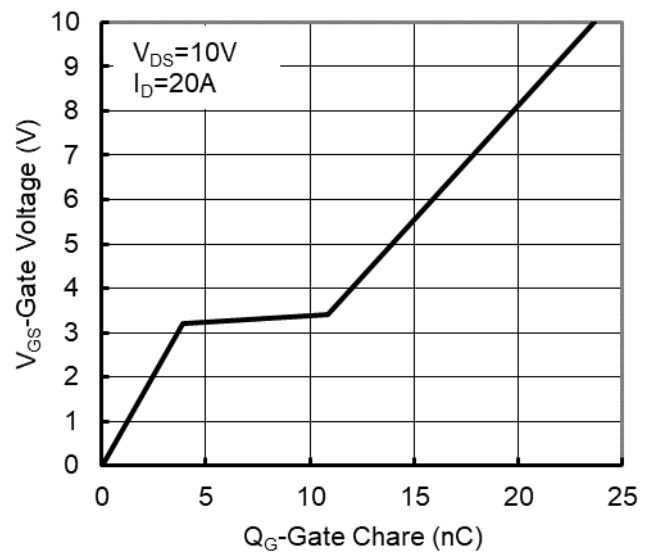


Figure6. Gate Charge



YJQ3622A

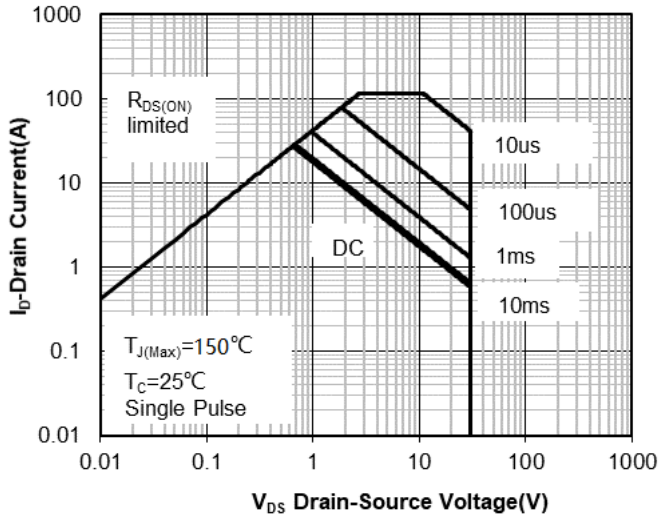


Figure7. Safe Operation Area

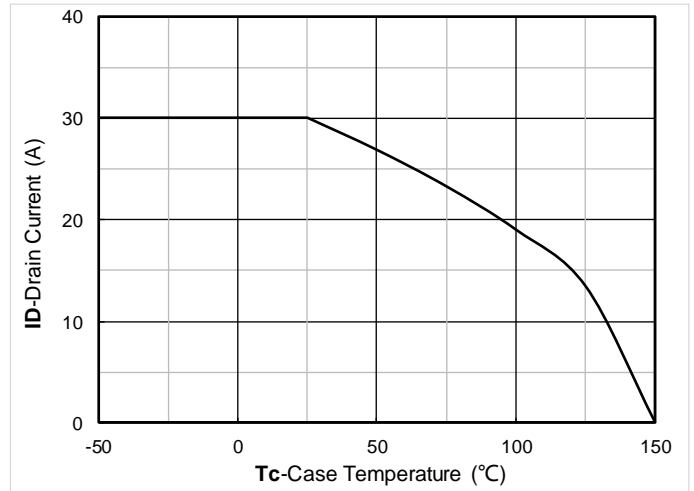


Figure8. Maximum Continuous Drain Current vs Case Temperature

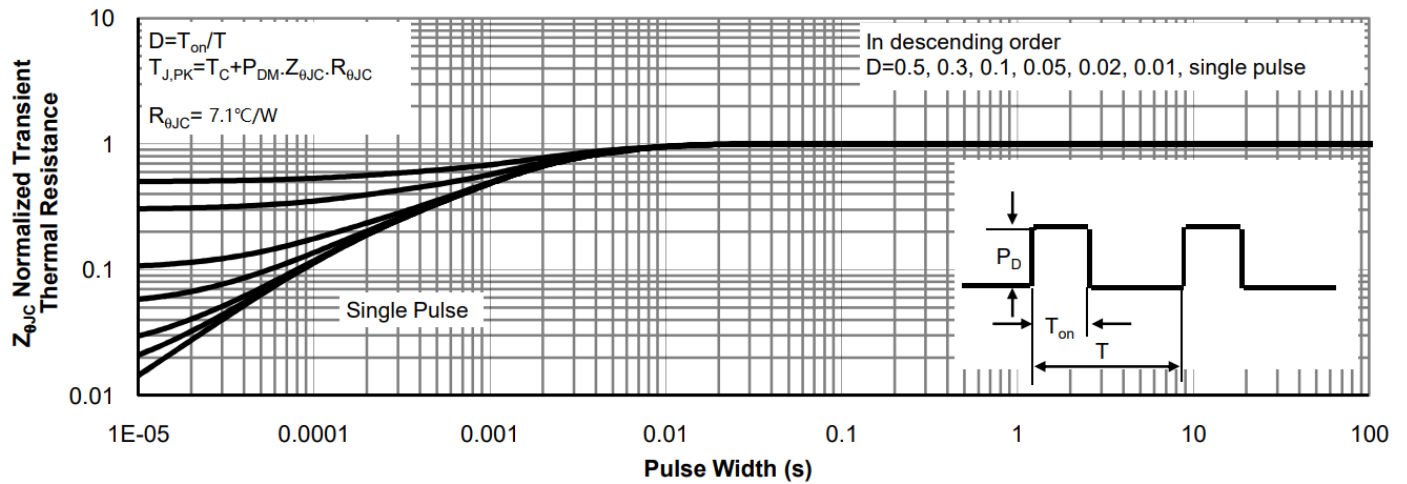
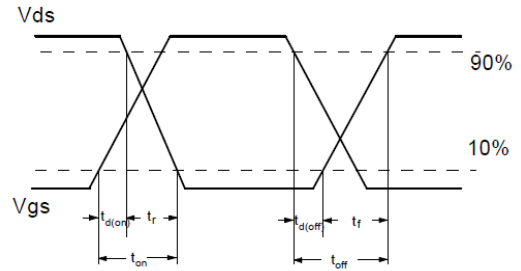
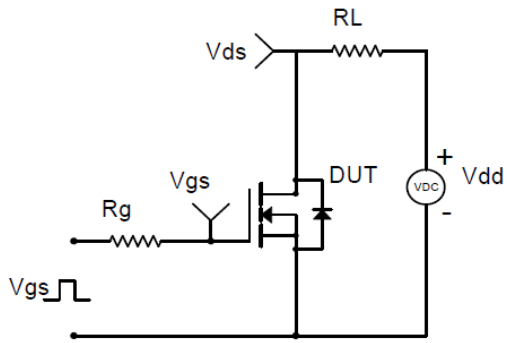
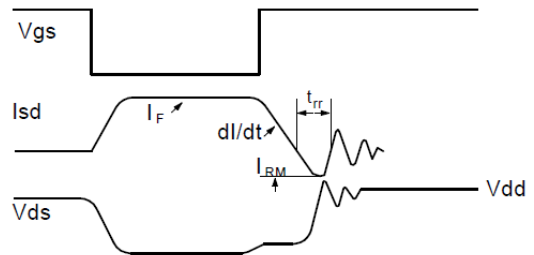
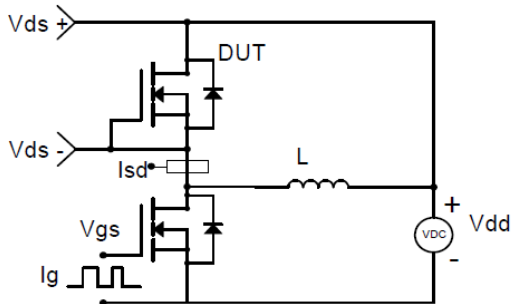


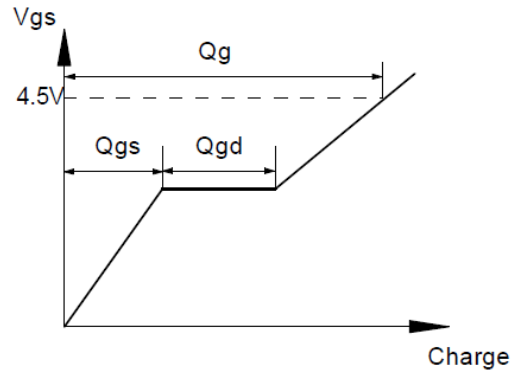
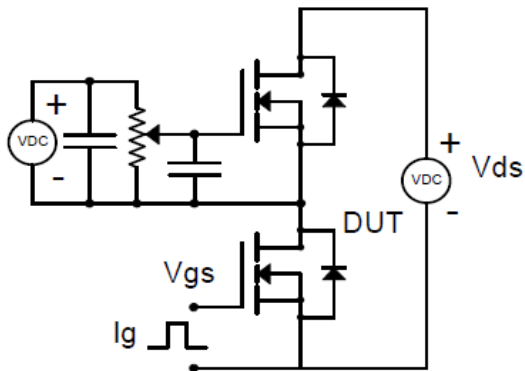
Figure9. Normalized Maximum Transient Thermal Impedance



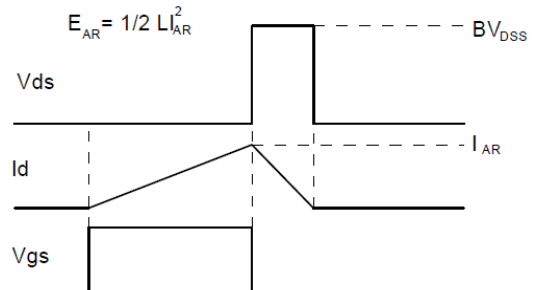
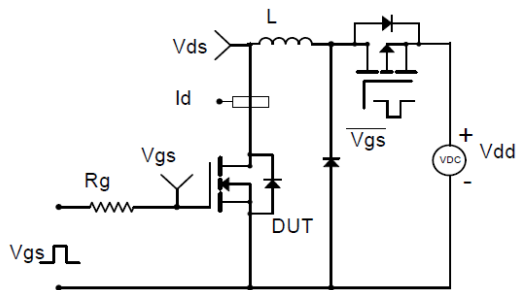
Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



Gate Charge Test Circuit & Waveform

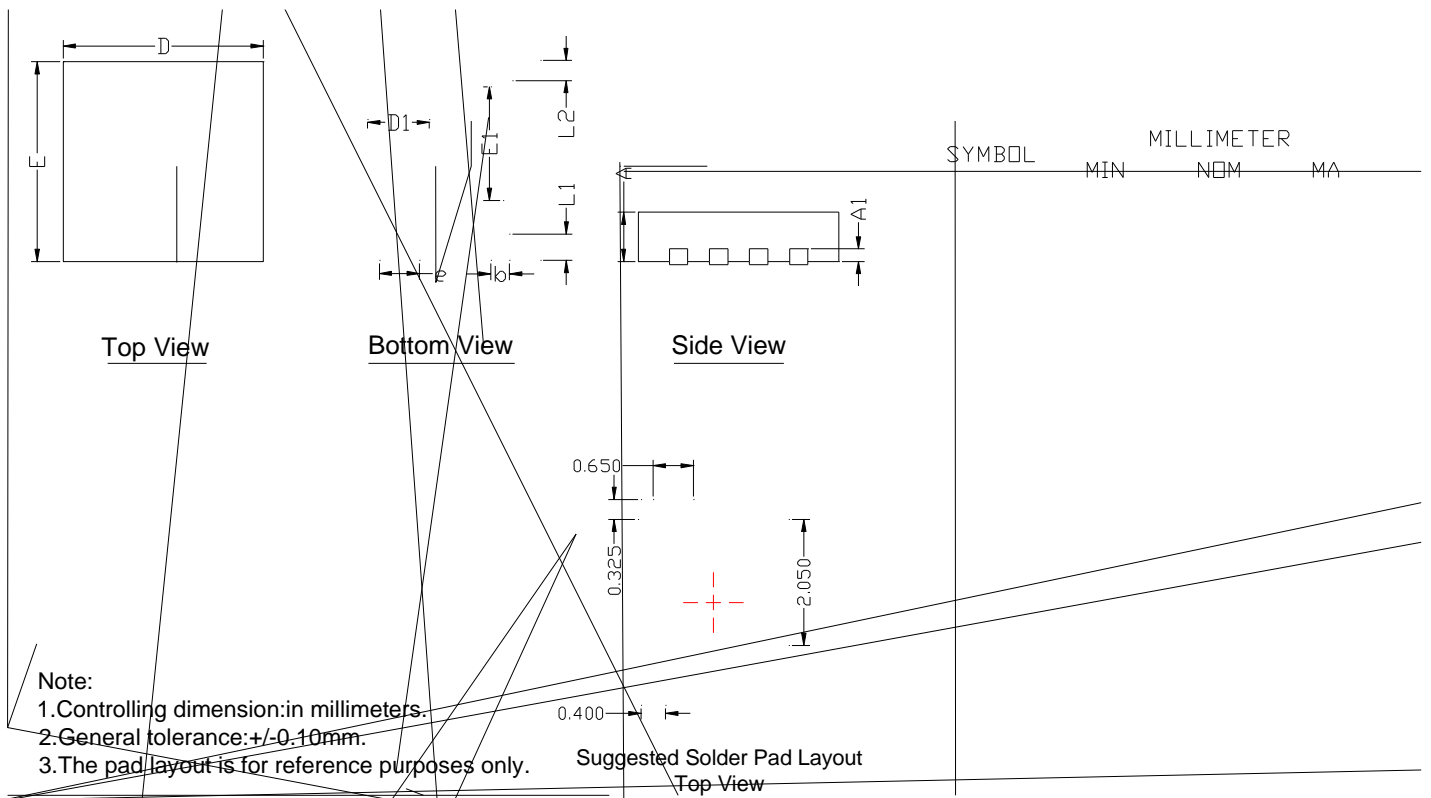


Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



YJQ3622A

DFN3333-8L Package information





YJQ3622A

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