

S-LPB8425DT0AG

40V P-Channel Power MOSFET

1. FEATURES

- Low thermal impedance.
- Fast switching.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S-prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

2. APPLICATIONS

- Power Tools
- DC/DC conversion
- Motor Control

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
S-LPB8425DT0AG	P8425	2000/Tape&Reel

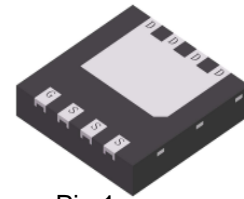
4. MAXIMUM RATINGS

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDS	-40	V
Gate-to-Source Voltage		VGS	±20	V
Continuous Drain Current(Note 1)	TA=25°C	ID	-7.5	A
	TA=100°C		-5	
Pulsed Drain Current (Note 2)		IDM	-30	
Continuous Drain Current	TC=25°C	ID	-24	A
	TC=100°C		-15.6	
Pulsed Drain Current		IDM	-96	
Avalanche Current		IAS	24.6	A
Avalanche Energy(L=0.1mH)		EAS	30.1	mJ
Power Dissipation(Note 1)	TA=25°C	PD	2	W
	TC=25°C		20	
Operating Junction and Storage Temperature Range		Tj/Tstg	-55~+150	°C

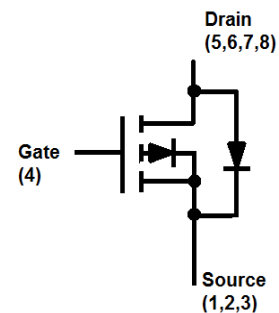
5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance,Junction-to-Ambient(Note 1)	RθJA	60	°C/W
Thermal Resistance,Junction-to-Case	RθJC	6	

Note:1.Surface mounted on "1.5in x 1.5in" FR4 board using 1*1 in pad, 2 oz Cu.
2.Pulse width limited by maximum junction temperature.



Pin 1
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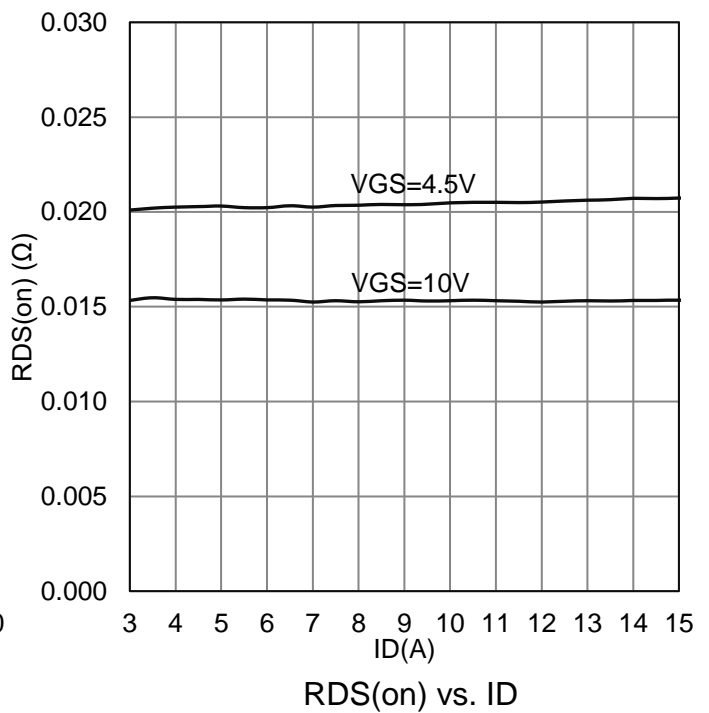
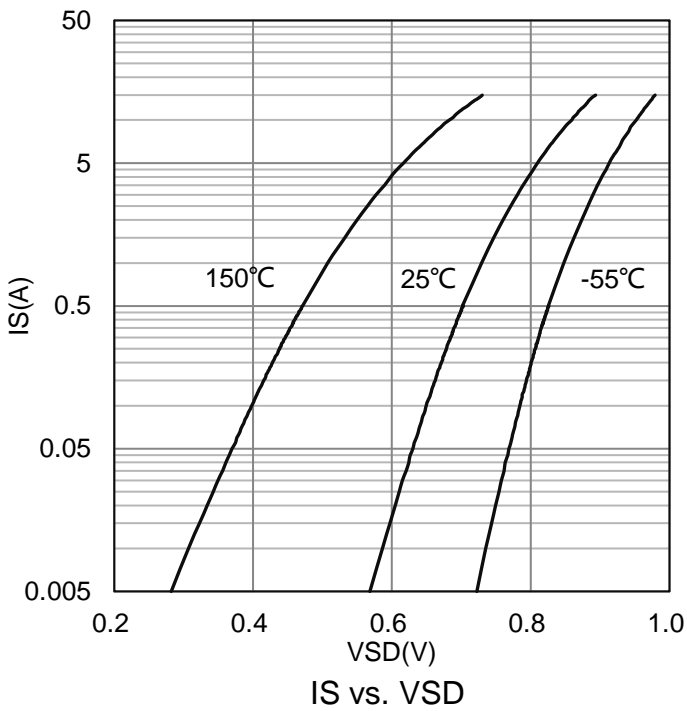
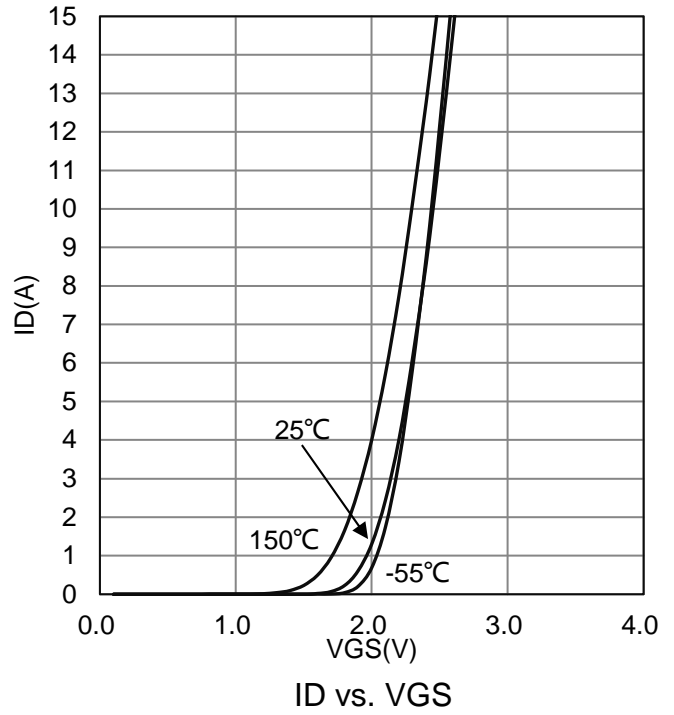
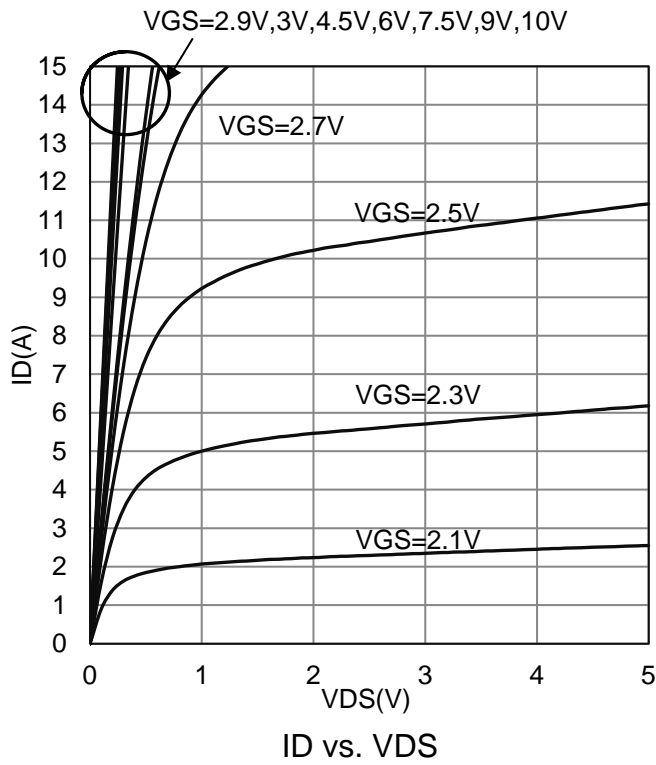


6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

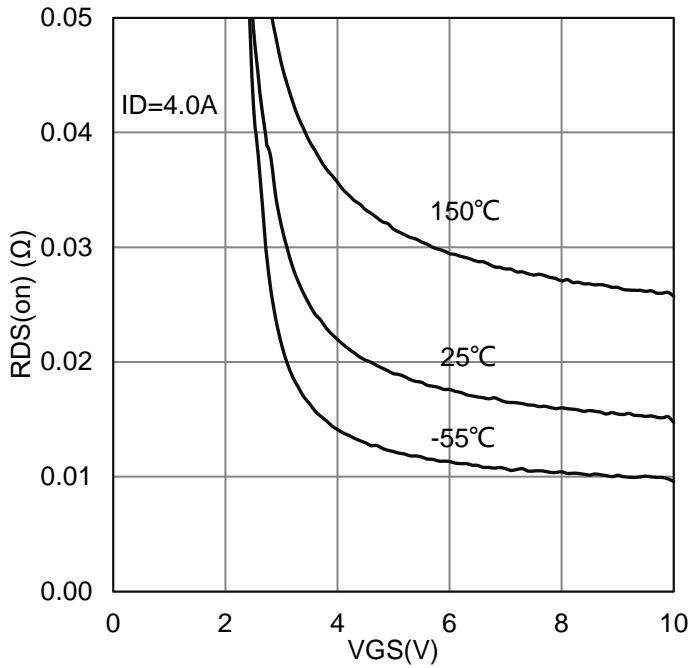
Characteristic	Symbol	Min.	Typ.	Max.	Unit
STATIC					
Drain–Source Breakdown Voltage (VGS = 0 V, ID = -250 μA)	VBRDSS	-40	-	-	V
Gate Threshold Voltage (VDS = VGS , ID = -250 μA)	VGS(th)	-1.2	-1.8	-2.5	V
Gate-Body leakage current (VDS = 0 V, VGS = ±20 V)	IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS = -32 V, VGS = 0 V)	IDSS	-	-	-1	μA
Drain-to-Source On-Resistance (Note 3) (VGS = -10 V, ID = -4 A) (VGS = -4.5 V, ID = -3 A)	RDS(on)	-	-	20 30	mΩ
Diode Forward Voltage (IS = -1 A, VGS = 0 V)	VSD	-	-	-1.2	V
DYNAMIC					
Input Capacitance	(VGS = 0 V, VDS = -15 V, f= 1MHz)	Ciss	-	2425	pF
Output Capacitance		Coss	-	189	
Reverse Transfer Capacitance		Crss	-	178	
Total Gate Charge	(VDS = -15 V, VGS = -10 V, ID = -4 A)	Qg	-	40.5	nC
Gate Source Charge		Qgs	-	4.3	
Gate Drain Charge		Qgd	-	8.2	
Turn-On DelayTime	(VDD = -15 V, ID = -4 A, RG=3Ω, VGEN = -10 V)	td(on)	-	9.5	ns
Turn-On Rise Time		tr	-	9	
Turn-Off DelayTime		td(off)	-	84	
Turn-Off Fall Time		tf	-	27	

3.Pulse test: PW ≤ 300μs duty cycle ≤ 2%.

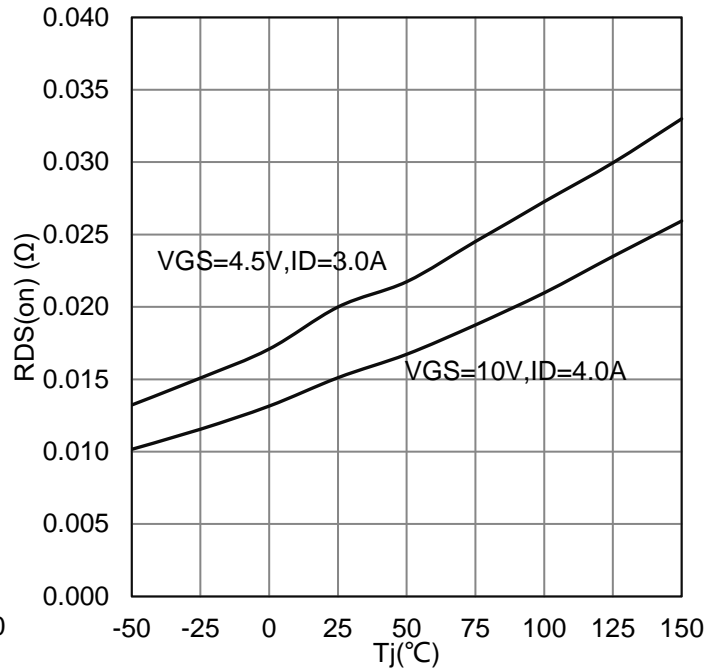
7. ELECTRICAL CHARACTERISTICS CURVES



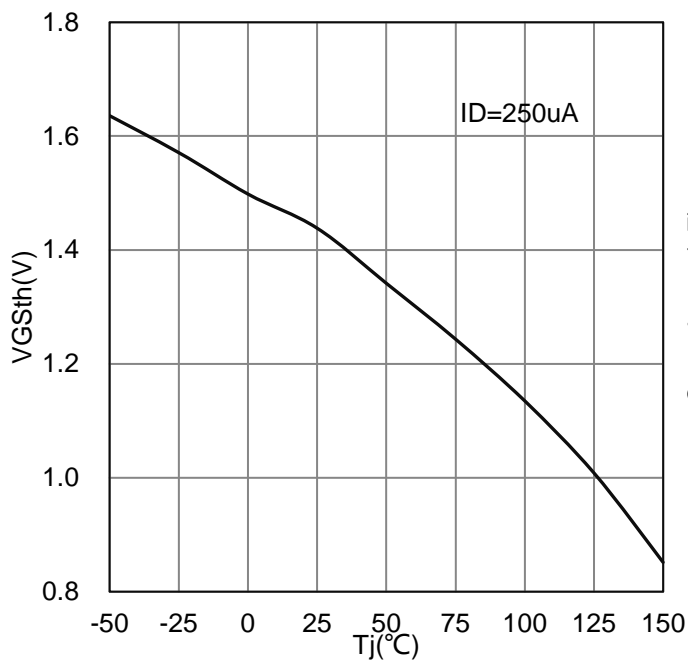
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



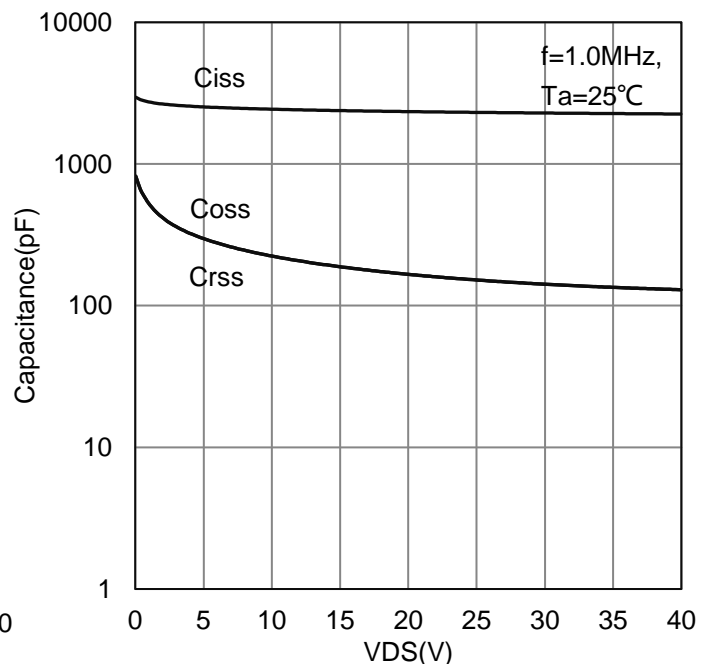
RDS(on) vs. VGS



RDS(on) vs. Tj

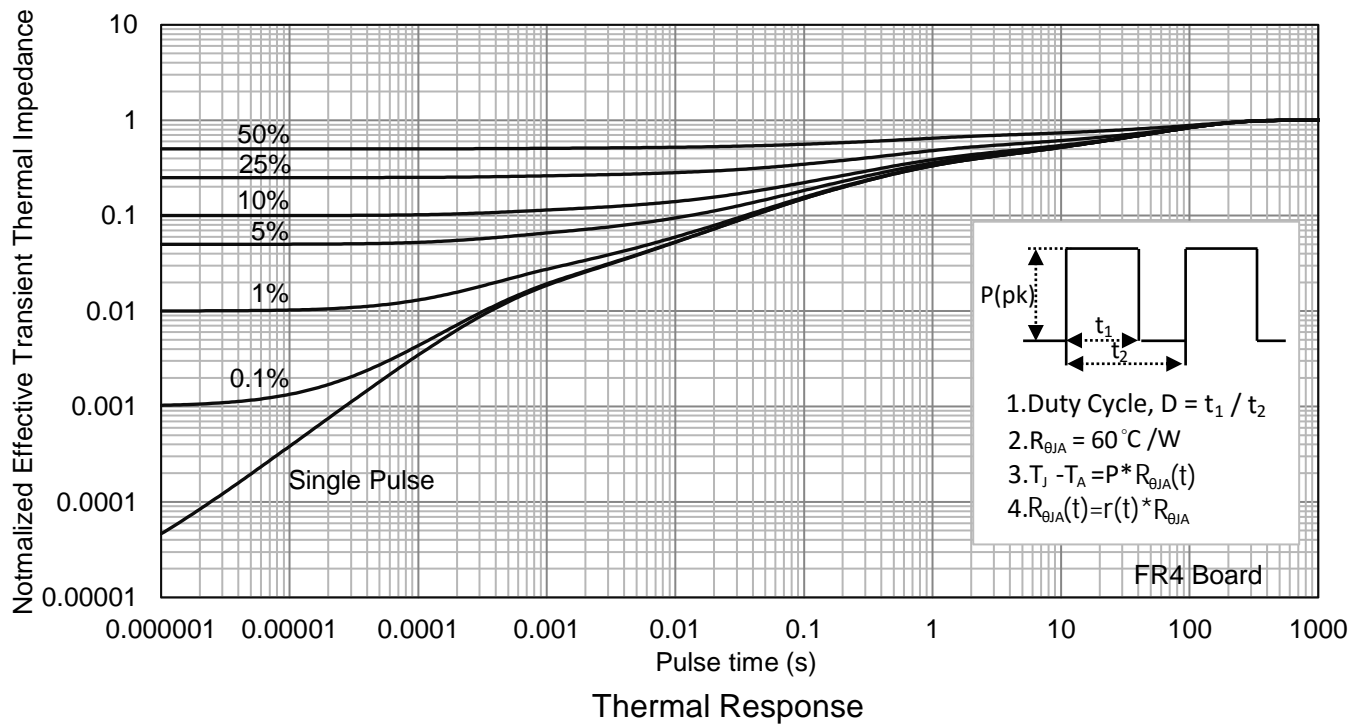
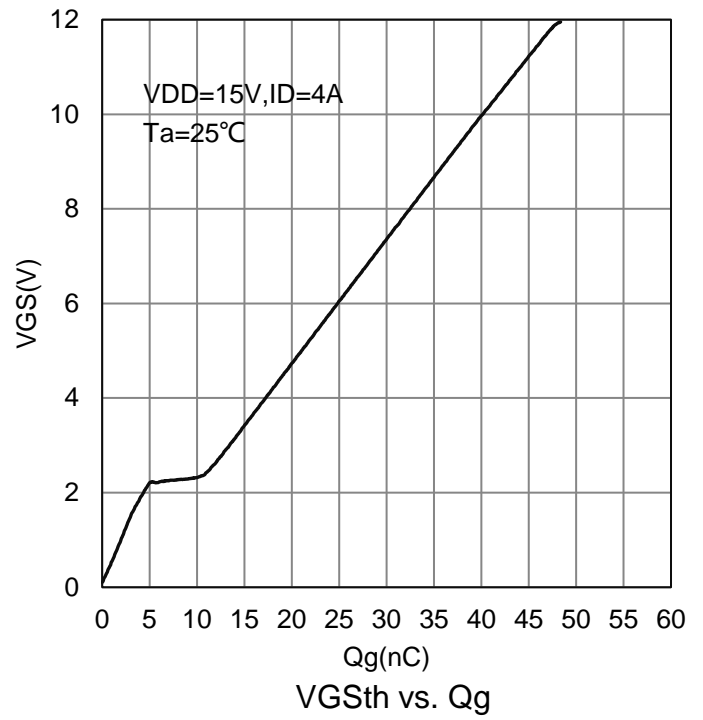
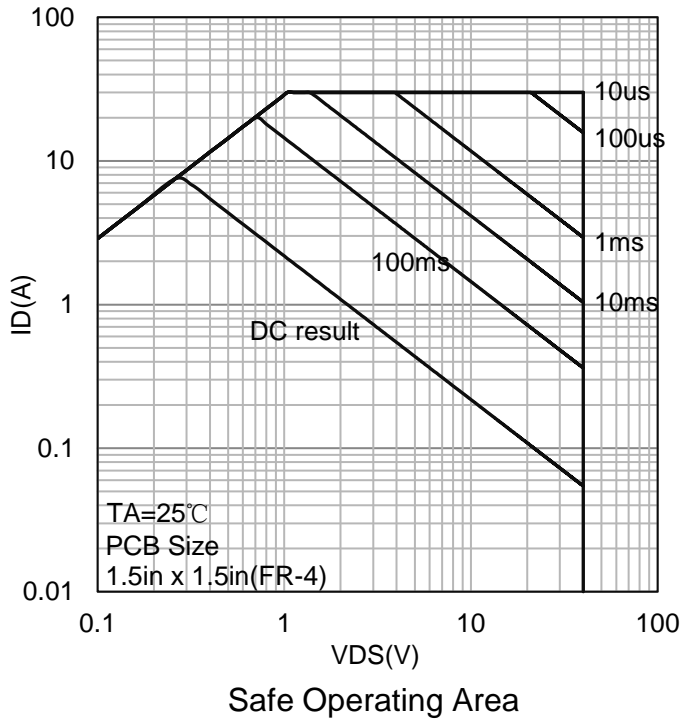


VGSth vs. Tj



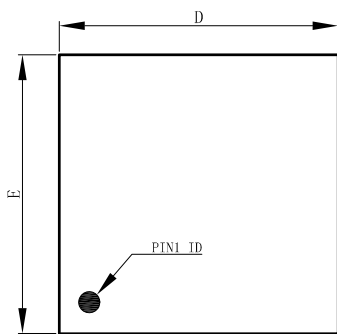
Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

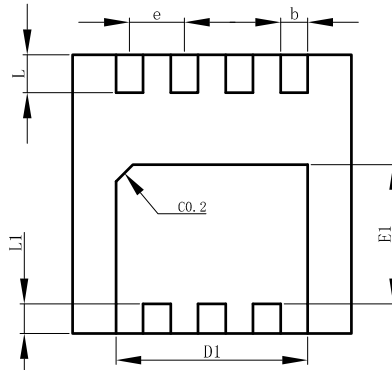


8. OUTLINE AND DIMENSIONS

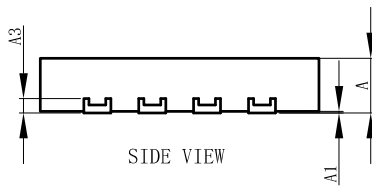
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TOP VIEW



BOTTOM VIEW

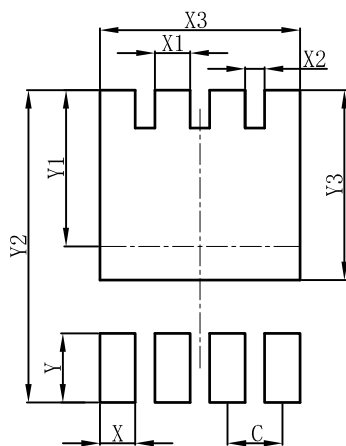


SIDE VIEW

DFN3333-8A			
DIM	MIN	NOR	MAX
A	0.60	0.65	0.70
A1	0.00	0.03	0.05
b	0.27	0.32	0.37
D	3.25	3.30	3.35
E	3.25	3.30	3.35
D1	2.22	2.27	2.32
E1	1.60	1.65	1.70
e	0.65BSC		
L	0.40	0.45	0.50
L1	0.30	0.35	0.40
A3	0.152REF.		
All Dimensions in mm			

9. SOLDERING FOOTPRINT

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DIM	(mm)
C	0.65
X	0.42
X1	0.42
X2	0.23
X3	2.37
Y	0.70
Y1	1.85
Y2	3.70
Y3	2.25

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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