

**DESCRIPTION**

The NUP3115UP is available in DFN6(1.6x1.6) package.

Applications

- USB 2.0 and USB OTG
- Multimedia Card (MMC) Interfaces
- SD Card Interfaces
- MDDI Ports SIM Ports
- Keypads

Mechanical Data

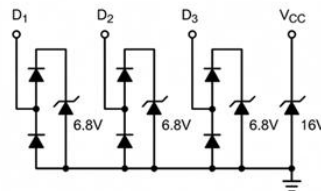
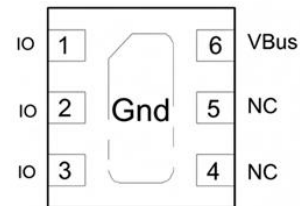
- Package: DFN1616-6
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020

ORDERING INFORMATION

Package Type	Part Number
DFN6(1.6x1.6)	NUP3115UP
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

FEATURE

- Ultra-low capacitance: 0.35pF (IO to IO)
- Ultra-low leakage: nA level
- Low operating voltage: 5.5V
- Low clamping voltage
- Protects one power line and four data lines
- Flow-through package
- Comply with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 4.5A (8/20 vs)
- RoHS Compliant

PIN DESCRIPTION

**ABSOLUTE MAXIMUM RATINGS**

T_A = 25°C, unless otherwise noted.

IO (Pins 1, 2, 3)	
P _{PK} , Peak Pulse Power (8/20μs)	100W
I _{PP} , Peak Pulse Current (8/20μs)	4.5A
V _{ESD} , ESD per IEC 61000-4-2 (Air)	±25kV
V _{ESD} , ESD per IEC 61000-4-2 (Contact)	±20kV
VBus TVS (Pins 6)	
P _{PK} , Peak Pulse Power (8/20μs)	150W
I _{PP} , Peak Pulse Current (8/20μs)	7A
V _{ESD} , ESD per IEC 61000-4-2 (Air)	±30kV
V _{ESD} , ESD per IEC 61000-4-2 (Contact)	±30kV
T _J , Operating Temperature Range	-55°C~+125°C
T _{STG} , Storage Temperature Range	-55°C~+150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.



ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise noted.

IO (Pins 1, 2, 3)

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Reverse Working Voltage	V _{RWM}	Any I/O pin to ground	-	-	5.50	V
Breakdown Voltage	V _{BR}	I _T = 1mA, any I/O pin to ground	6.40	6.80	-	V
Reverse Leakage Current	I _R	V _{RWM} = 5.5V, any I/O pin to ground	-	-	0.1	μA
Clamping Voltage	V _C	I _{PP} = 1A (8 x 20μs pulse), any I/O pin to ground	-	-	10	V
		I _{PP} = 4.5A (8 x 20μs pulse), any I/O pin to ground	-	-	16	
Junction Capacitance	C _j	V _R = 0V, f = 1MHz, any I/O pin to ground	-	0.70	1.2	pF
		V _R = 0V, f = 1MHz, between I/O pins	-	0.35	0.60	

VBus TVS (Pins 6)

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Reverse Working Voltage	V _{RWM}	Any I/O pin to ground	-	-	12	V
Breakdown Voltage	V _{BR}	I _T = 1mA, any I/O pin to ground	15	16	-	V
Reverse Leakage Current	I _R	V _{RWM} = 12V, any I/O pin to ground	-	-	0.1	μA
Clamping Voltage	V _C	I _{PP} = 1A (8 x 20μs pulse), any I/O pin to ground	-	-	10	V
		I _{PP} = 7A (8 x 20μs pulse), any I/O pin to ground	-	20	30	
Junction Capacitance	C _j	V _R = 0V, f = 1MHz, any I/O pin to ground	-	-	100	pF



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. 8/20 μ s Pulse Waveform

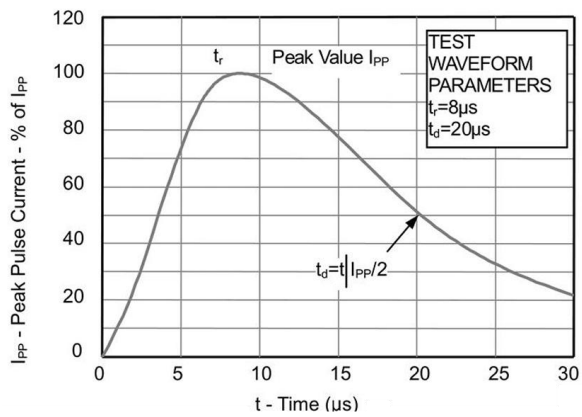


Fig 2. ESD Pulse Waveform (according to IEC 61000-4-2)

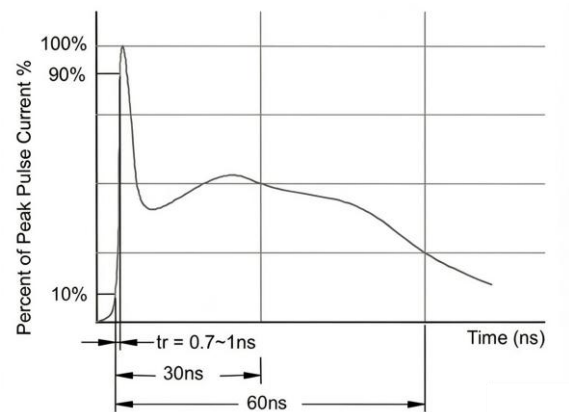
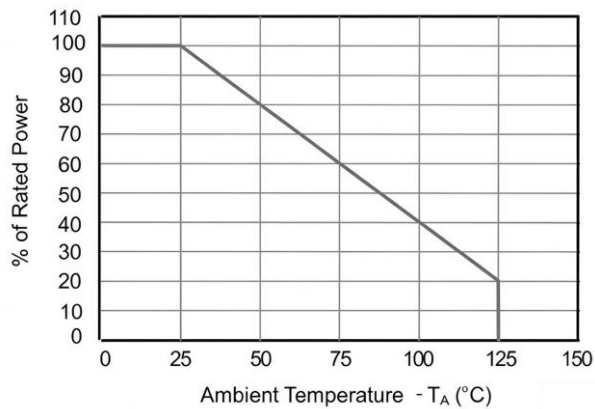


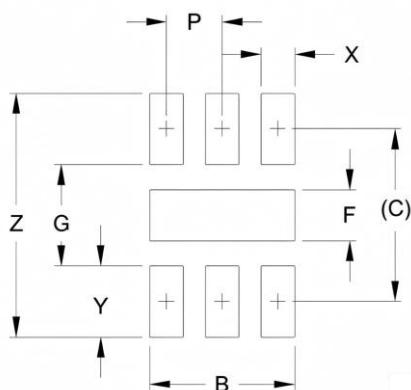
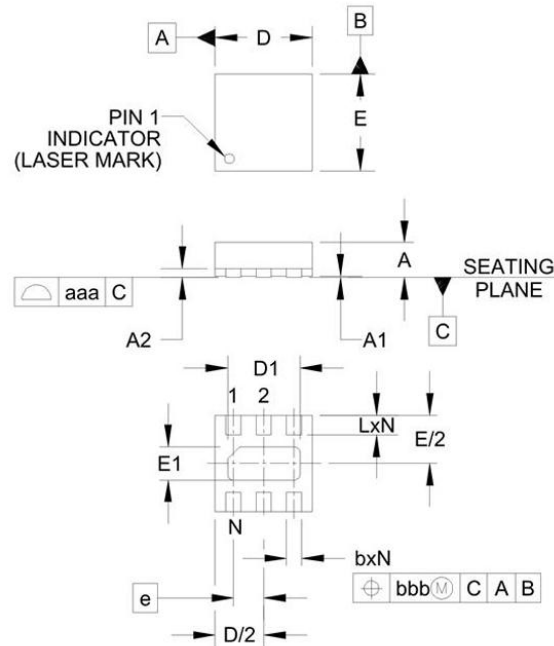
Fig 3. Power Derating Curve





PACKAGE INFORMATION

Dimension in DFN6(1.6x1.6) Package (Unit: mm)



Land Pattern

DIM	MILLIMETERS	
	MIN	MAX
A	0.500	0.650
A1	0.000	0.050
A2	0.150	
aaa	0.090	
B	1.300	
b	0.200	0.300
bbb	0.090	
C	1.520	
D	1.500	1.700
D1	1.050	1.300
E	1.500	1.700
E1	0.400	0.650
e	0.500 BSC.	
L	0.250	0.400
N	6.000	
P	0.500	
F	0.450	
G	0.890	
X	0.300	
Y	0.630	
Z	2.150	



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