



N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	80V
I_D	120A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	4.8



YJP120G08A

Electrical Characteristics (T_J=25 °C unless otherwise noted)

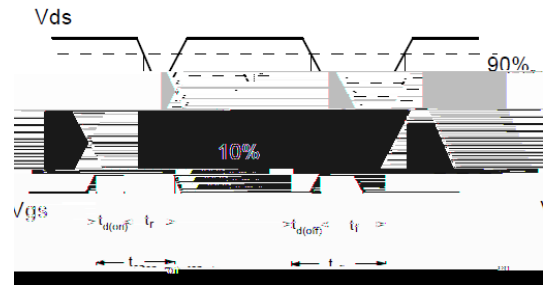
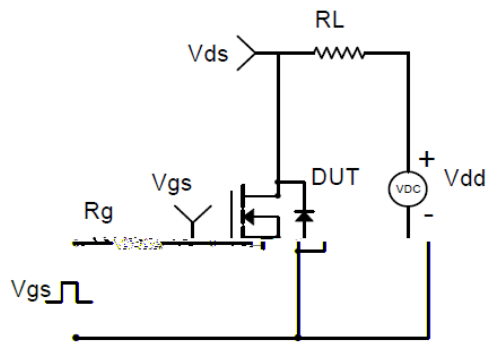
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250	80	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =80V,V _{GS} =0V	-	-	1	
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ± 20V, V _{DS} =0V	-	-	± 100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250	2.0	3.0	4.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =20A	-	3.9	4.8	m
Diode Forward Voltage	V _{SD}	I _S =20A,V _{GS} =0V	-	0.8	1.2	V
Maximum Body-Diode Continuous Current	I _S		-	-	120	A
Gate resistance	R _G	f=1MHz, Open drain	-	2	-	
Transconductance	G _{fs}	V _{DS} =10V,I _D =50A		71.5		S
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =40V,V _{GS} =0V,f=1MHZ	-	5666	-	pF
Output Capacitance	C _{oss}		-	860	-	
Reverse Transfer Capacitance	C _{rss}		-	7.5	-	
Switching Parameters						
Total Gate Charge	Q _g	V _{DS} =40V , V _{GS} =10V , I _D =50A	-	73	-	nC
Gate-Source Charge	Q _{gs}		-	25	-	
Gate-Drain Charge	Q _{gd}		-	12	-	
Reverse Recovery Chrage	Q _{rr}	I _F =50A , dI/dt=100A/us	-	50	-	
Reverse Recovery Time	t _{rr}		-	44	-	
Turn-on Delay Time	t _{D(on)}	V _{DS} =40V , V _{GS} I _D =50A	-	27	-	ns
Turn-on Rise Time	t _r		-	32	-	
Turn-off Delay Time	t _{D(off)}		-	54	-	
Turn-off fall Time	t _f		-	17	-	

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

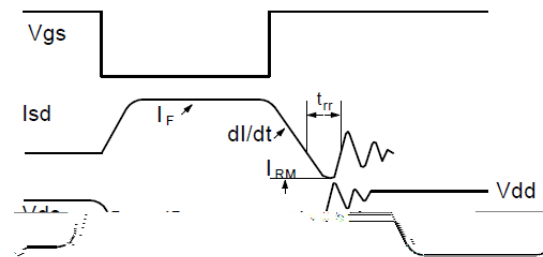
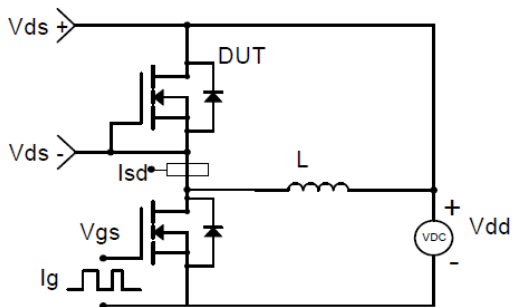
B. T_J=25 °C, V_{DS}=50V, V_{GS}=10V, L=2mH I_{as}=26.5A.

C. P_d is based on max. junction temperature, using junction-case thermal resistance.

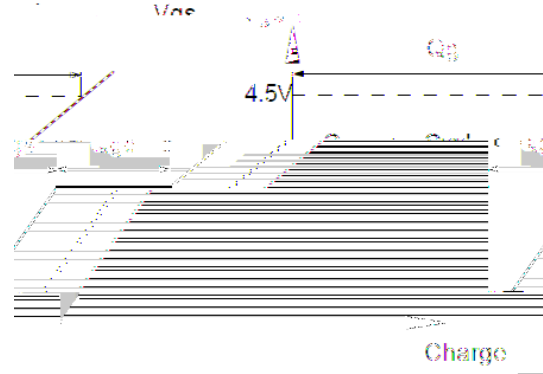
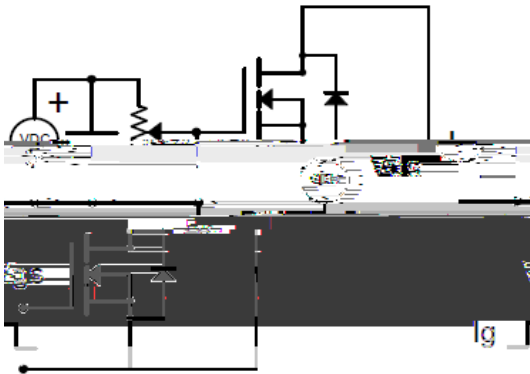
D. The value of R_{θJA} is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25 °C.



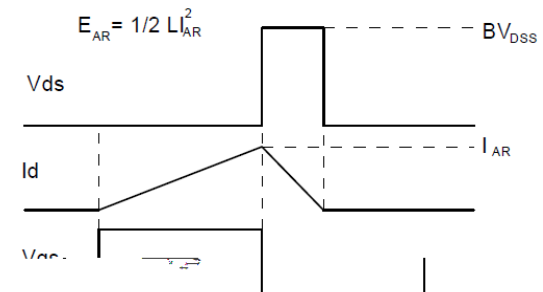
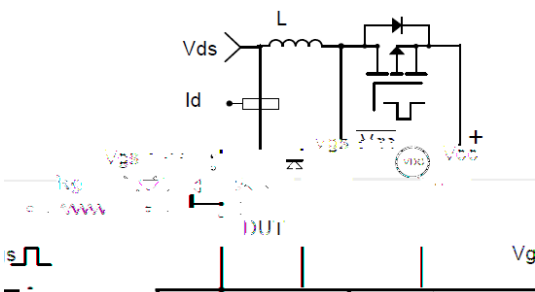
Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



Gate Charge Test Circuit & Waveform

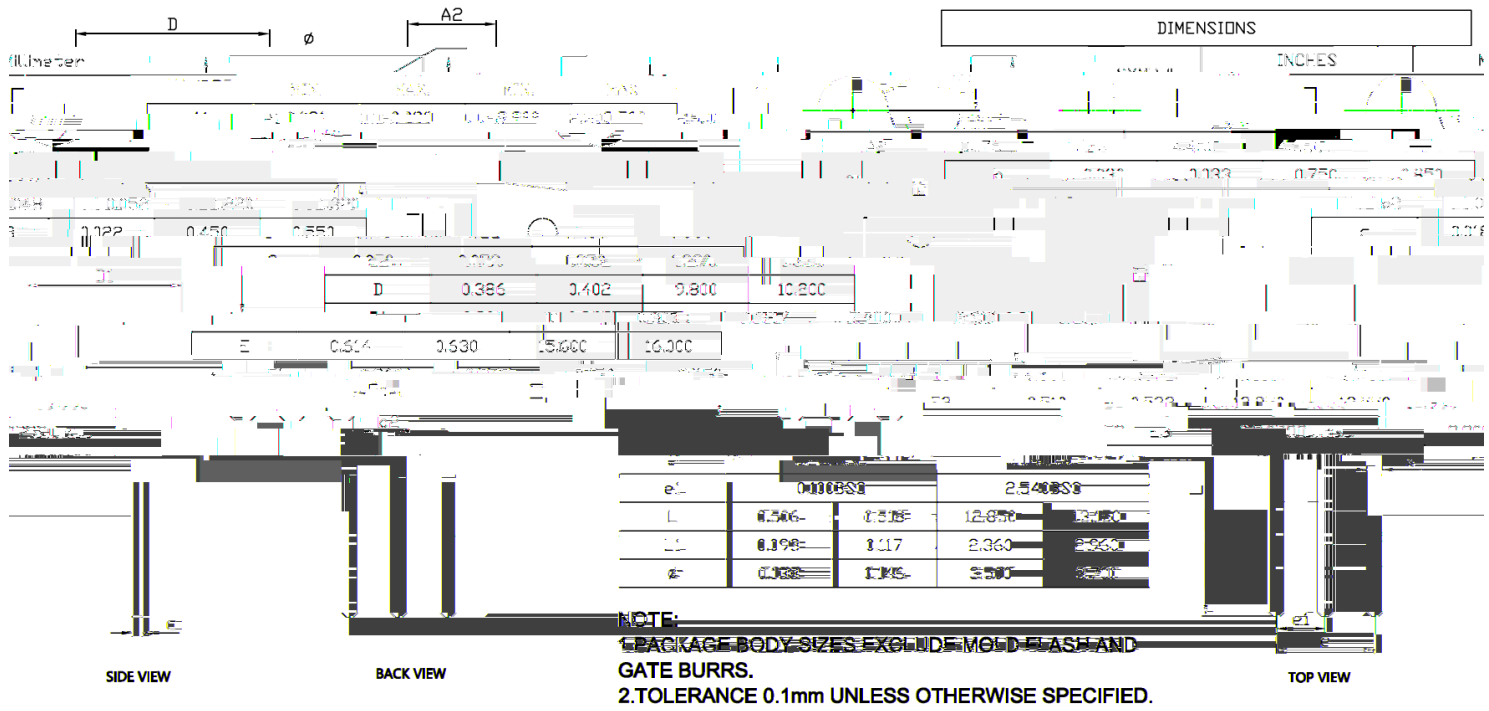


Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



YJP120G08A

TO-220AB-D Package information





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