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

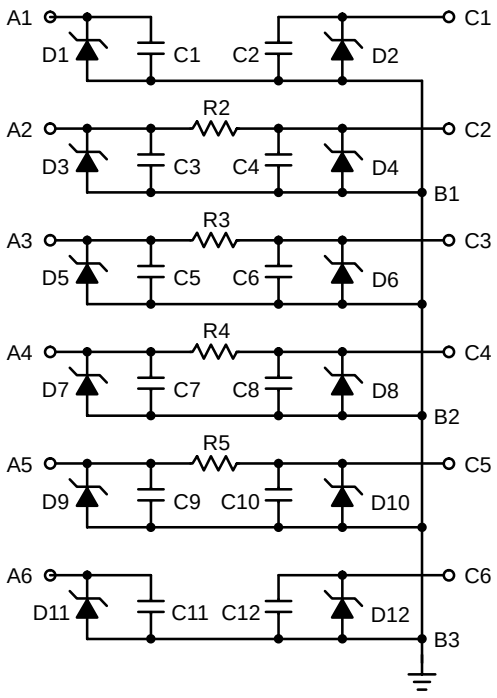
MAXIMUM RATINGS (T_A = 25°C)

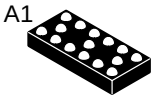
Rating	Symbol	Value	Unit
ESD Discharge IEC61000-4-2, - Air Discharge - Contact Discharge Human Body Model	V_{PP}	 30 30 16	kV
DC Power per Resistor	P_R	100	mW
DC Power per Package	P_T	400	mW
Junction Temperature	T_J	150	°C
Operating Temperature Range	T_{op}	-40 to +85	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

ON Semiconductor®

http://onsemi.com

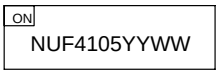
CIRCUIT DESCRIPTION





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

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

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

1. Measured from Input/Output Pins to Ground

TYPICAL PERFORMANCE CURVES

(T_A = 25°C unless otherwise specified)

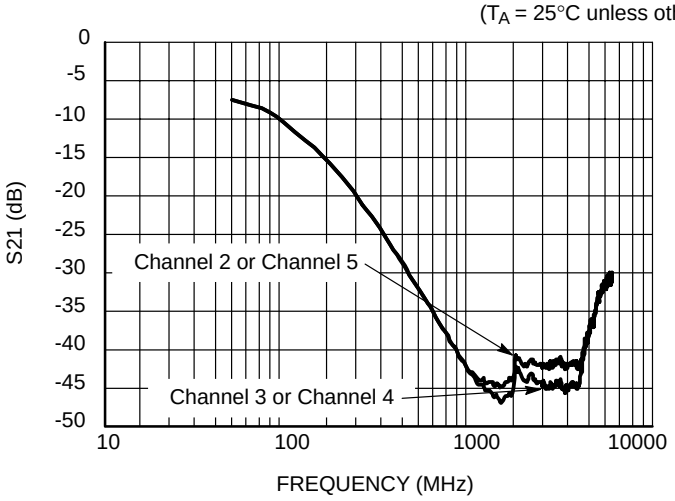


Figure 1. Insertion Loss Curve (S21 Measurement)

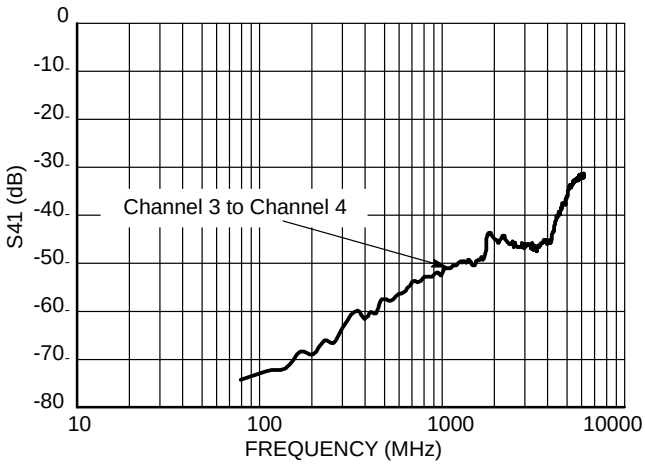


Figure 2. Analog Crosstalk Curve (S41 Measurement)

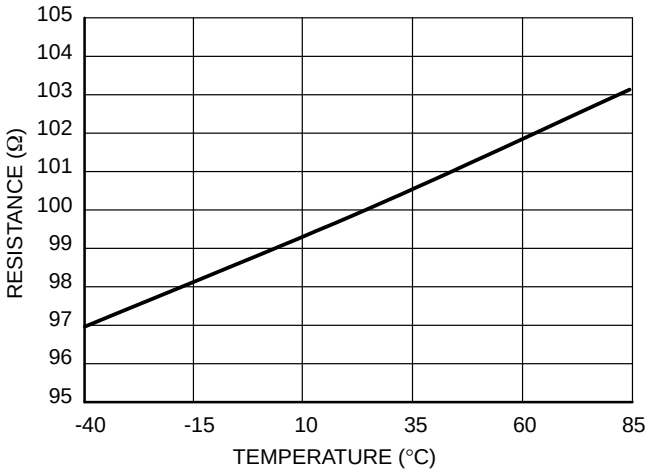


Figure 3. Resistance Over Temperature

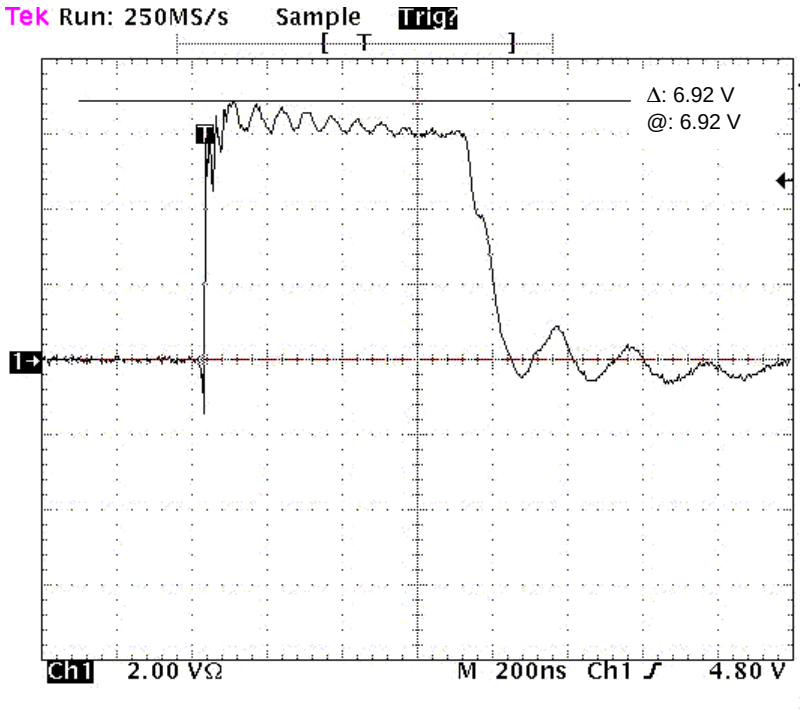


Figure 4. ESD Scope Trace Human Body Model (-8 kV)

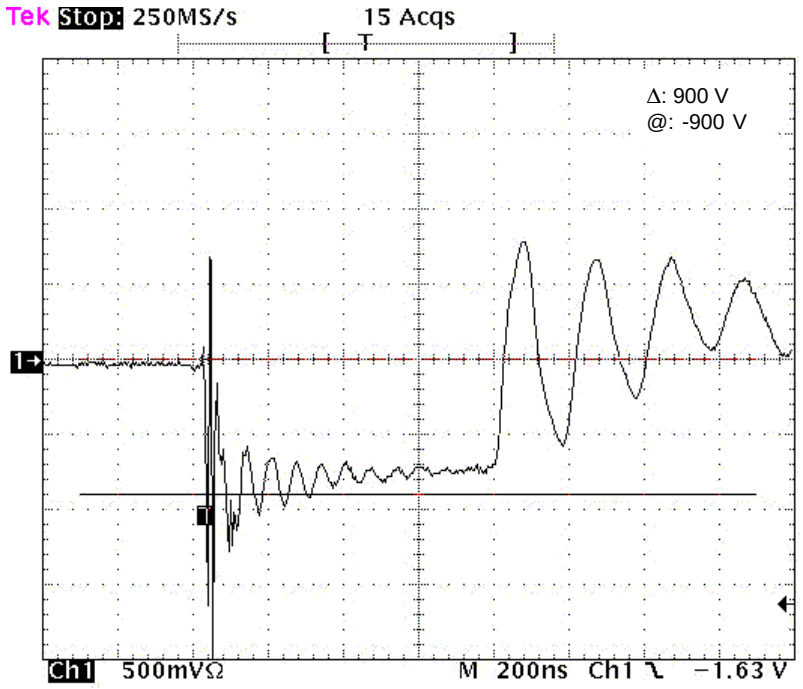


Figure 5. ESD Scope Trace Human Body Model (+8 kV)

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 ±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

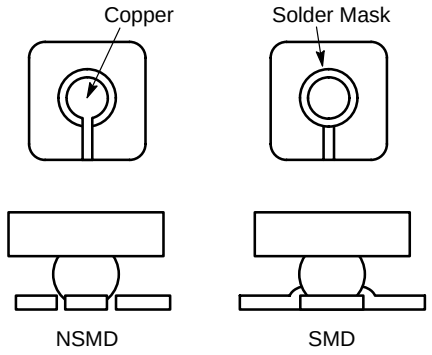


Figure 6. Solder Mask versus Non-Solder Mask Definition

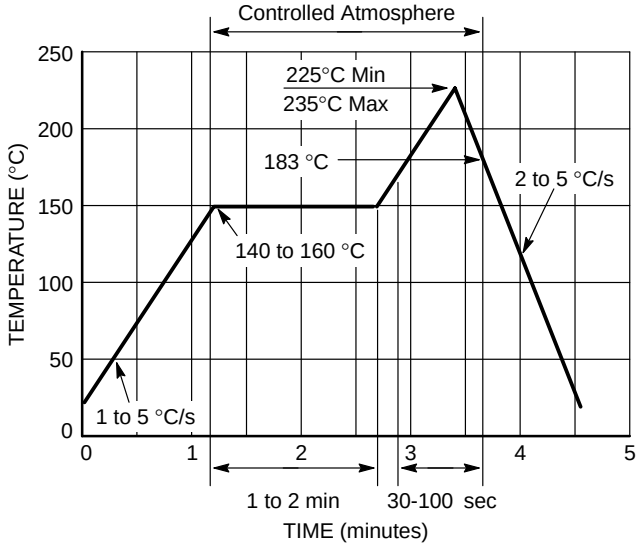
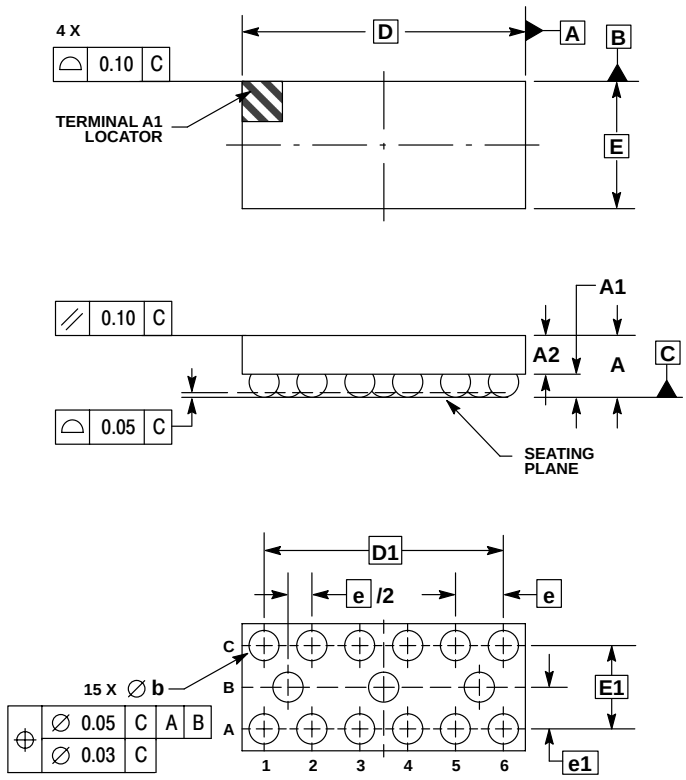


Figure 7. Solder Reflow Profile

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.

	MILLIMETERS	
DIM	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	

PUBLICATION ORDERING INFORMATION

Literature Fulfillment:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
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