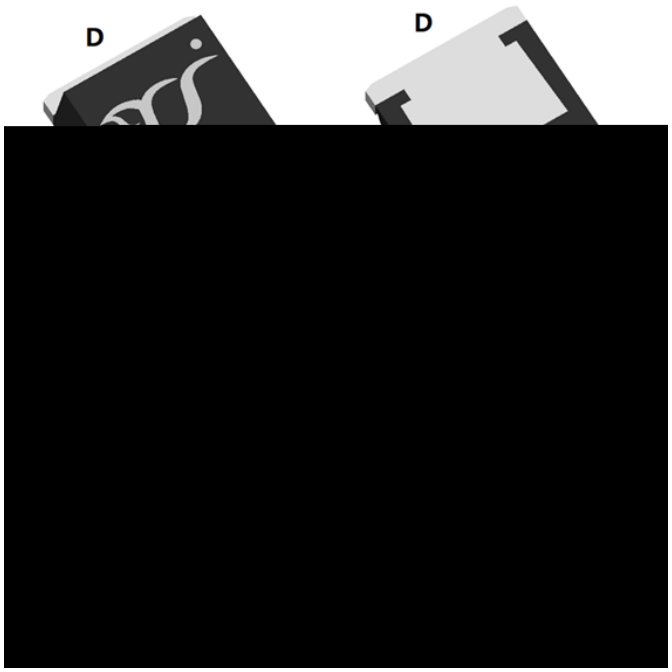
N-Channel Enhancement Mode Field Effect Transistor



Product Summary

V_{DS}	800V
I_D	17A
$R_{DS(ON)}$(at V_{GS}=10V)	＜290m
100% EAS Tested	
100% ▽V_{DS} Tested	

General Description

Super Junction High Voltage MOSFET technology
Low Power Loss by High Speed Switching and
Low On-Resistance
Moisture Sensitivity Level 1
Epoxy Meets UL 94 V-0 Flammability Rating
Halogen Free

Applications

Power switching application
Flyback power supply stages
Adapter
Lighting

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	800	V
Gate-source Voltage		V_{GS}	±30	V
Drain Current	T_A=25℃	I_D	2	A
	T_A =100℃		1.3	
	T_C=25℃		17	
	Tc=100℃		10	
Pulsed Drain Current [A]		I_{DM}	50	A
Avalanche energy [B]		EAS	225	mJ
Total Power Dissipation [C]	T_A =25℃	P_D	2.7	W
	T_A =100℃		1	
	T_C=25℃		200	
	Tc=100℃		80	
Junction and Storage Temperature Range		T_J ,T_{STG}	-55～+150	℃

Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient [D]	Steady-State	R 7.	35	45	℃/W
Thermal Resistance Junction-to-Case	Steady-State	R 70	0.5	0.62	

Ordering Information (Example)

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJB17C80HJ	F2	YJB17C80HJ	800	/	8000	13 reel

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 .	800	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=800V, V_{GS}=0V	-	-	1	.
		V_{DS}=800V, V_{GS}=0V, Tj=150℃	-	-	100	
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±30V, 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=11A	-	220	290	m
Diode Forward Voltage	V_{SD}	I_S=17A, V_{GS}=0V	-	0.85	1.2	V
Gate resistance	R_G	f=1MHz	-	2	-	
Maximum Body-Diode Continuous Current	I_S		-	-	17	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V, f=1MHz	-	1800	-	pF
Output Capacitance	C_{oss}		-	1500	-	
Reverse Transfer Capacitance	C_{rss}		-	64	-	
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=640V, I_D=17A	-	56	-	nC
Gate-Source Charge	Q_{gs}		-	10	-	
Gate-Drain Charge	Q_{gd}		-	22	-	
Reverse Recovery Charge	Q_{rr}	I_F=17A, di/dt=100A/us	-	9.5	-	nC
Reverse Recovery Time	t_{rr}		-	565	-	ns
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=10V, V_{DD}=400V, I_D=17A R_{GEN}=25	-	32	-	ns
Turn-on Rise Time	t_r		-	56	-	
Turn-off Delay Time	$t_{D(off)}$		-	160	-	
Turn-off fall Time	t_f		-	49	-	

A. Repetitive rating; pulse width limited by max. junction temperature.
B. T_J=25℃, V_{DD}=50V, V_G=10V, L=50mH, IAS=3A.
C. P_d is based on max. junction temperature, using junction-case thermal resistance.
D. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, in the still air environment with T_A =25℃. The maximum allowed junction temperature of 150℃. The value in any given application depends on the user's specific board design.

■Typical Electrical and Thermal Characteristics Diagrams

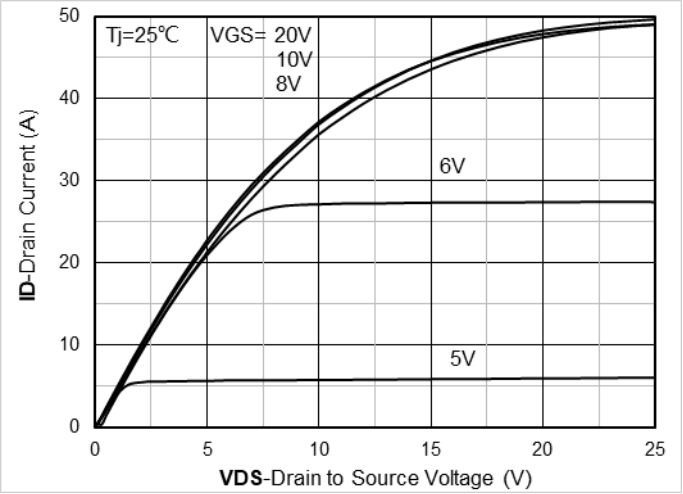


Figure1. Output Characteristics

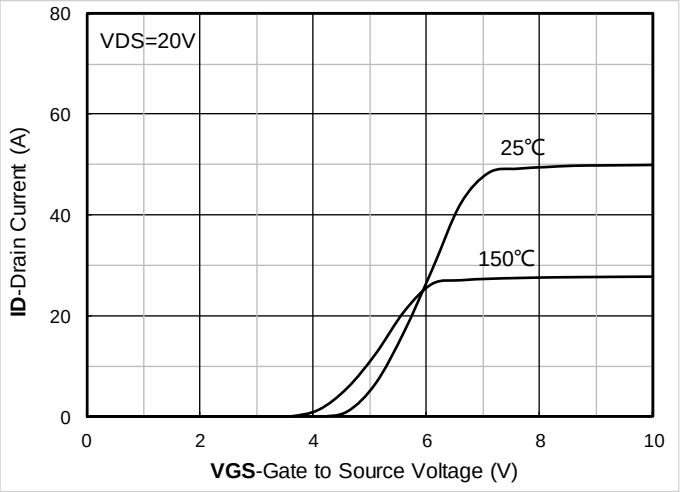


Figure2. Transfer Characteristics

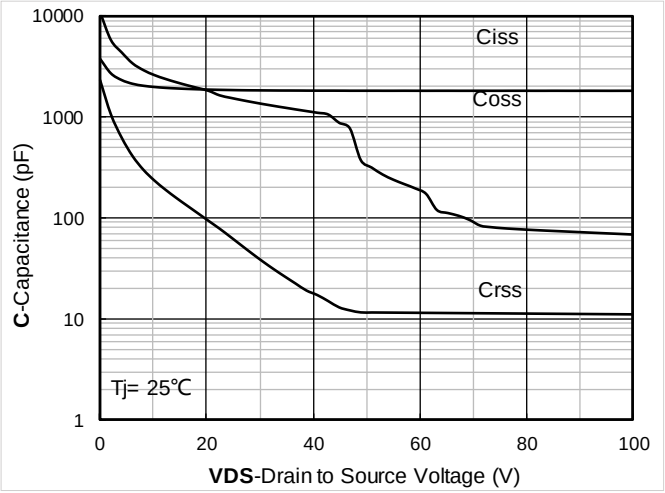


Figure3. Capacitance Characteristics

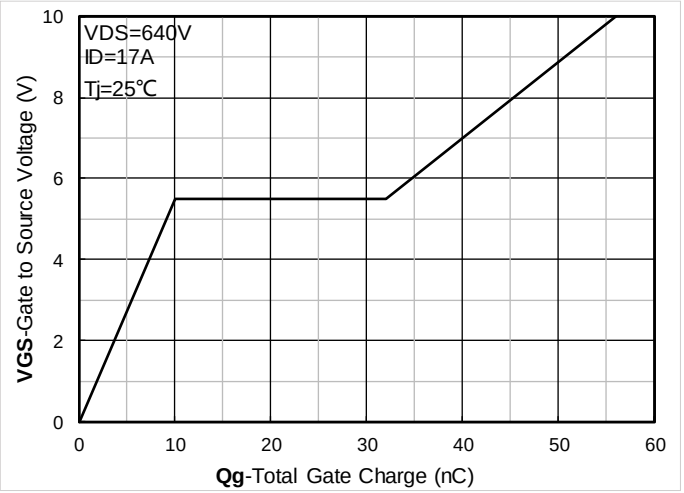


Figure4. Gate Charge

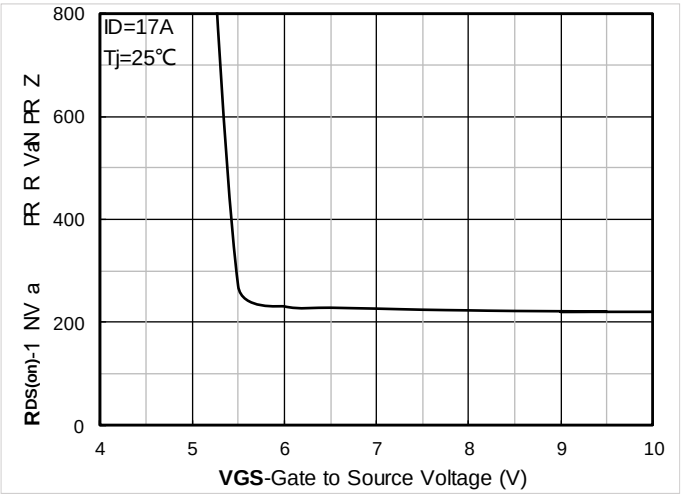


Figure5. On-Resistance vs Gate to Source Voltage

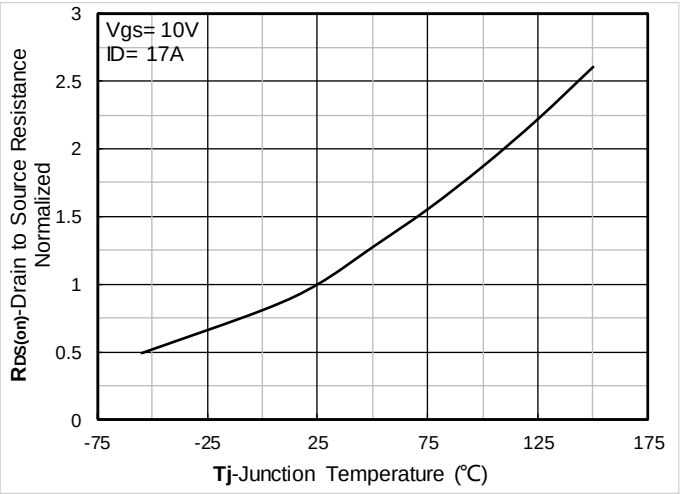


Figure6. Normalized On-Resistance

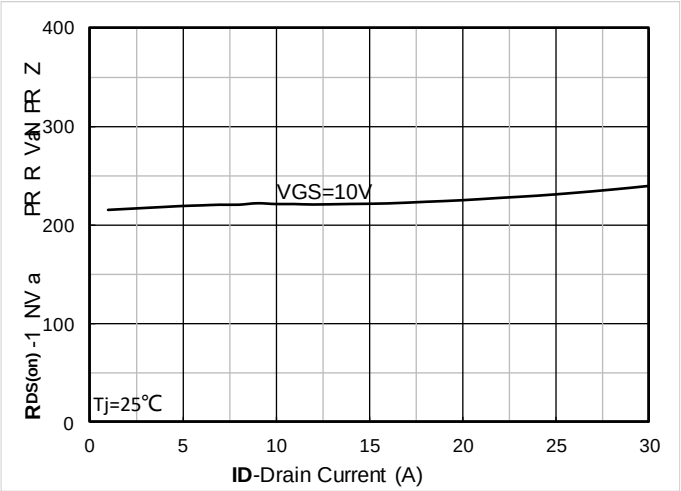


Figure7. $R_{DS(on)}$ VS Drain Current

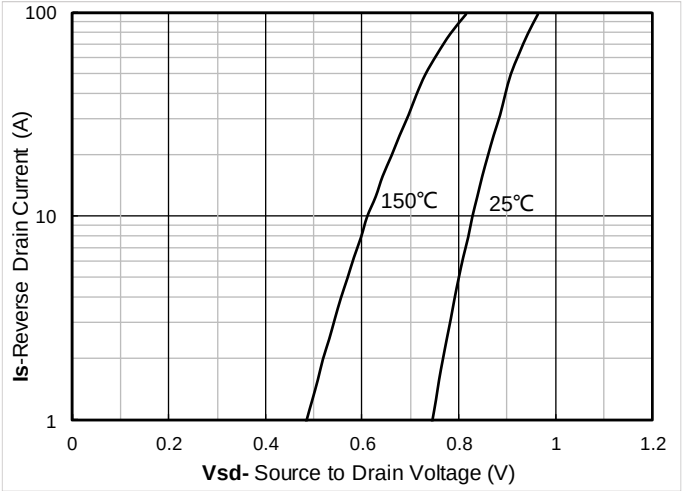


Figure8. Forward characteristics of reverse diode

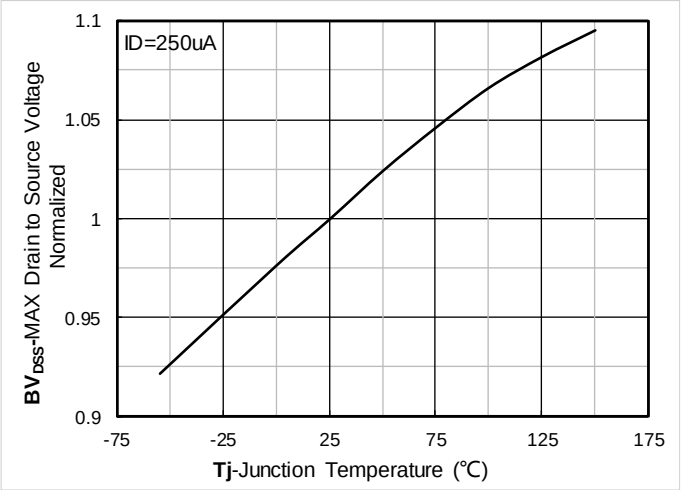


Figure9. Normalized breakdown voltage

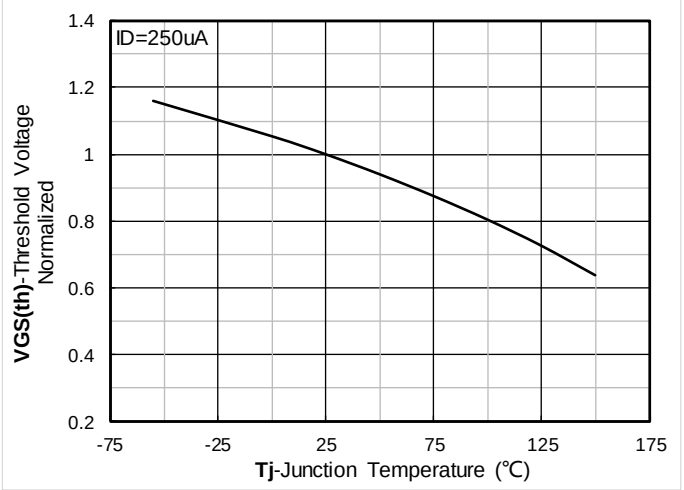


Figure10. Normalized Threshold voltage

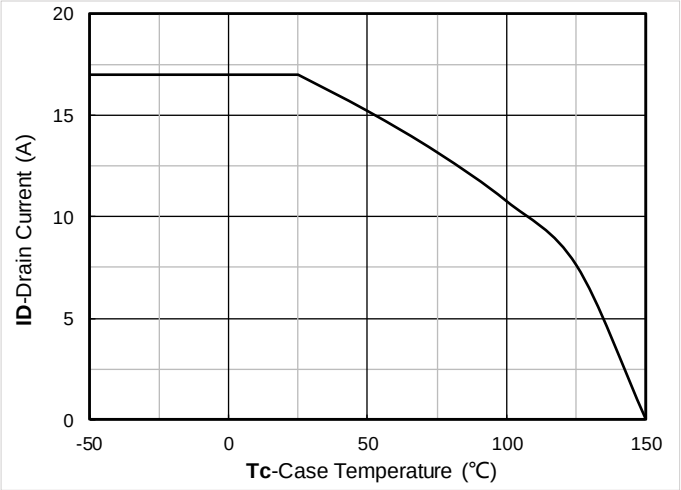


Figure11. Current dissipation

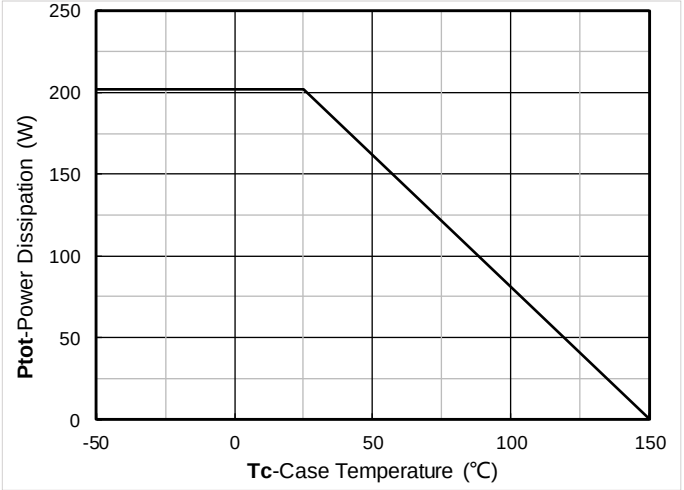


Figure12. Power dissipation

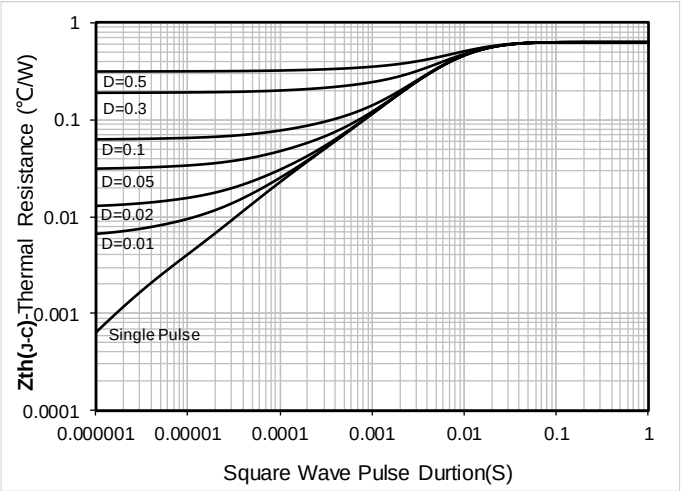


Figure13. Maximum Transient Thermal Impedance

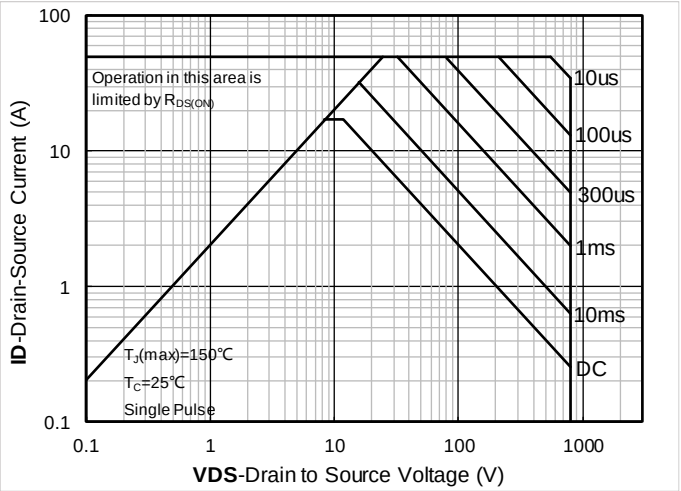
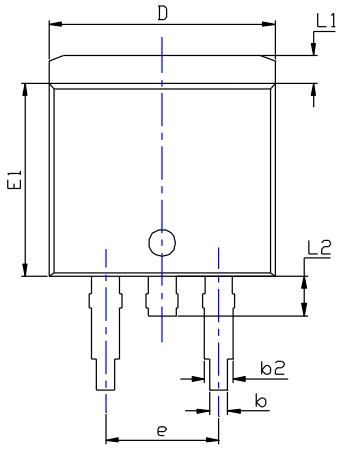
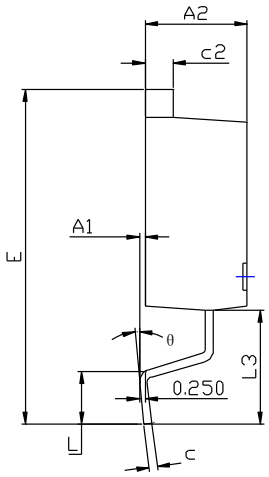


Figure14. Safe Operation Area

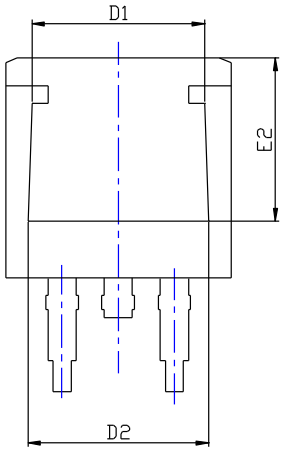
TO-263-HY Package information



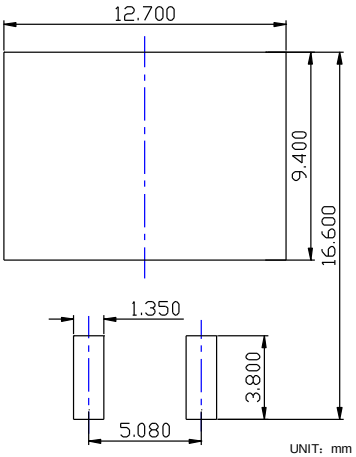
TOP VIEW



SIDE VIEW



BOTTOM VIEW



SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS					
	INCHES			Millimeter		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A1	0.000	---	0.010	0.000	---	0.250
A2	0.174	0.180	0.186	4.430	4.580	4.730
b	0.028	0.032	0.036	0.720	0.820	0.920
b2	0.046	0.050	0.054	1.180	1.280	1.380
c	0.013	0.015	0.018	0.330	0.390	0.450
c2	0.048	0.050	0.053	1.220	1.280	1.340
D	0.394	0.400	0.406	10.000	10.150	10.300
D1	0.295	0.307	0.319	7.500	7.800	8.100
D2	0.303	0.315	0.327	7.700	8.000	8.300
E	0.571	0.591	0.610	14.500	15.000	15.500
E1	0.337	0.341	0.348	8.550	8.700	8.850
E2	0.276	0.287	0.299	7.000	7.300	7.600
e	0.200BSC			5.080BSC		
L	0.070	---	0.110	1.790	---	2.790
L1	0.044	---	0.056	1.120	---	1.420
L2	0.030	---	0.070	0.770	---	1.770
L3	0.197REF			5.000REF		
θ	0°	---	8°	0°	---	8°

NOTE:
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

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