

NUF6106FCT1

6 Channel EMI Pi-Filter Array with ESD Protection

This device is a 6 channel EMI filter array for data lines. Greater than -20 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 30 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)

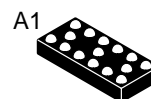
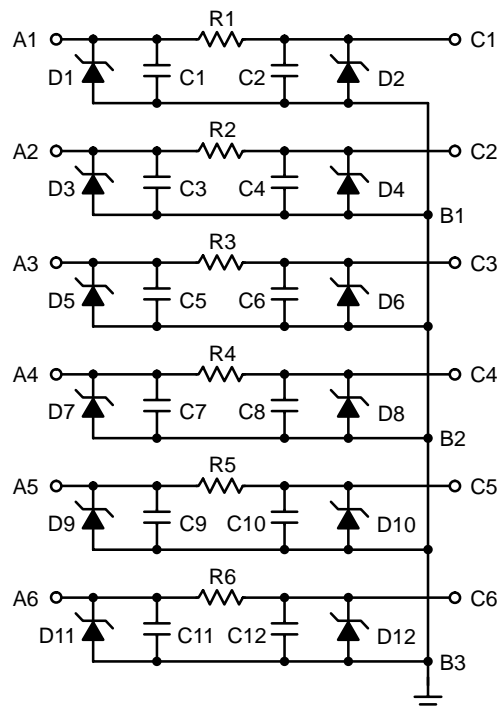
Rating	Symbol	Value	Unit
ESD Discharge IEC61000-4-2, – Contact Discharge Human Body Model Machine Model	V _{PP}	8.0 16 1.6	kV
DC Power per Resistor	P _R	100	mW
DC Power per Package	P _T	600	mW
Junction Temperature	T _J	150	°C
Operating Temperature Range	T _{Op}	-40 to +85	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C



ON Semiconductor®

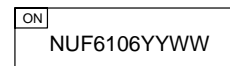
<http://onsemi.com>

CIRCUIT DESCRIPTION



FLIP-CHIP
CASE 499D
PLASTIC

DEVICE MARKING



NUF6106= Specific Device Code
YY = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping†
NUF6106FCT1	Flip-Chip	3000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

NUF6106FCT1

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}	$V_R = 2.5 \text{ V}, f = 1 \text{ MHz (Note 1)}$	–	21	23	pF

1. Measured from Input/Output Pins to Ground

TYPICAL PERFORMANCE CURVES

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

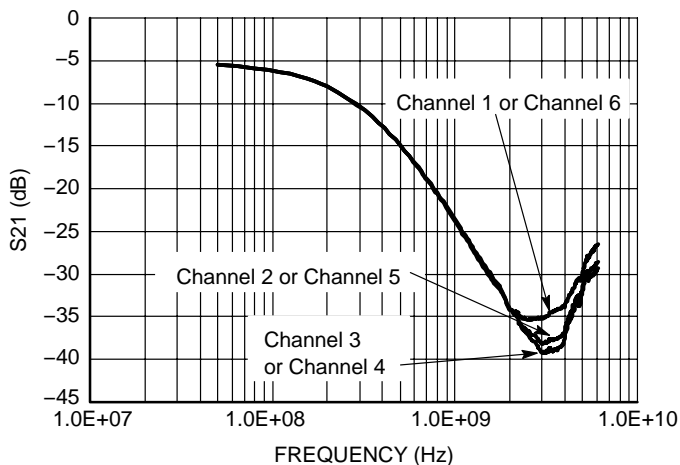


Figure 1. Insertion Loss Characteristics (S21 Measurement)

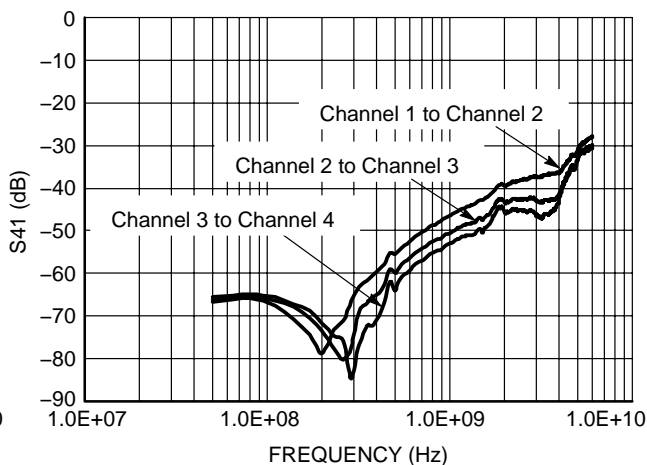


Figure 2. Analog Crosstalk Curve (S41 Measurement)

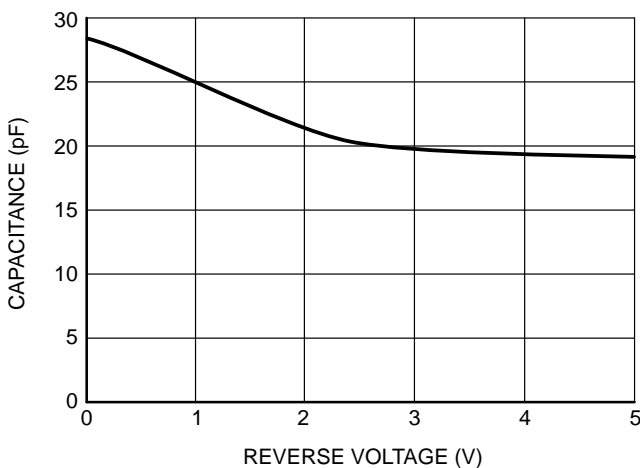


Figure 3. Typical Line Capacitance vs. Reverse Bias Voltage

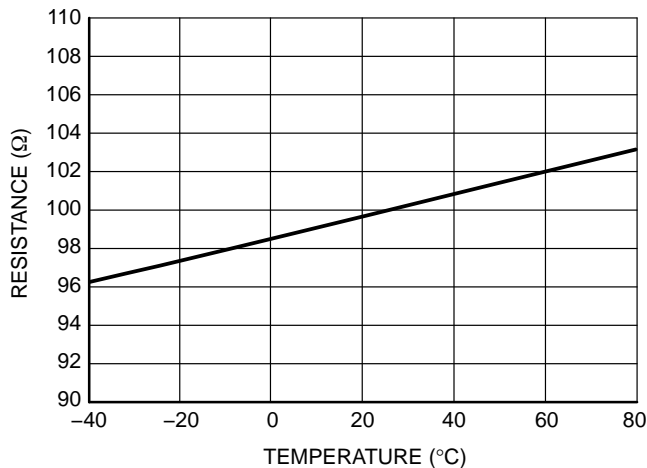


Figure 4. Typical Resistance Over Temperature

NUF6106FCT1

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

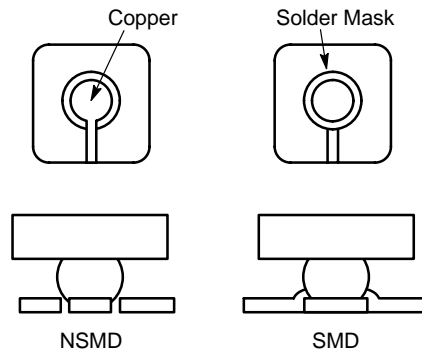


Figure 5. Solder Mask versus Non-Solder Mask Definition

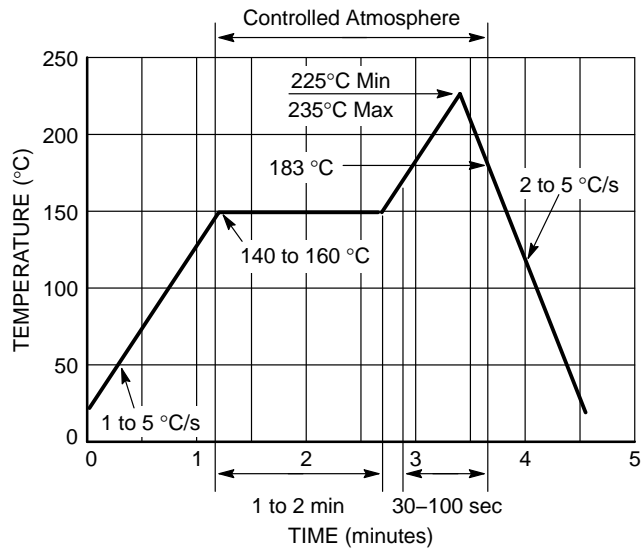
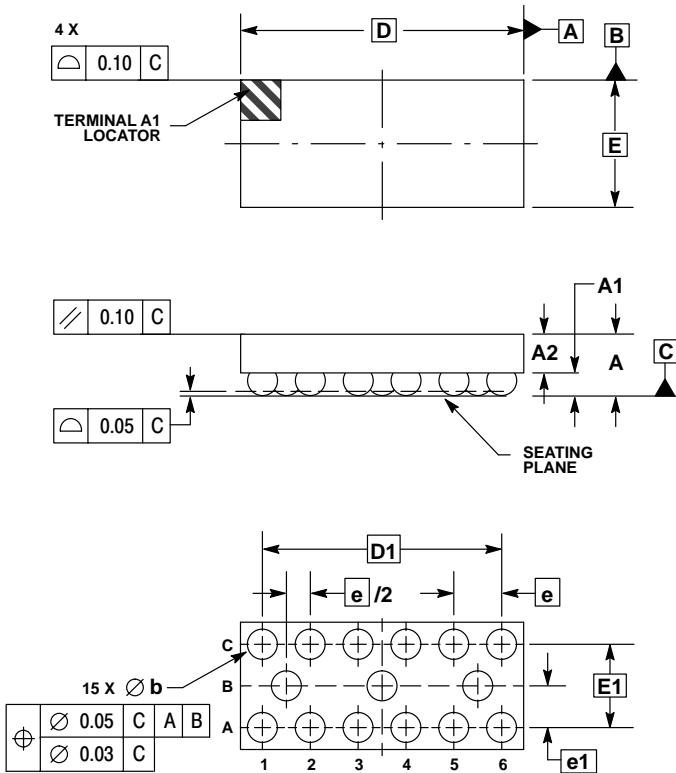


Figure 6. Solder Reflow Profile

NUF6106FCT1


PACKAGE DIMENSIONS

15 PIN FLIP-CHIP 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	

ON Semiconductor and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free USA/Canada

Japan: ON Semiconductor, Japan Customer Focus Center
2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051
Phone: 81-3-5773-3850

ON Semiconductor Website: <http://onsemi.com>

Order Literature: <http://www.onsemi.com/litorder>

For additional information, please contact your local Sales Representative.