



**THE DATASHEET OF
NUF6107MNTBG**



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

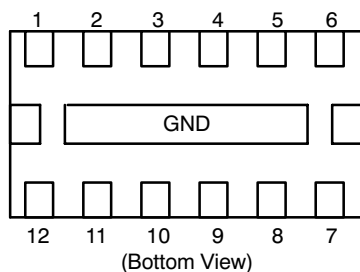
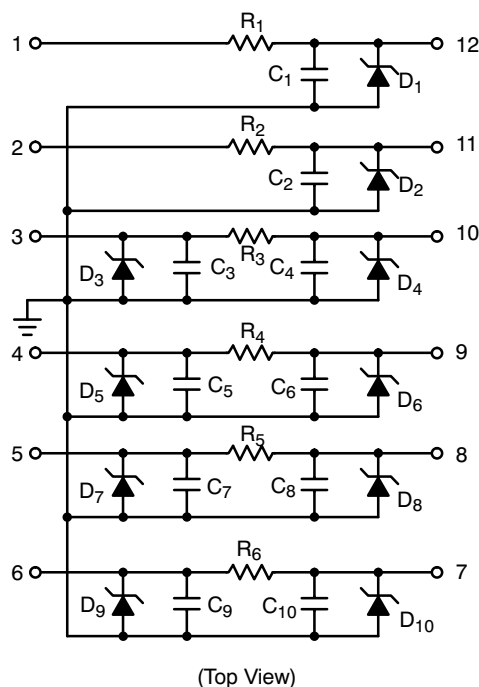


Figure 1. Pin Connections

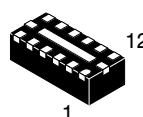


ON Semiconductor®

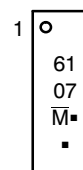
<http://onsemi.com>



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	μA
EMI Filter Resistors	$R_3 - R_6$		80	100	120	Ω
USB Resistors; Impedance Matching	R_1, R_2		18	22	26	Ω
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

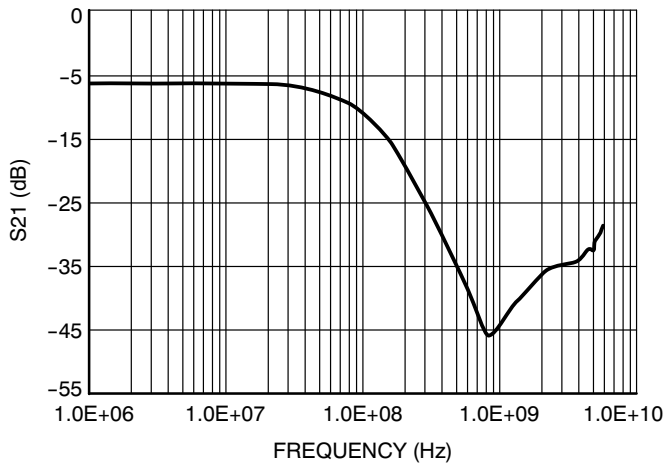


Figure 2. Insertion Loss Characteristics on Data Lines

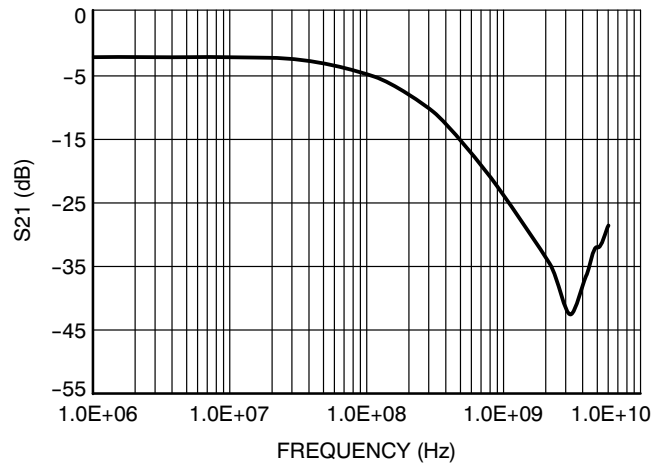


Figure 3. Insertion Loss Characteristics on USB Lines

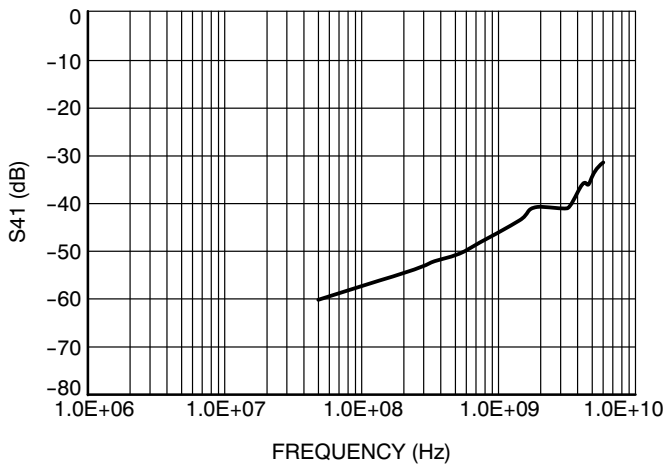


Figure 4. Typical Analog Crosstalk

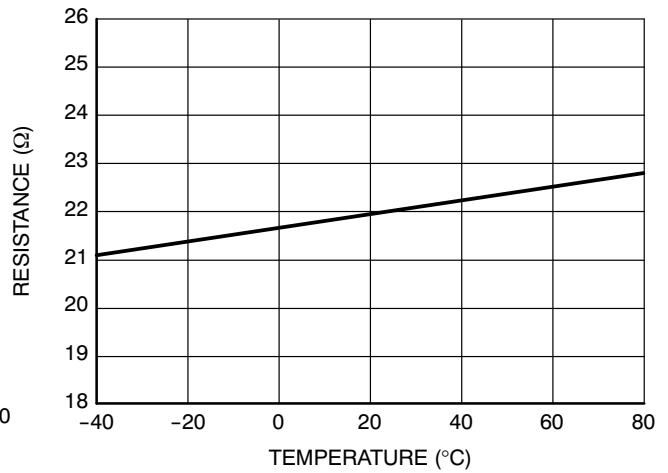


Figure 5. Typical Resistance over Temperature for R₁ and R₂

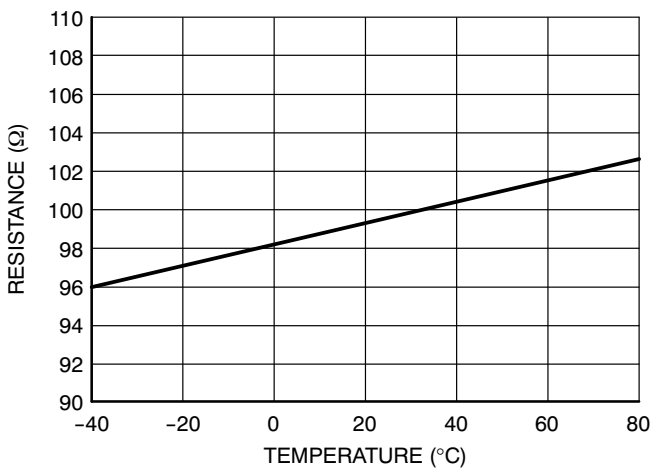


Figure 6. Typical Resistance over Temperature for R₃ - R₆

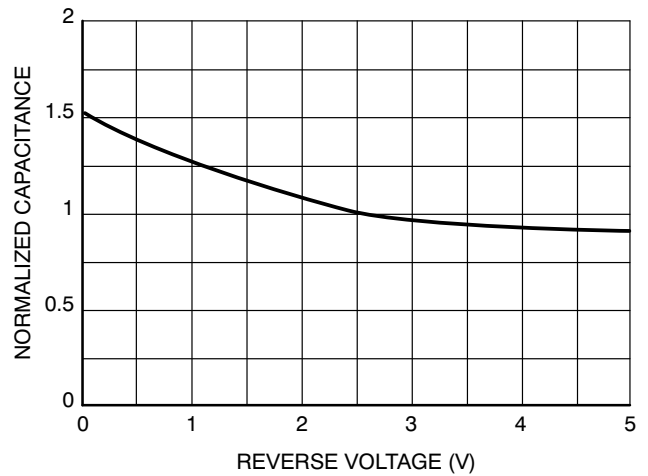
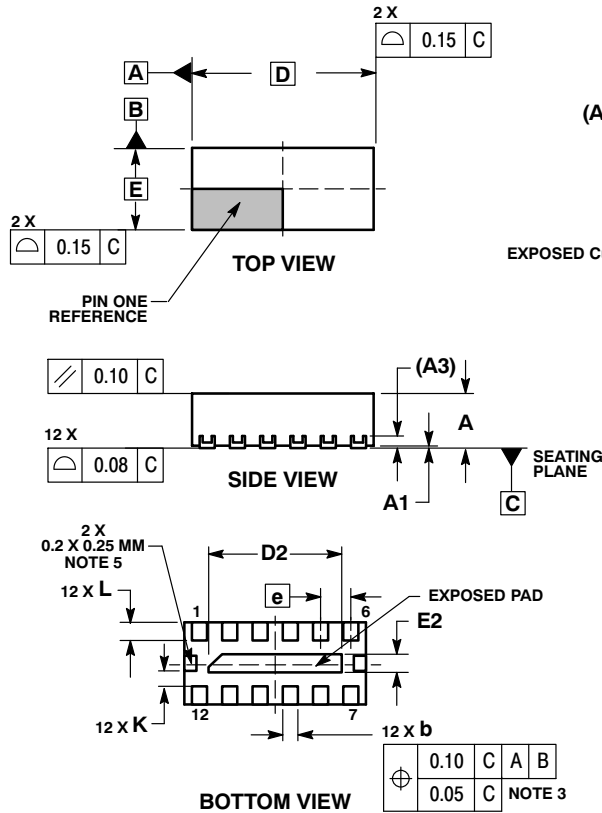


Figure 7. Typical Capacitance vs. Reverse Biased Voltage (Normalized Capacitance, Cd @ 2.5 V)

NUF6107MN

PACKAGE DIMENSIONS

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

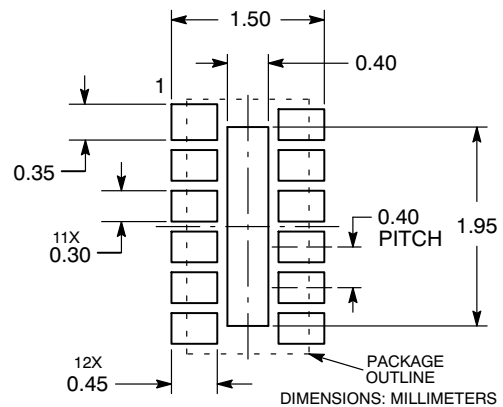


NOTES:

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
Order Literature: <http://www.onsemi.com/orderlit>
For additional information, please contact your local Sales Representative

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View NUF6107MNTBG on WIN SOURCE](#)

 [ON Semiconductor](#) Information

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management