NB8462D

60V N-Channel MOSFET

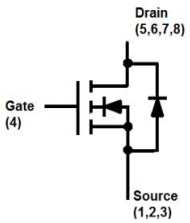
DFN3333-8A

1. FEATURES

- Improved dv/dt capability
- Fast switching
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- Networking
- Load Switch
- LED applications
- Quick Charger



3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
NB8462D	65D	2000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDS	60	V
Gate-to-Source Voltage		VGS	+20/-12	V
Continuous Drain Current	TA=25℃	ID	18	A
	TA=100℃		11	
	TC=25℃		50	
	TC=100℃		29	
Pulsed Drain Current(Note 2)		IDM	72	A
Avalanche Current(L=0.1mH)		IAS	25.2	A
Avalanche energy(L=0.1mH)		EAS	31.75	mJ
Power Dissipation(Note 1)	TA=25℃	PD	2	W
	TA=100℃		1.1	
	TC=25℃		21	
	TC=100℃		12	
Operating Junction and Storage Temperature Range		Tj/Tstg	-50~+150	℃

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Junction−to−Ambient (Note 1)	$R_{\theta JA}$	60	ºC/W
Junction−to−Ambient (Note 3)	$R_{\theta JA}$	170	
Junction−to−Case (Note 1)	$R_{\theta JC}$	6	

1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.

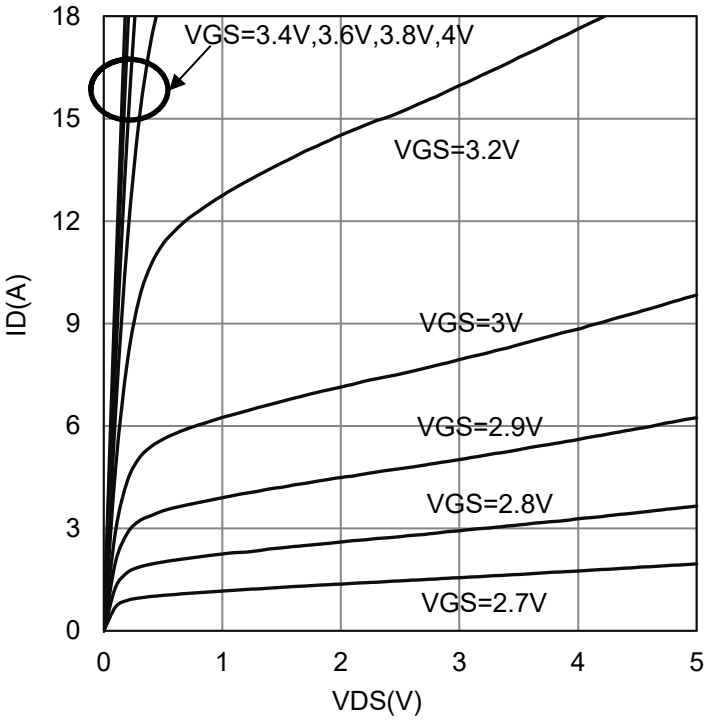
2.Pulse width limited by maximum junction temperature.

3.Surface mounted on FR4 board using the minimum recommended pad size(30.0mm×25.0mm×1.6mm, 1 oz Cu).

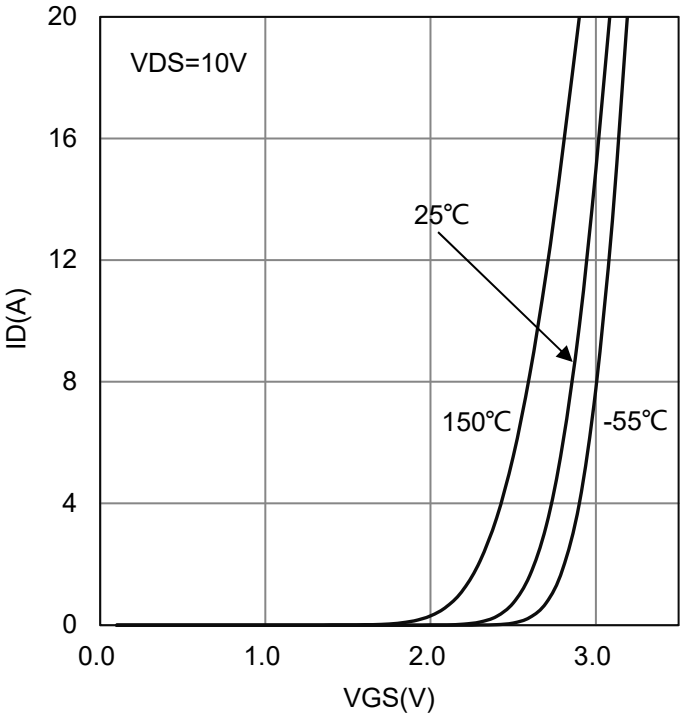
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic		Symbol	Min.	Typ.	Max.	Unit
STATIC						
Drain to Source Breakdown Voltage (VGS = 0 V, ID = 250 μA)		BVDSS	60	-	-	V
Drain-to-Source Leakage Current (VDS = 60 V,VGS = 0 V)		IDSS	-	-	1	μA
Gate-Body leakage current (VDS = 0 V, VGS = ±20 V)		IGSS	-	-	±100	nA
Gate Threshold Voltage (VDS = VGS , ID = 250 μA)		VGS(th)	1	1.5	2.5	V
Drain-to-Source On-Resistance (VGS = 10 V,ID = 8 A) (VGS = 4.5 V,ID = 4 A)		RDS(ON)	- -	- -	6.2 9.3	mΩ
DYNAMIC						
Total Gate Charge	(VDS = 48 V, VGS = 10 V, ID = 5 A)	Qg	-	39.5	-	nC
Gate to Source Charge		Qgs	-	5.35	-	
Gate to Drain Charge		Qgd	-	11.5	-	
Turn-on Delay Time	(VDD = 30 V, VGS = 10 V,RG = 6 Ω,ID = 1 A, RL = 30 Ω)	td(on)	-	13.7	-	nS
Rise Time		tr	-	10.3	-	
Turn-Off Delay Time		td(off)	-	58	-	
Fall Time		tf	-	72	-	
Input Capacitance	(VDS = 25 V, VGS = 0 V, F= 1MHz)	Ciss	-	2005	-	pF
Output Capacitance		Coss	-	770	-	
Reverse Transfer Capacitance		Crss	-	89	-	
Diode Forward Voltage (VGS =0V,IS =1A,TJ =25℃)		VSD	-	-	1	V
Continuous Source Current (VG =VD =0V , Force Current)		IS	-	-	18	A
Pulsed Source Current (VG =VD =0V , Force Current)		ISM	-	-	72	A

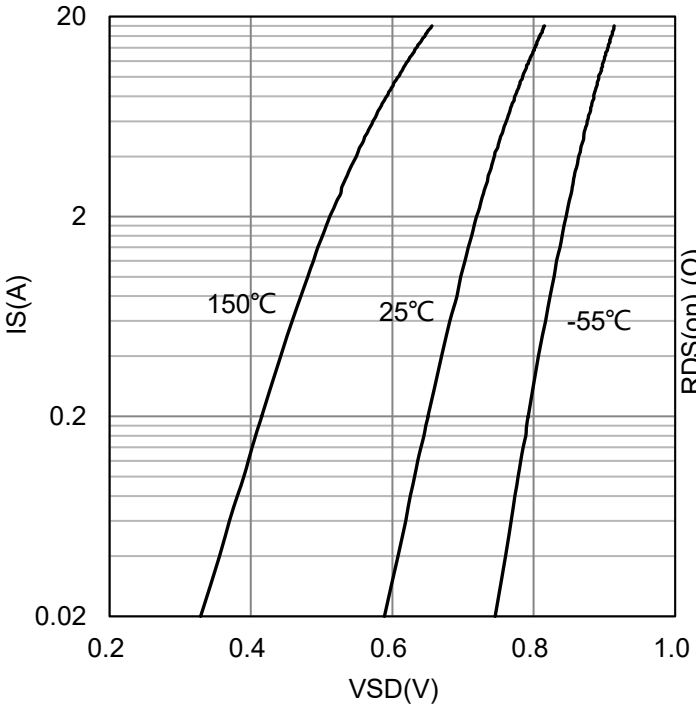
7.ELECTRICAL CHARACTERISTICS CURVES



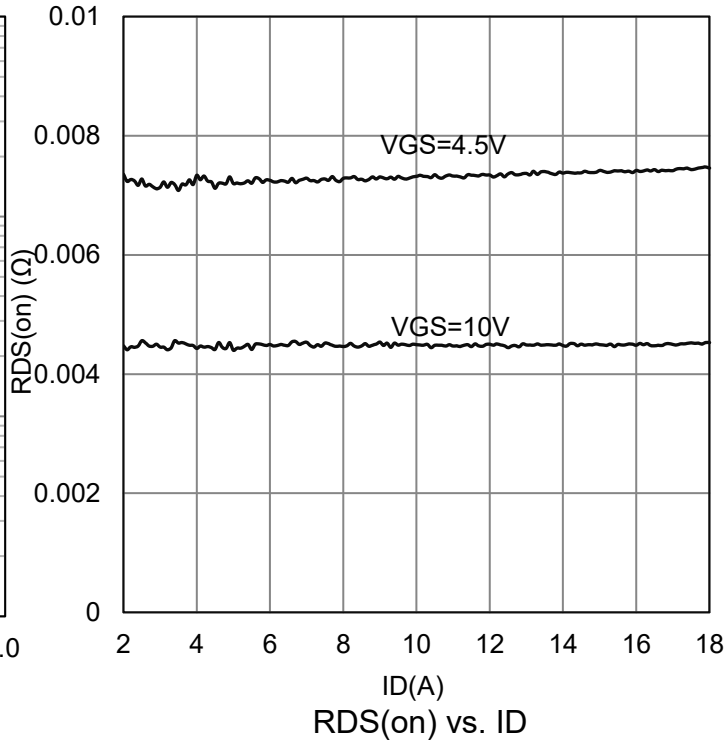
ID vs. VDS



ID vs. VGS

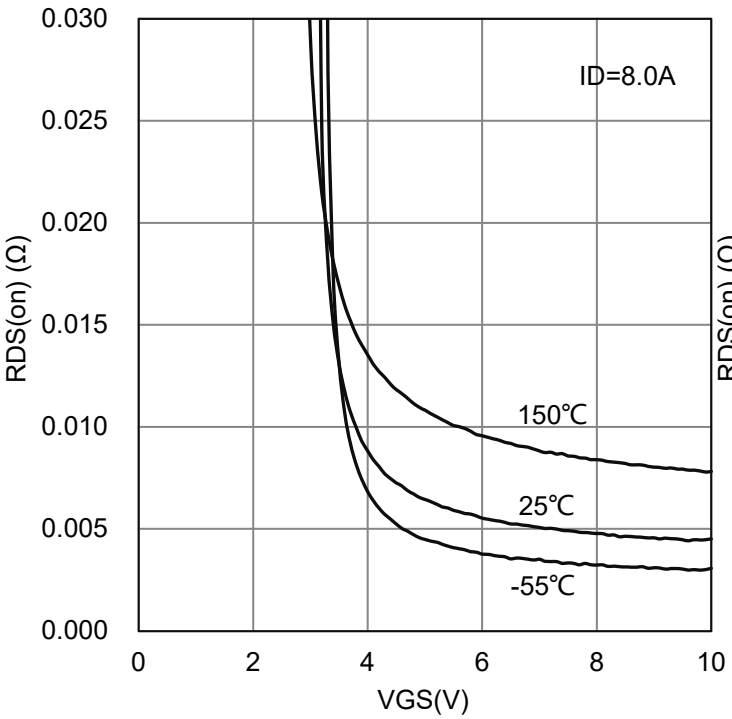


IS vs. VSD

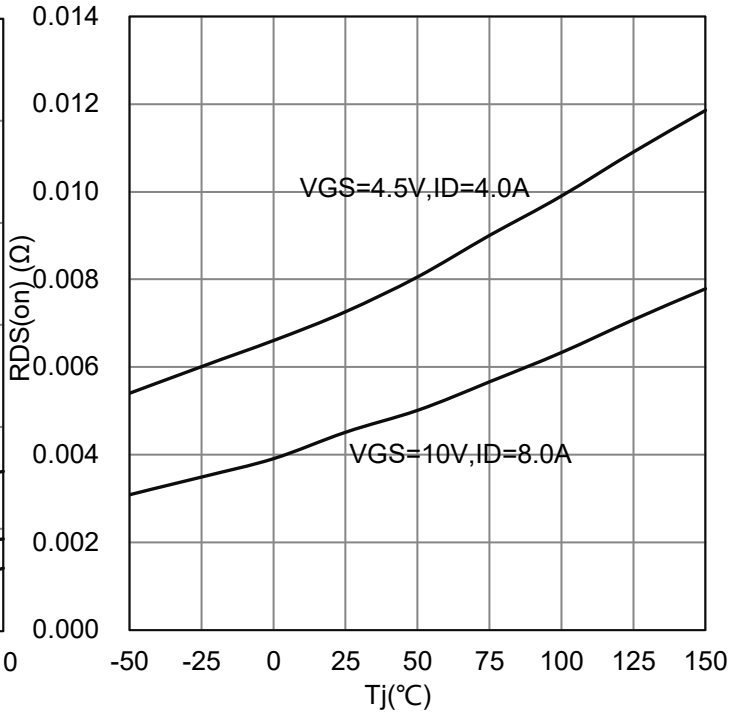


RDS(on) vs. ID

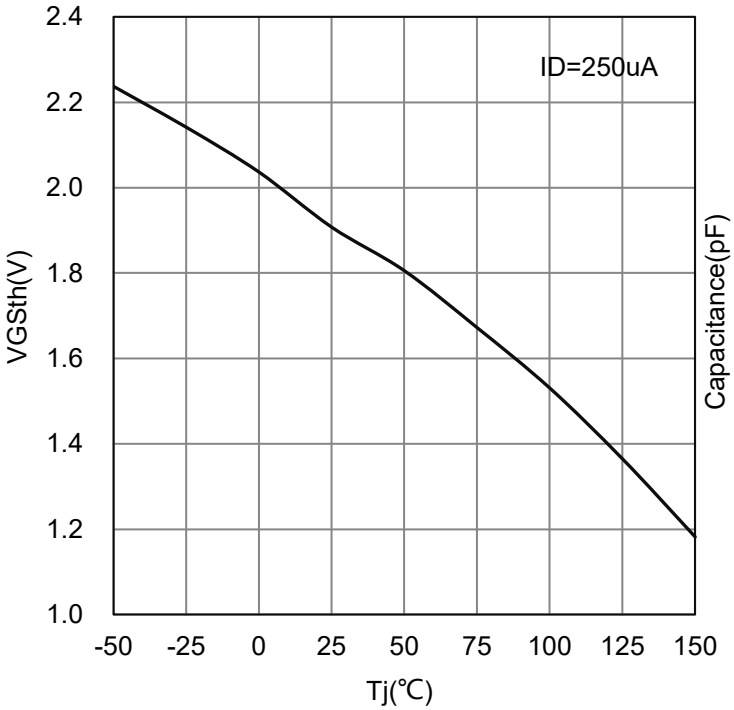
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



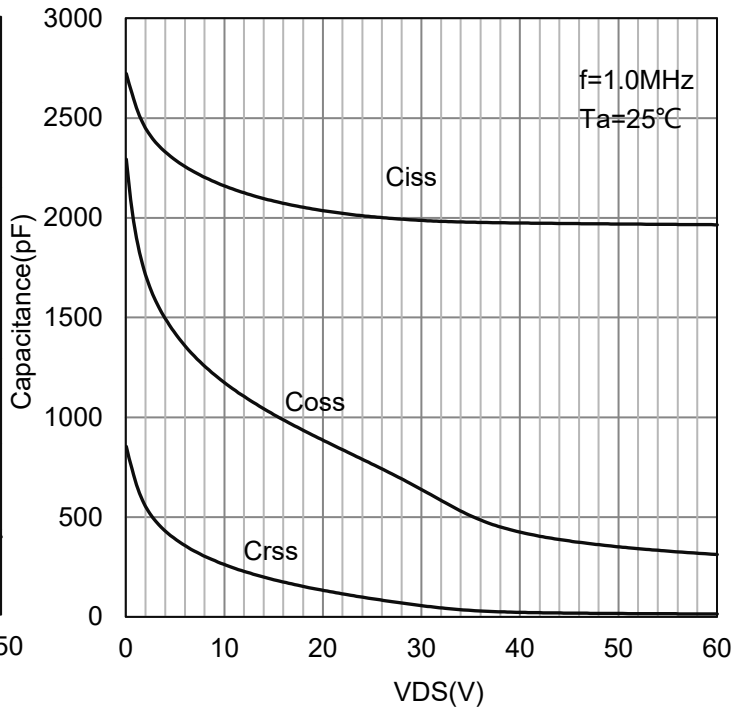
RDS(on) vs. VGS



RDS(on) vs. Tj

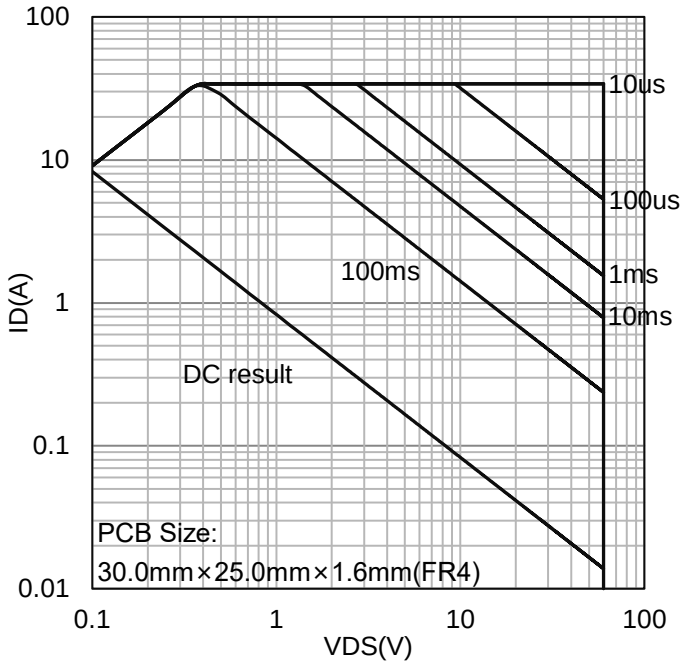


VGSth vs. Tj

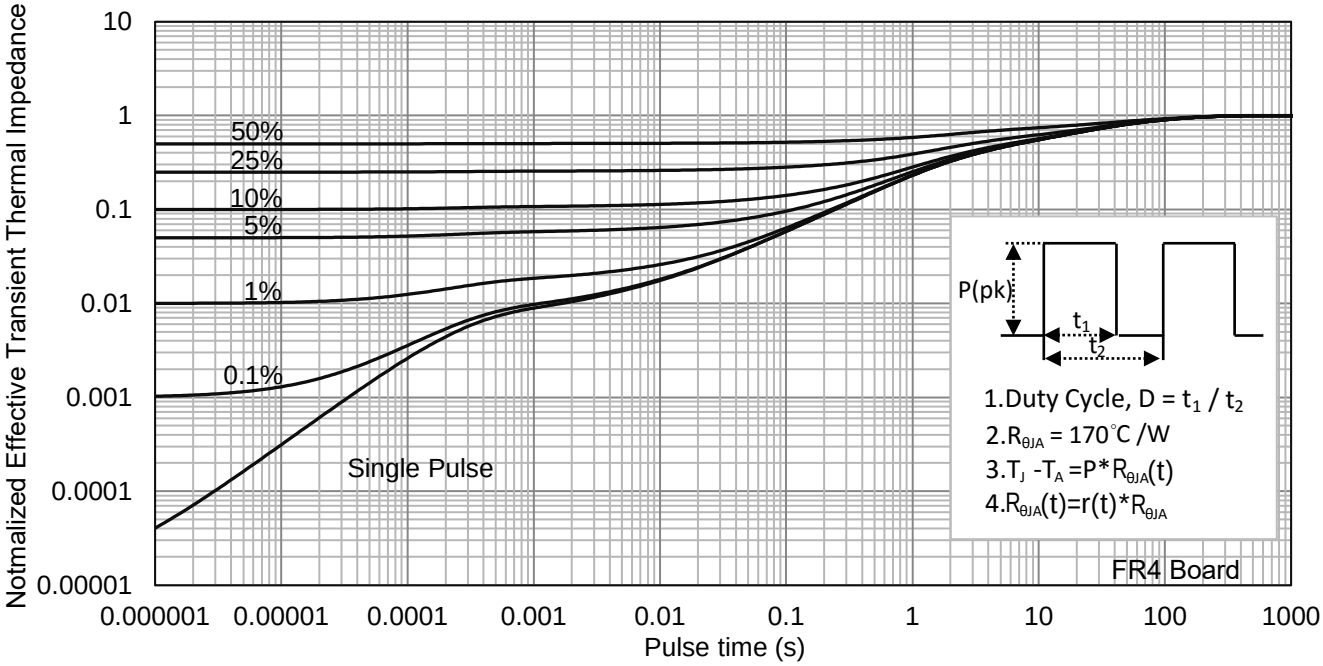


Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

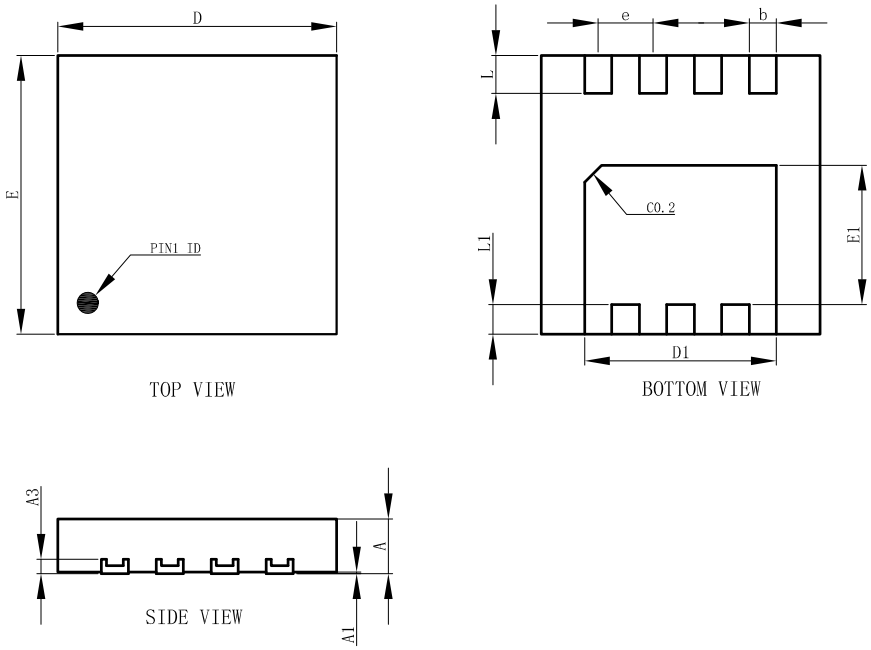


Safe Operating Area



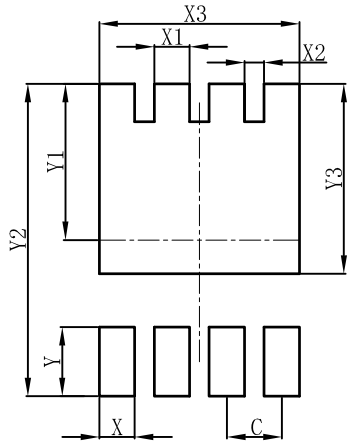
Thermal Response

8.OUTLINE AND DIMENSIONS



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



DFN3333-8A	
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