

NUF4105FCT1

4 Channel EMI Pi-Filter Array with ESD Protection +4 ESD Diodes

This device is a 4 channel EMI filter array for data lines. Greater than -40 dB attenuation is obtained at frequencies from 800 MHz to 2.2 GHz. It also offers ESD protection - clamping transients from static discharges to protect delicate data line circuitry.

Features

- EMI Filtering and ESD Protection for Data Lines
- Integration of 26 Discretes Offers Cost and Space Savings
- Exceeds IEC61000-4-2 (Level 4) Specifications
- Low Profile Flip Chip Packaging
- MSL 1

Typical Applications

- EMI Filtering and ESD Protection for Data Lines
- Cell Phones
- Handheld Portables
- Notebook Computers
- MP3 Players

MAXIMUM RATINGS (T_A = 25°C)

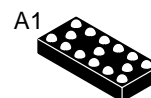
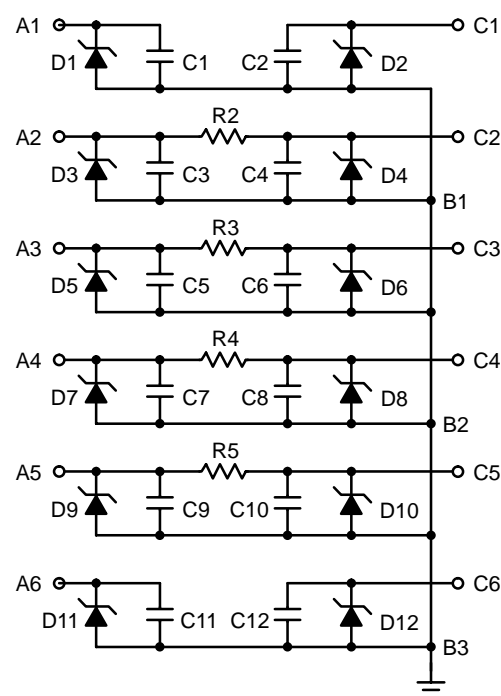
Rating	Symbol	Value	Unit
ESD Discharge IEC61000-4-2, - Air Discharge - Contact Discharge Human Body Model	V _{PP}	30 30 16	kV
DC Power per Resistor	P _R	100	mW
DC Power per Package	P _T	400	mW
Junction Temperature	T _J	150	°C
Operating Temperature Range	T _{op}	-40 to +85	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C



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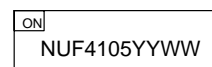
<http://onsemi.com>

CIRCUIT DESCRIPTION



**FLIP CHIP
CASE 499D
PLASTIC**

DEVICE MARKING



NUF4105= Specific Device Code
YY = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping
NUF4105FCT1	Flip Chip	3000/Tape & Reel

NUF4105FCT1

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Characteristic	Min	Typ	Max	Unit
V_{BR}	$I_Z = 10\text{ mA}$	6.0	7.0	8.0	V
I_R	$V_{RM} = 3.3\text{ V per line}$	-	-	0.1	μA
$R_{I/O}$	$I_R = 20\text{ mA}$	80	100	120	Ω
C_{line}	$V_R = 2.5\text{ V}, f = 1\text{ MHz}$ (Note 1)	-	53	-	pF

1. Measured from Input/Output Pins to Ground

TYPICAL PERFORMANCE CURVES

($T_A = 25^\circ\text{C}$ unless otherwise specified)

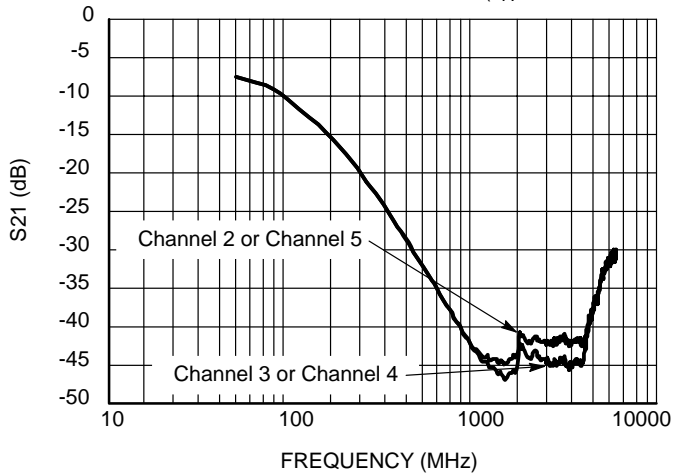


Figure 1. Insertion Loss Curve
(S21 Measurement)

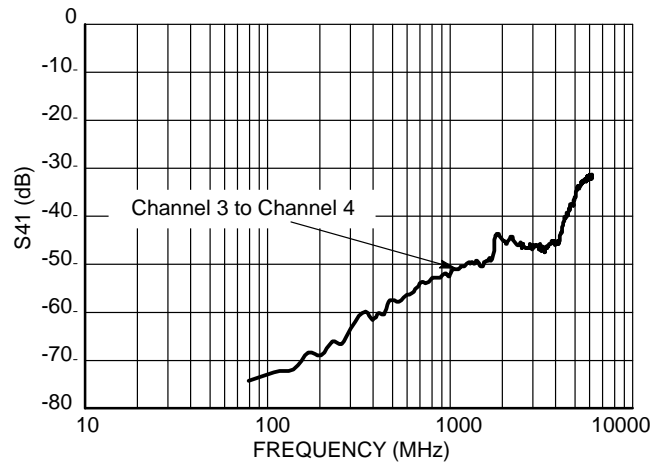


Figure 2. Analog Crosstalk Curve
(S41 Measurement)

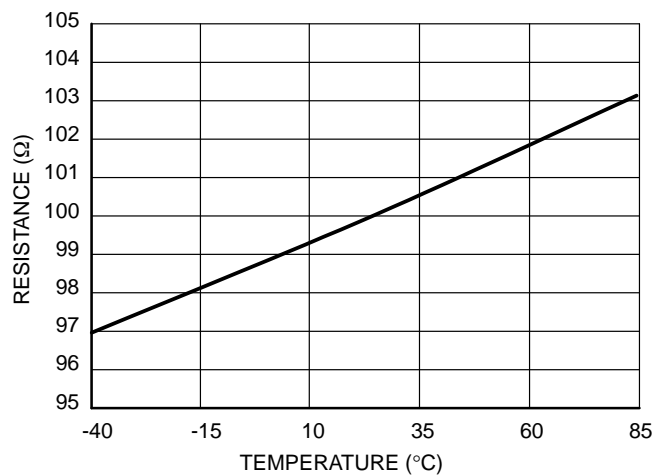


Figure 3. Resistance Over Temperature

NUF4105FCT1

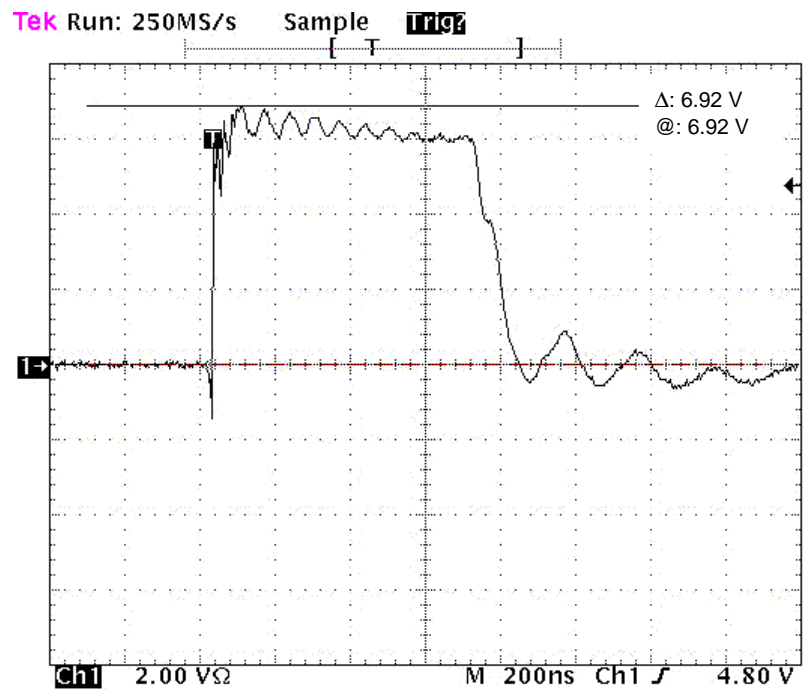


Figure 4. ESD Scope Trace Human Body Model (-8 kV)

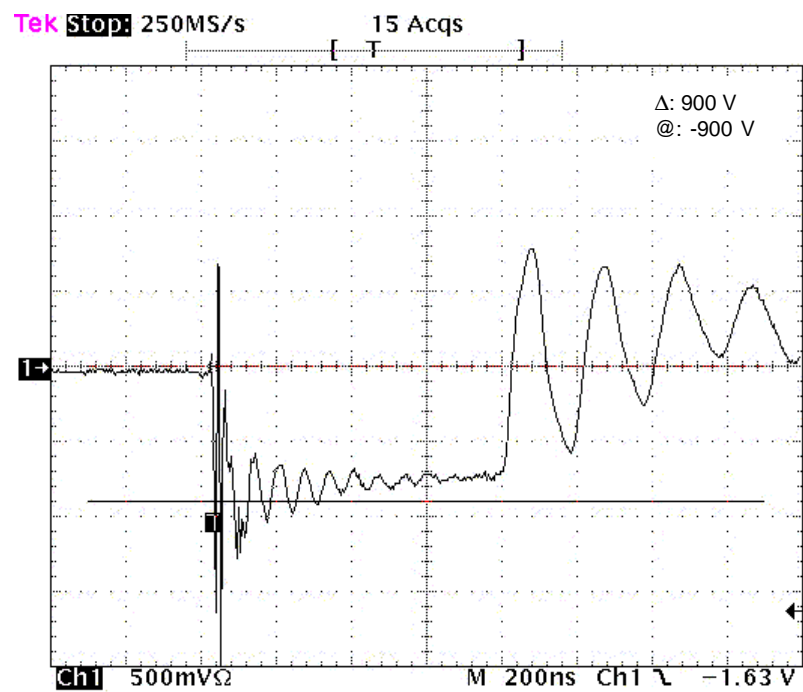


Figure 5. ESD Scope Trace Human Body Model (+8 kV)

NUF4105FCT1

Printed Circuit Board Recommendations

Parameter	500 μm Pitch 300 μm Solder Ball
PCB Pad Size	250 μm +25 -0
Pad Shape	Round
Pad Type	NSMD
Solder Mask Opening	350 μm \pm 25
Solder Stencil Thickness	125 μm
Stencil Aperture	250 x 250 μm sq.
Solder Flux Ratio	50/50
Solder Paste Type	No Clean Type 3 or Finer
Trace Finish	OSP Cu
Trace Width	150 μm Max

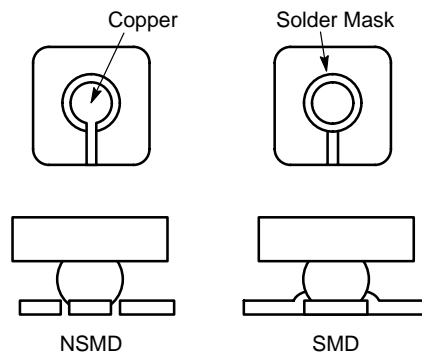


Figure 6. Solder Mask versus Non-Solder Mask Definition

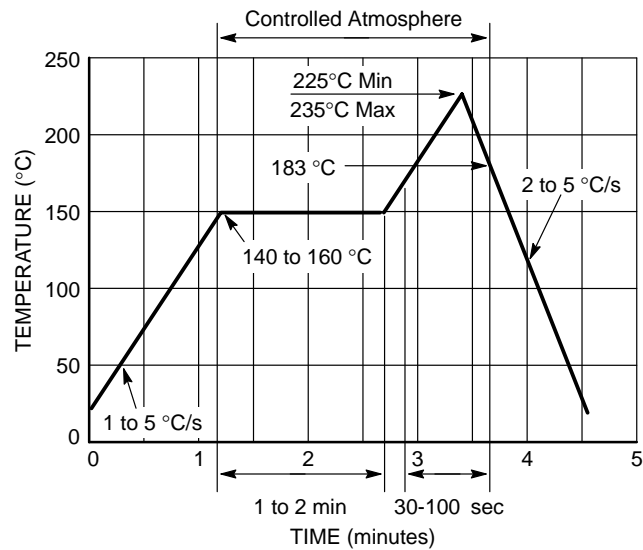


Figure 7. Solder Reflow Profile

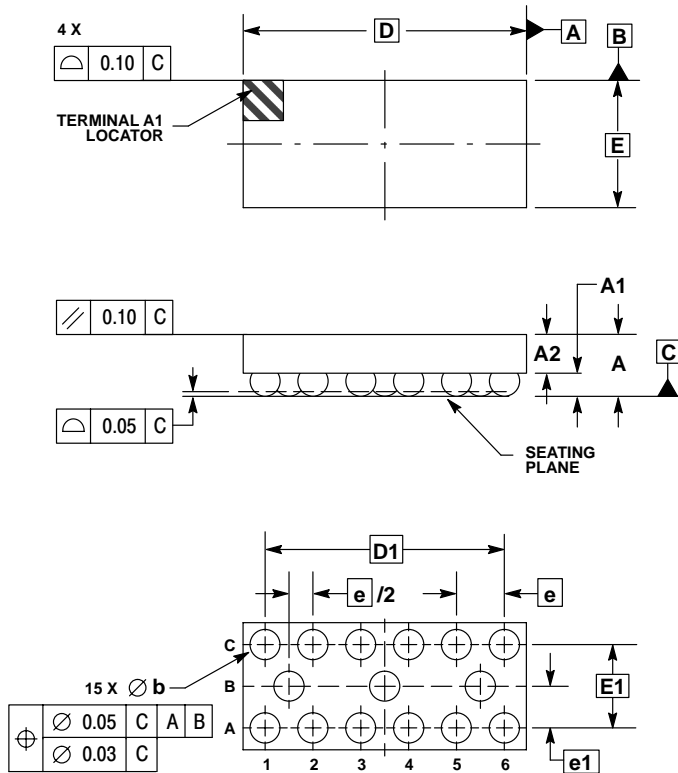
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PACKAGE DIMENSIONS

15 PIN FLIPCHIP CSP

CASE 499D-01


ISSUE O



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETER.
3. COPLANARITY APPLIES TO SPHERICAL CROWNS OF SOLDER BALLS.

DIM	MILLIMETERS	
	MIN	MAX
A	---	0.700
A1	0.210	0.270
A2	0.380	0.430
D	2.960	BSC
E	1.330	BSC
b	0.290	0.340
e	0.500	BSC
e1	0.435	BSC
D1	2.500	BSC
E1	0.870	BSC

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