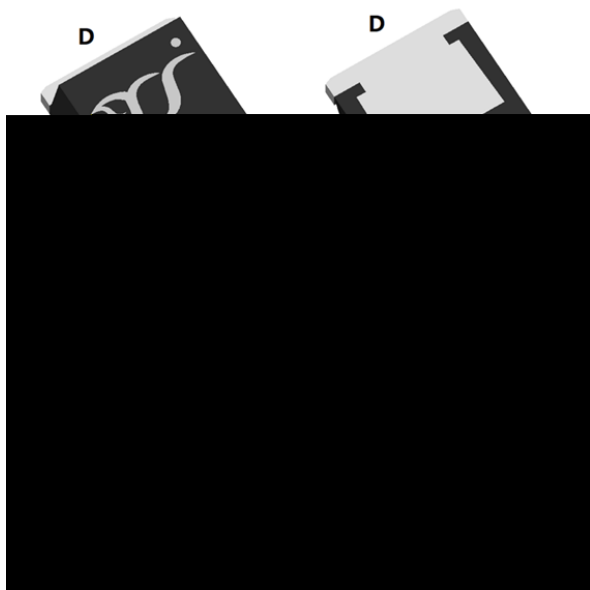


N-Channel Enhancement Mode Field Effect Transistor



Product Summary

V_{DS}	85V
I_D	118A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	<6 mohm
$R_{DS(ON)}$ (at $V_{GS}=6V$)	<9 mohm
100% UIS Tested	
100% ∇V_{DS} Tested	

General Description

Split gate trench MOSFET technology
Excellent package for heat dissipation
High density cell design for low $R_{DS(ON)}$

Applications

Battery management
: a Control and drive
UPS (Uninterruptible Power Supplies)

Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	85	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_C=25^\circ C$	I_D	118	A
	$T_C=100^\circ C$		74.6	
Pulsed Drain Current ^A		I_{DM}	472	A
Avalanche energy ^B		EAS	380	mJ
Total Power Dissipation ^C	$T_C=25^\circ C$	P_D	156	W
	$T_C=100^\circ C$		62.5	
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^\circ C$

Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient ^D	Steady-State	$R_{\theta J}$	35	40	$^\circ C/W$
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	0.65	0.8	

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJB118G08H	F2	YJB118G08H	800	/	8000	13 reel



YJB118G08H

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 .	85	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =85V, V _{GS} =0V	-	-	1	.
		V _{DS} =85V, V _{GS} =0V, T _J =150°C	-	-	100	
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	3	4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =59A	-	4.5	6	m
		V _{GS} =10V, I _D =20A	-	4.5	6	
		V _{GS} =6V, I _D =20A	-	7	9	
Diode Forward Voltage	V _{SD}	I _S =59A, V _{GS} =0V	-	0.9	1.2	V
Gate resistance	R _G	f=1MHz, Open drain	-	1.8	-	
Maximum Body-Diode Continuous Current	I _S		-	-	118	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	4400	-	pF
Output Capacitance	C _{oss}		-	1650	-	
Reverse Transfer Capacitance	C _{rss}		-	150	-	
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =40V, I _D =59A	-	63	-	nC
Gate-Source Charge	Q _{gs}		-	20	-	
Gate-Drain Charge	Q _{gd}		-	22	-	
Reverse Recovery Charge	Q _{rr}	I _F =59A, di/dt=300A/us	-	85	-	nC
Reverse Recovery Time	t _{rr}		-	33	-	ns
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =40V, I _D =59A R _{GEN} =2.2	-	20	-	ns
Turn-on Rise Time	t _r		-	100	-	
Turn-off Delay Time	t _{D(off)}		-	24	-	
Turn-off fall Time	t _f		-	7	-	

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

B. T_J=25°C, V_{DD}=50V, V_G=10V, R_G 9 0.5mH, I_{AS}=39A.

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

D. The value of R_z is measured with the device mounted on 1in2 FR-



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Typical Electrical and Thermal Characteristics Diagrams

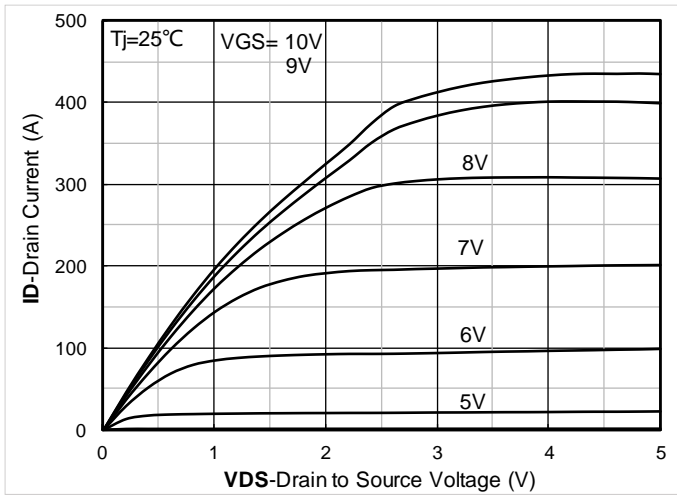


Figure1. Output Characteristics

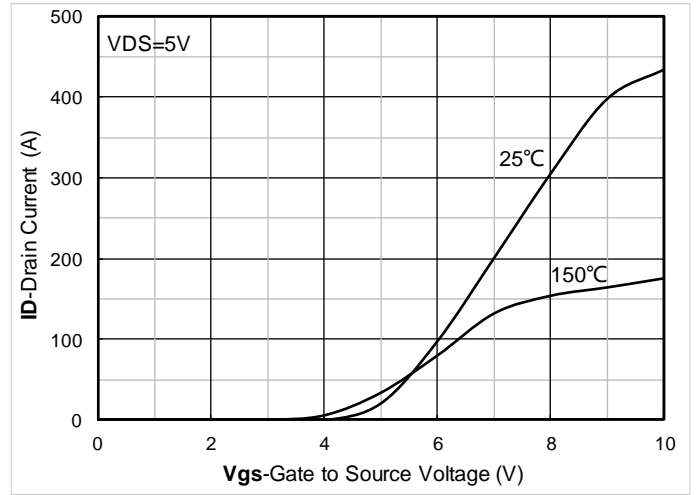


Figure2. Transfer Characteristics

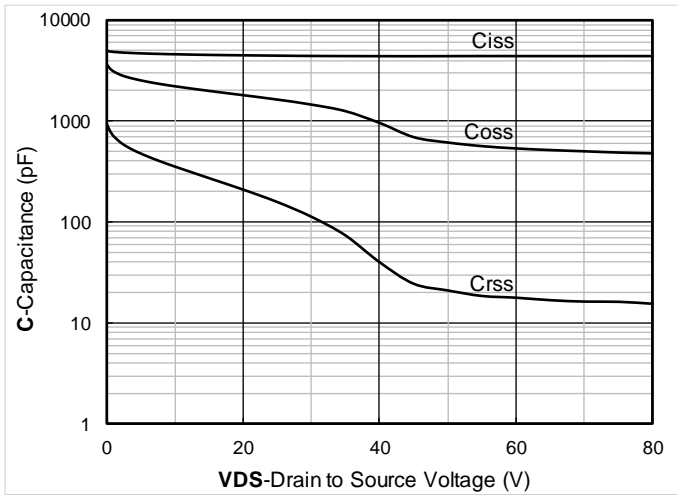


Figure3. Capacitance Characteristics

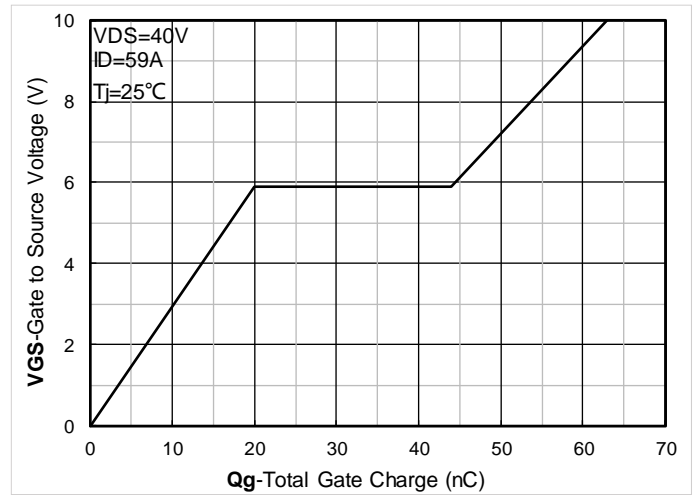


Figure4. Gate Charge

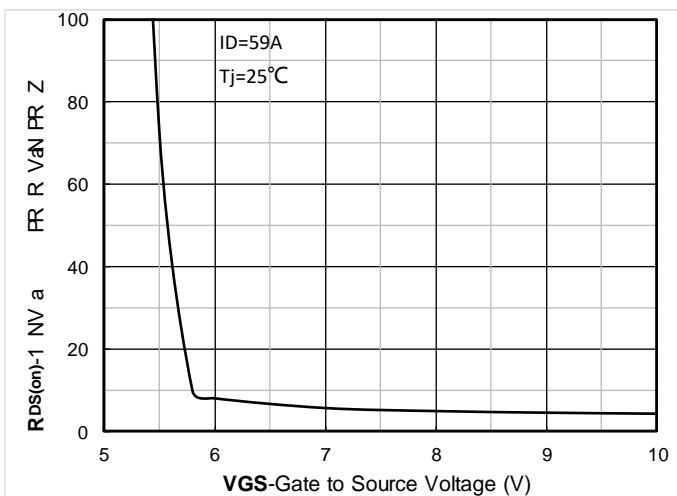


Figure5. On-Resistance vs Gate to Source Voltage

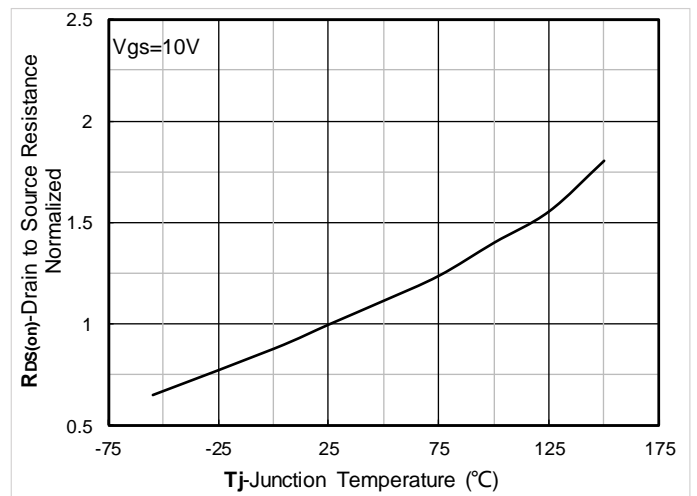


Figure6. Normalized On-Resistance



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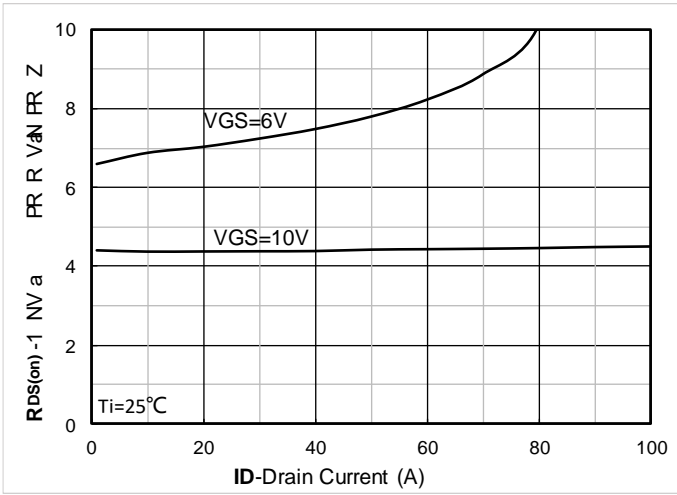


Figure7. $R_{DS(on)}$ VS Drain Current

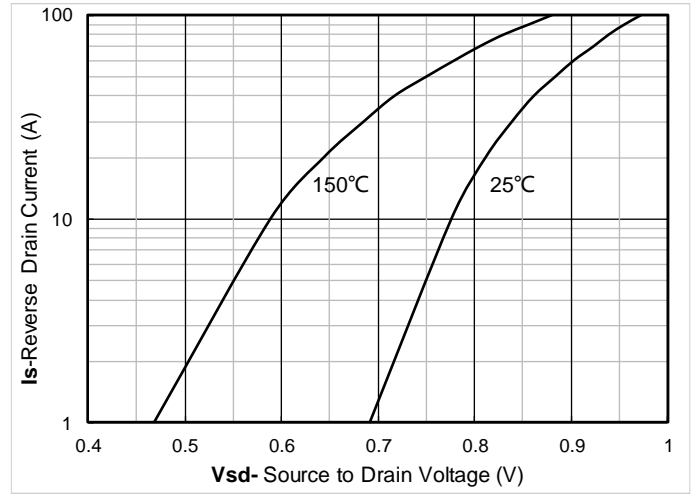


Figure8. Forward characteristics of reverse diode

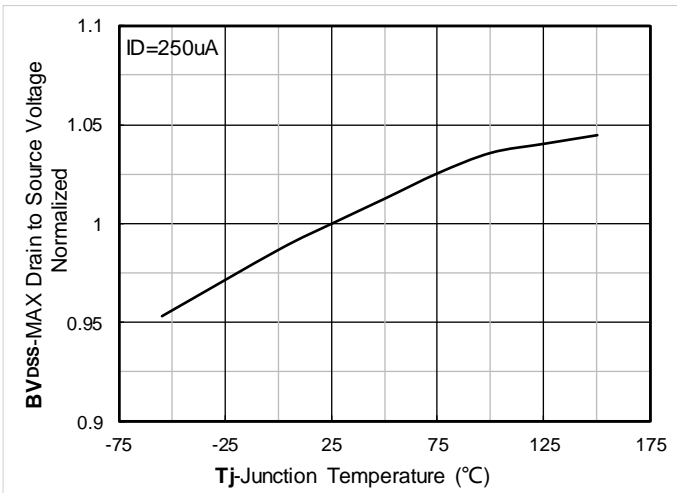


Figure9. Normalized breakdown voltage

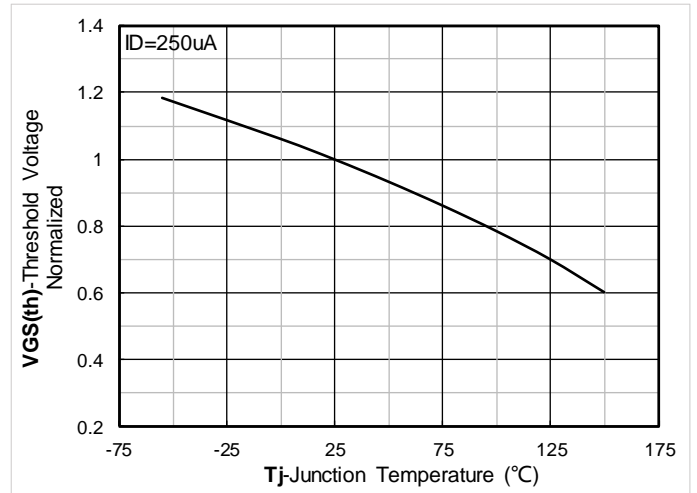


Figure10. Normalized Threshold voltage

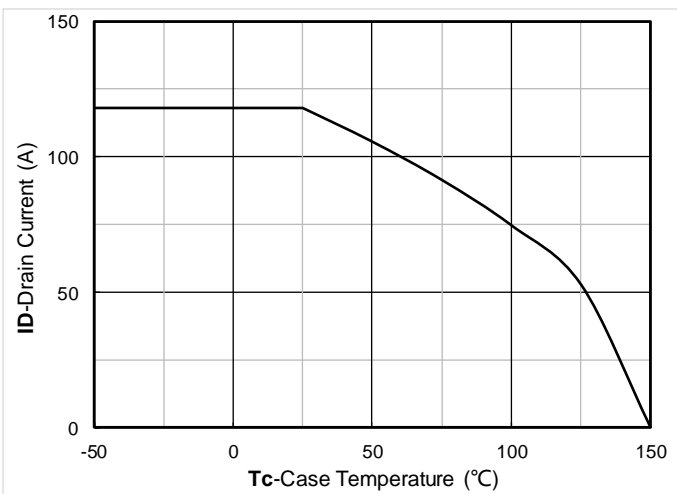


Figure11. Current dissipation

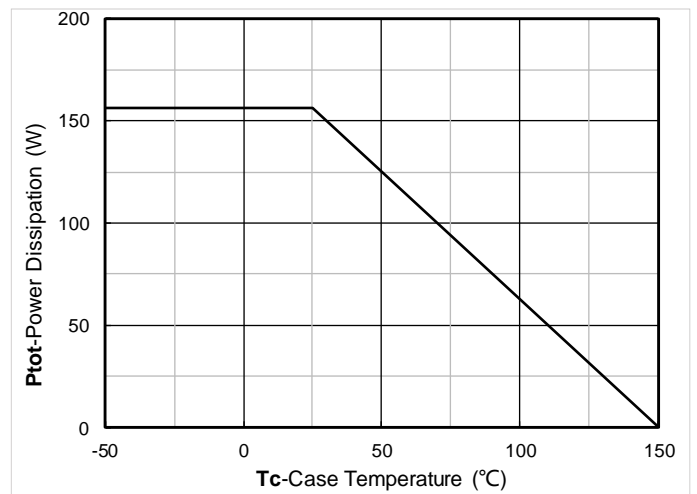


Figure12. Power dissipation



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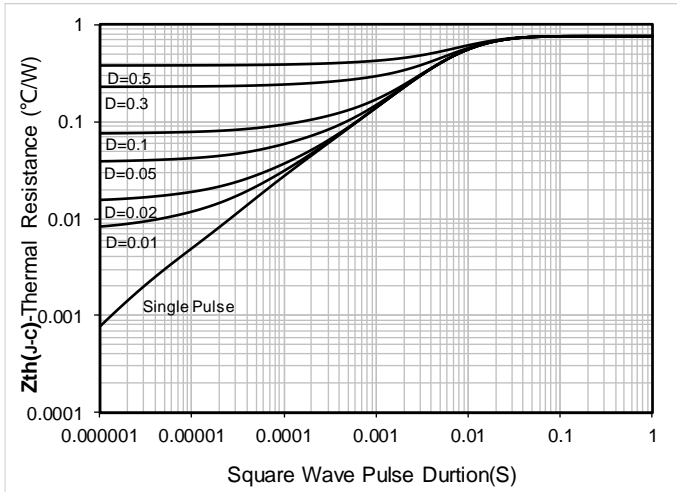


Figure13. Maximum Transient Thermal Impedance

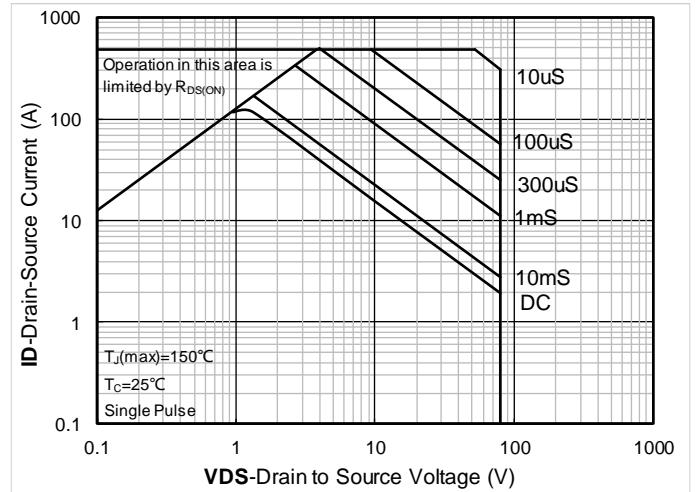
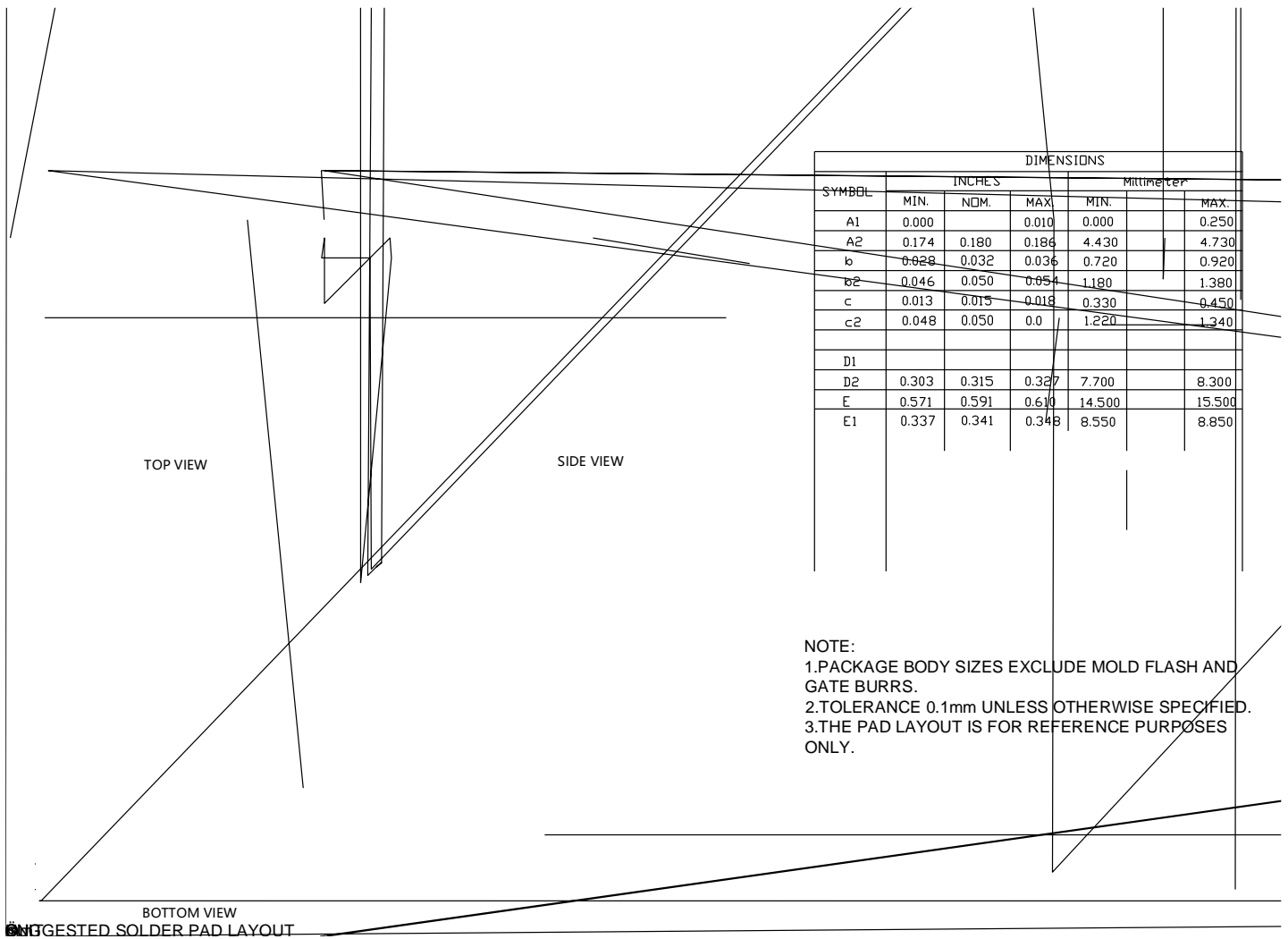


Figure14. Safe Operation Area



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TO-263-HY Package information





YJB118G08H

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