



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# NUF6107MN

## 4 Channel Data Line EMI Filter with 2 Channel USB Filter and ESD Protection

This device is a four-channel EMI filter array for data lines. Greater than -35 dB attenuation is obtained at frequencies from 800 MHz to 2.2 GHz. It also offers USB filtering circuitry with speed detection. This includes the inline resistors for impedance matching and EMI filtering. ESD protection is provided across all capacitors.

### Features

- EMI Filtering and ESD Protection for Data Lines
- USB 1.1 and 2.0 Full Speed Filtering Provided
- Integration of 26 Discrettes Offers Cost and Space Savings
- Low Profile DFN, Packaging, 3.0 x 1.35 mm
- MSL 1
- Compliant with IEC61000-4-2 (Level 4)  
> 8 kV Contact on all outputs and data lines
- This is a Pb-Free Device

### Typical Applications

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

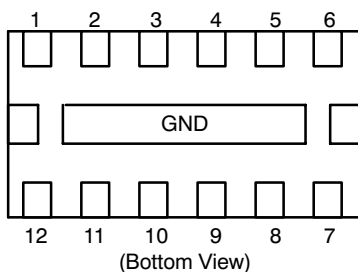
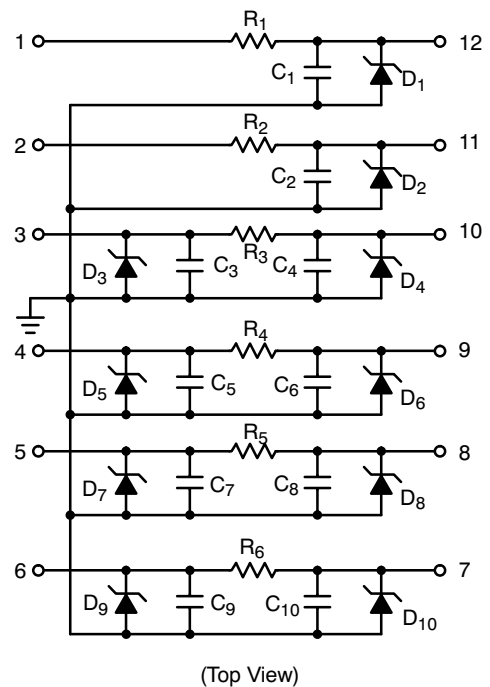


Figure 1. Pin Connections



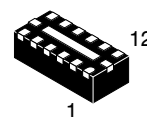
ON Semiconductor®

<http://onsemi.com>

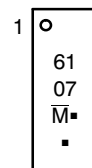


(Top View)

### MARKING DIAGRAM



DFN12  
CASE 506AD



6107= Specific Device Code

M = Month

▪ = Pb-Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

Device	Package	Shipping†
NUF6107MNTBG	DFN12 (Pb-Free)	3000 / Tape & Reel

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

# NUF6107MN

## MAXIMUM RATINGS

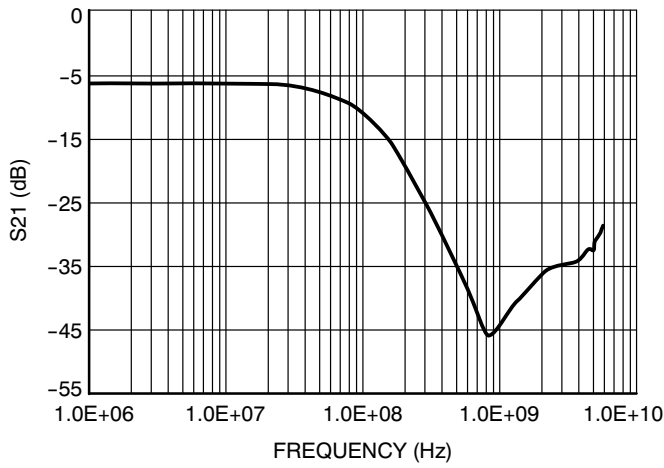
Parameter	Symbol	Value	Unit
ESD Discharge IEC61000-4-2 pins 1 to 2 pins 3 to 12	Contact Discharge $V_{PP}$	2.0 8.0	kV
Operating Temperature Range	$T_{OP}$	-40 to 85	°C
Storage Temperature Range	$T_{STG}$	-55 to 150	°C
Maximum Lead Temperature for Soldering Purposes (1.8 in from case for 10 seconds)	$T_L$	260	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

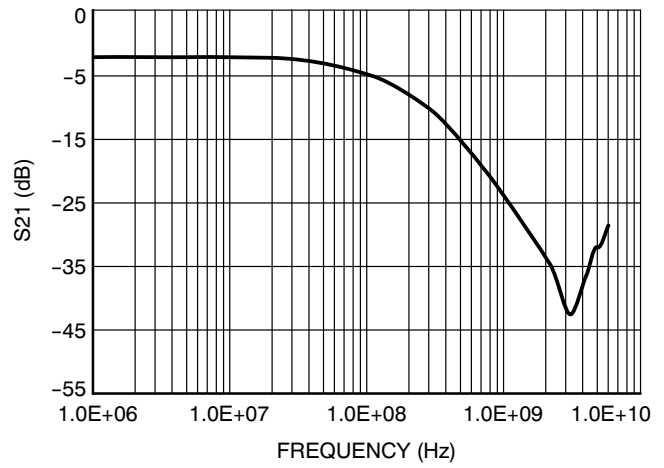
## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Maximum Reverse Working Voltage	$V_{RWM}$		-	-	5.0	V
Breakdown Voltage	$V_{BR}$	$I_R = 1.0 \text{ mA}$	6.0	6.8	8.0	V
Leakage Current	$I_R$	$V_{RWM} = 3.3 \text{ V per line}$	-	-	0.1	$\mu\text{A}$
EMI Filter Resistors	$R_3 - R_6$		80	100	120	$\Omega$
USB Resistors; Impedance Matching	$R_1, R_2$		18	22	26	$\Omega$
Diode Capacitance	$C3 - C10$	$V_R = 2.5 \text{ V}$	24	30	36	pF
Diode Capacitance	$C1, C2$	$V_R = 2.5 \text{ V}$	29	36	43	pF

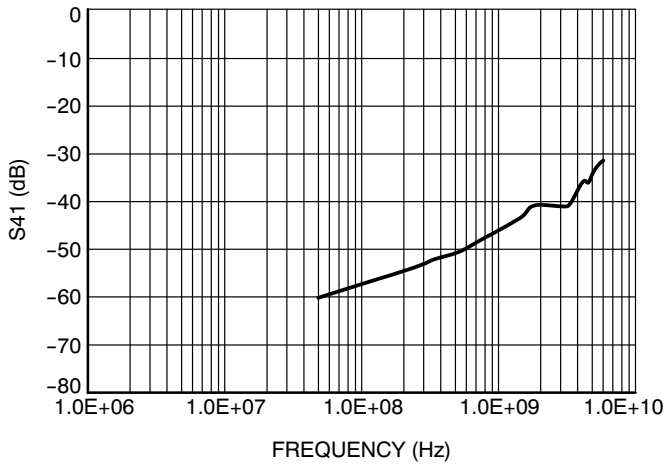
# NUF6107MN



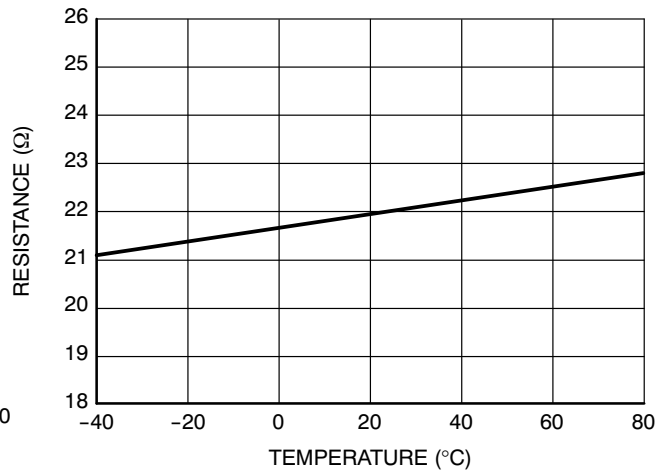
**Figure 2. Insertion Loss Characteristics on Data Lines**



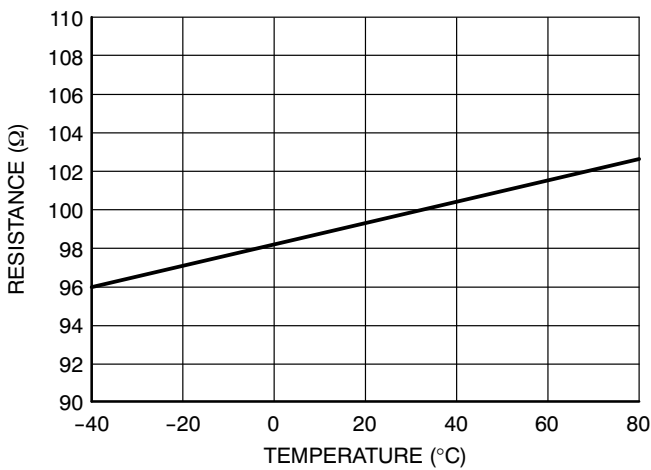
**Figure 3. Insertion Loss Characteristics on USB Lines**



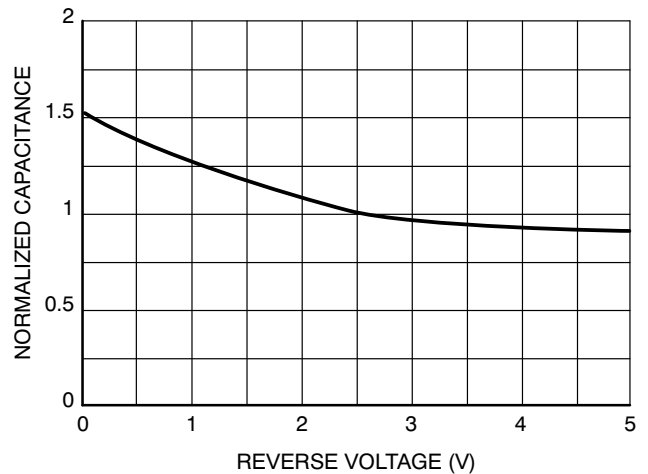
**Figure 4. Typical Analog Crosstalk**



**Figure 5. Typical Resistance over Temperature for R<sub>1</sub> and R<sub>2</sub>**



**Figure 6. Typical Resistance over Temperature for R<sub>3</sub> - R<sub>6</sub>**

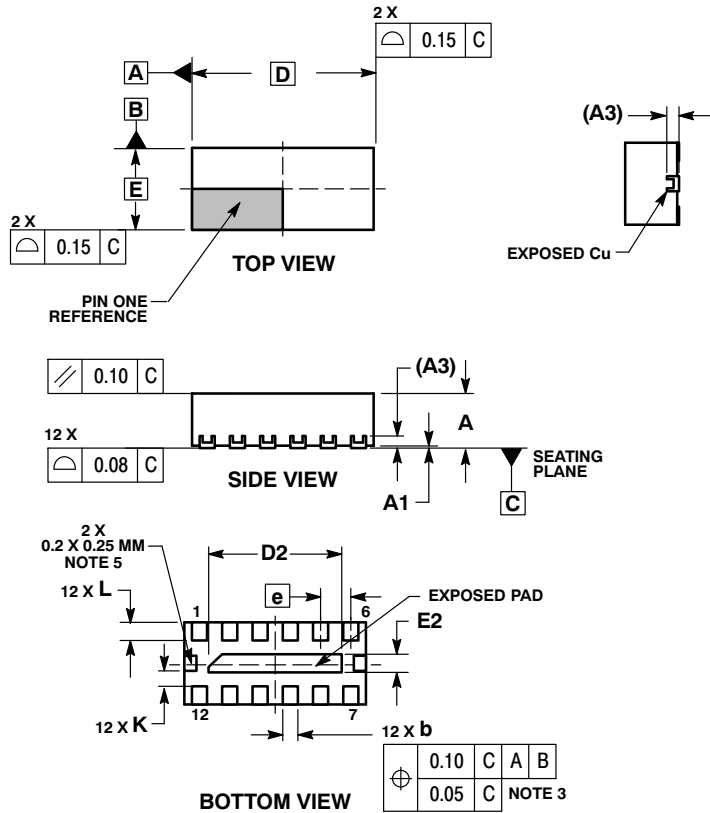


**Figure 7. Typical Capacitance vs. Reverse Biased Voltage (Normalized Capacitance, Cd @ 2.5 V)**

# NUF6107MN

## PACKAGE DIMENSIONS

DFN12 3.0x1.35, 0.5P  
CASE 506AD-01  
ISSUE H

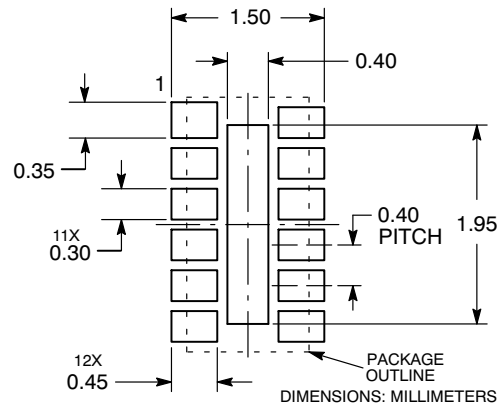


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.25 AND 0.30 MM FROM TERMINAL.
4. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.
5. EXPOSED PADS CONNECTED TO DIE FLAG, USED AS TEST CONTACTS.

MILLIMETERS		
DIM	MIN	MAX
A	0.80	1.00
A1	0.00	0.05
A3	0.20	REF
b	0.18	0.30
D	3.00 BSC	
D2	2.10	2.30
E	1.35 BSC	
E2	0.20	0.40
e	0.50 BSC	
K	0.20	---
L	0.20	0.40

**SOLDERING FOOTPRINT\***



\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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  
**Europe, Middle East and Africa Technical Support:**  
Phone: 421 33 790 2910  
**Japan Customer Focus Center**  
Phone: 81-3-5773-3850

**ON Semiconductor Website:** [www.onsemi.com](http://www.onsemi.com)  
**Order Literature:** <http://www.onsemi.com/orderlit>  
For additional information, please contact your local Sales Representative