NUF4401MN

4 Line EMI Filter with ESD Protection

NUF4401MN is a 4 line EMI filter array for wireless applications. It offers greater than −35 dB attenuation at frequencies from 900 MHz to 2.4 GHz. This device also offers ESD protection−clamping transients from static discharges and ESD protection is provided across all capacitors.

Features

- Provides EMI Filtering and ESD Protection
- Integration of 20 Discretes
- Compliance with IEC61000−4−2 (Level 4)
  - 10 kV (Contact)
  - 15 kV (Air)
- DFN8, 2x2 mm Package
- Moisture Sensitivity Level 1
- ESD Ratings: Machine Model = C
  - Human Body Model = 3B
- This is a Pb−Free Device*

Benefits

- Reduces EMI/RFI Emmisions on a Data Line
- Integrated Solution Offers Cost and Space Savings
- Reduces Parasitic Inductances Which Offer a More “Ideal” Low Pass Filter Response
- Integrated Solution Improves System Reliability

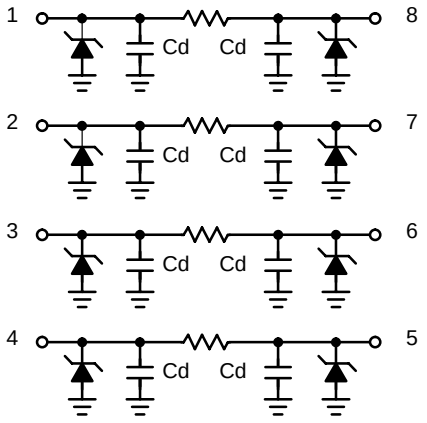
Applications

- EMI Filtering and ESD Protection on a Data Line
- Wireless Phones
- Handheld Products
- Notebook Computers
- LCD Displays

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

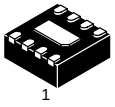
ON Semiconductor®

http://onsemi.com



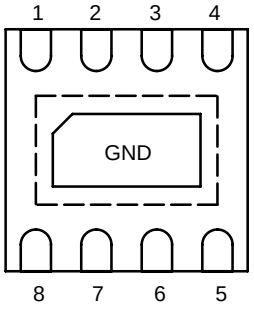
(Top View)

MARKING DIAGRAM



DFN8
CASE 506AQ
PLASTIC

RS = Specific Device Code
M = Month Code
▪ = Pb−Free Package
(Note: Microdot may be in either location)



(Bottom View)

ORDERING INFORMATION

Device	Package	Shipping†
NUF4401MNT1G	DFN8 (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 Specification Brochure, BRD8011/D.

MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
ESD Discharge IEC61000−4−2	Contact Discharge	V_{PP}	100	kV
Steady−State Power per Resistor		P_R	100	mW
Steady−State Power per Package		P_T	400	mW
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 s)		T_L	260	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Maximum Reverse Working Voltage		V_{RWM}			5.0	V
Breakdown Voltage	I_R = 1.0 mA	V_{BR}	6.0	7.0	8.0	V
Leakage Current	V_{RWM} = 3.3 V	I_R			100	nA
Resistance	I_R = 20 mA	R_A	170	200	230	Ω
Capacitance (Note 1, 3)	V_R = 2.5 V, f = 1.0 MHz	C_d	12	15	18	pF
Cut−Off Frequency (Note 2)	Above this frequency, appreciable attenuation occurs	f_{3dB}		125		MHz

1. Measured at 25°C.
2. 50 Ω source and 50 Ω load termination.
3. Total line capacitance is 2 times the diode capacitance (C_d).

TYPICAL PERFORMANCE CURVES

(T_A = 25°C unless otherwise specified)

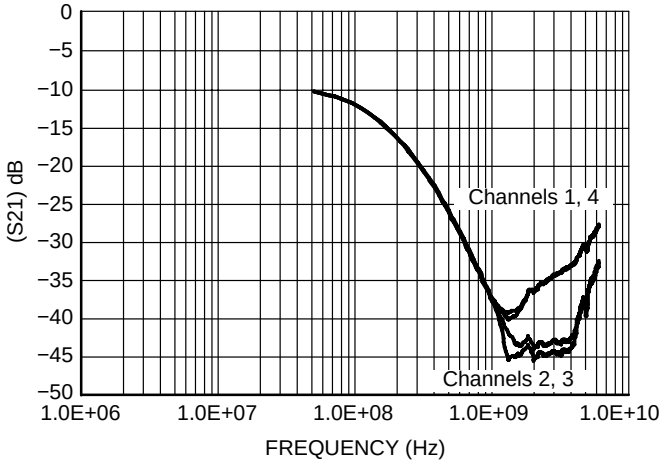


Figure 1. Insertion Loss Characteristics

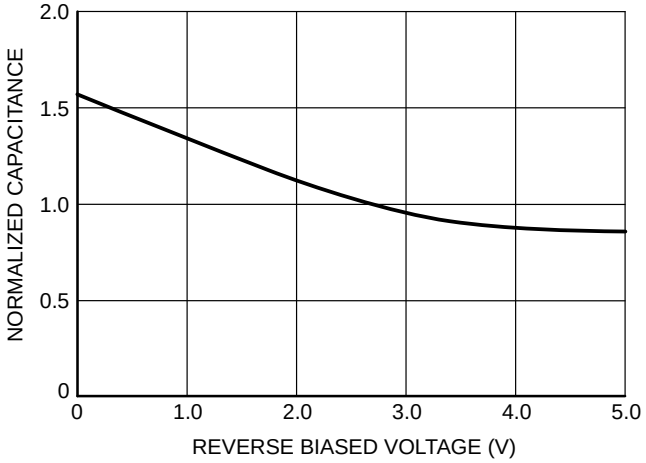


Figure 2. Typical Line Capacitance vs. Reverse Bias Voltage (Normalized to Capacitance @ 2.5 V)

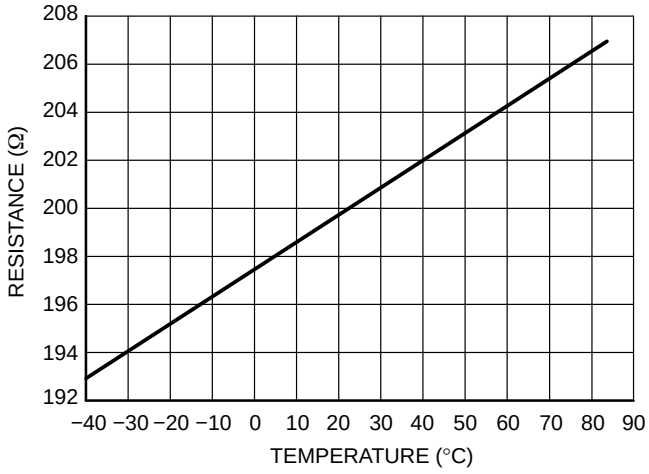
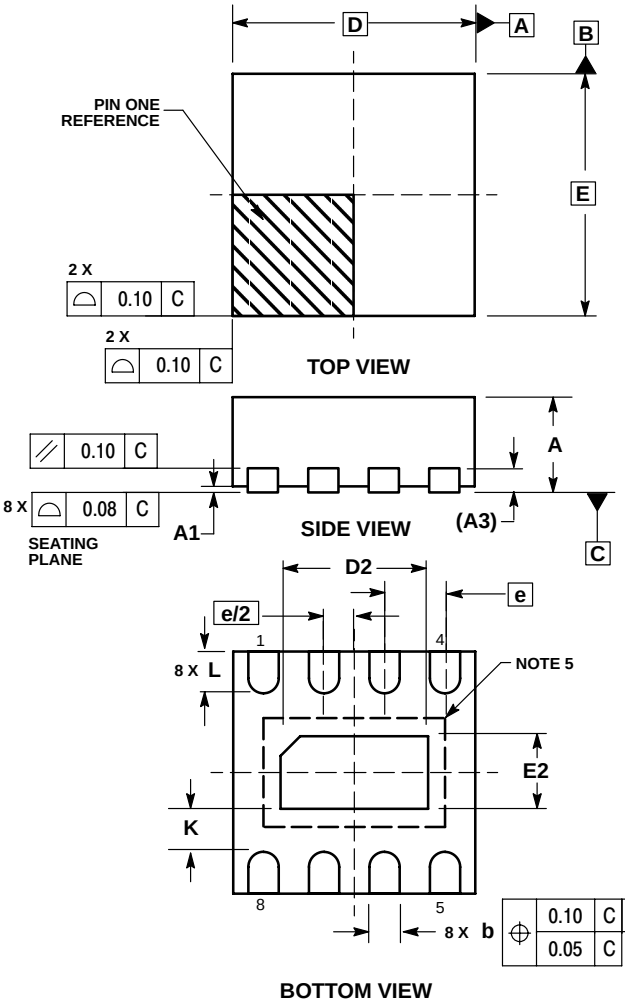


Figure 3. Typical Resistance vs. Temperature

PACKAGE DIMENSIONS

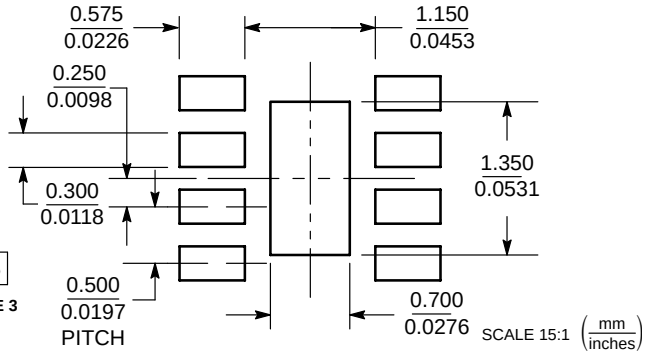
DFN8
CASE 506AQ−01
ISSUE A



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994 .
2. CONTROLLING DIMENSION: MILLIMETERS.
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. INTERNAL PAD SIZE: 1.5 X 0.9 MM.

	MILLIMETERS	
DIM	MIN	MAX
A	0.80	1.00
A1	0.00	0.05
A3	0.20 REF	
b	0.20	0.30
D	2.00 BSC	
D2	1.10	1.30
E	2.00 BSC	
E2	0.50	0.70
e	0.50 BSC	
K	0.20	−−−
L	0.25	0.45

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.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
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For additional information, please contact your local Sales Representative.