



THE DATASHEET OF NZMM7V0T4

NZMM7V0T4

EMI Filter with ESD Protection

Features:

- 4 × 4 mm Lead Less MLF Surface Mount Package
- 9 EMI/RFI Bi-directional “Pi” Low-Pass Filters
- ESD Protection Meets IEC6000–4–2
- 50 Watt Peak Pulse Power, 8 × 20 μs (all diodes under power)
- Diode Capacitance: 7 – 10 pF
- “Pi” Filter Line Capacitance: 22 ±20% pF
- Low Zener Diode Leakage: 1 μA Maximum
- Zener Breakdown Voltage; 6 – 8 Volts
- Moisture Sensitivity Level 1

Benefits:

- Suppresses EMI/RFI Noise in Systems Subjected to Electromagnetic Interference
- Small Package Size Minimizes Parasitic Inductance, Thus a More “Ideal” Low Pass Filtering Response

Typical Applications:

- Cellular Phones
- Communication Systems
- Computers
- Portable Products with Input/Output Conductors

MAXIMUM RATINGS

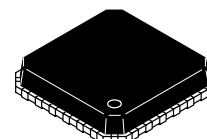
Rating	Symbol	Value	Unit
Peak Power Dissipation (Note 1) 8 × 20 μs Pulse	P _{PK}	50	Watts
Maximum Junction Temperature	T _J	150	°C

1. All diodes in parallel under power



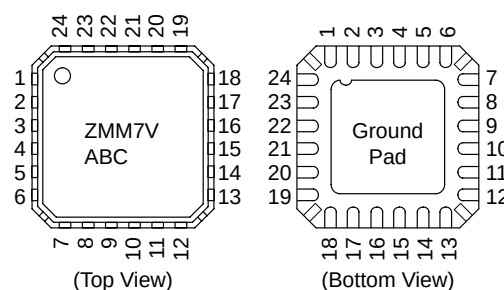
ON Semiconductor®

<http://onsemi.com>



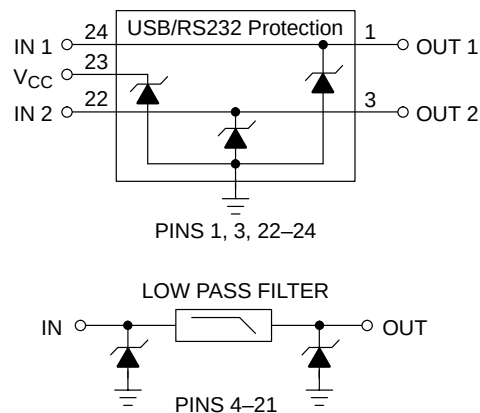
24 PIN MLF
CASE 485F
PLASTIC

MARKING DIAGRAM



ZMM7V = Specific Device Code
ABC = Date Code

CIRCUIT DESCRIPTION



ORDERING INFORMATION

Device	Package	Shipping
NZMM7V0T4	24 PIN	4000/Tape & Reel

NZMM7V0T4

ELECTRICAL CHARACTERISTICS

Symbol	Characteristic	Min	Typ	Max	Unit
V_Z	Zener Breakdown Voltage, @ $I_{ZT} = 1 \text{ mA}$	6.0	—	8.0	V
I_r	Zener Leakage Current, @ $V_R = 3 \text{ V}$	N/A	—	1.0	μA
V_F	Zener Forward Voltage, @ $I_F = 50 \text{ mA}$	N/A	—	1.25	V
Capacitance	Zener Internal Capacitance, @ 0 V Bias	7.0	—	10	pF
Capacitance	Zener/Resistor Array Line Capacitance	17.6	—	26.4	pF
Resistor	Resistance	90	—	110	Ω
F_C (Note 2)	Cutoff Frequency	—	220	—	MHz

2. 50 Ω Source and 50 Ω Lead Termination per Figure 2

Frequency Response Specification

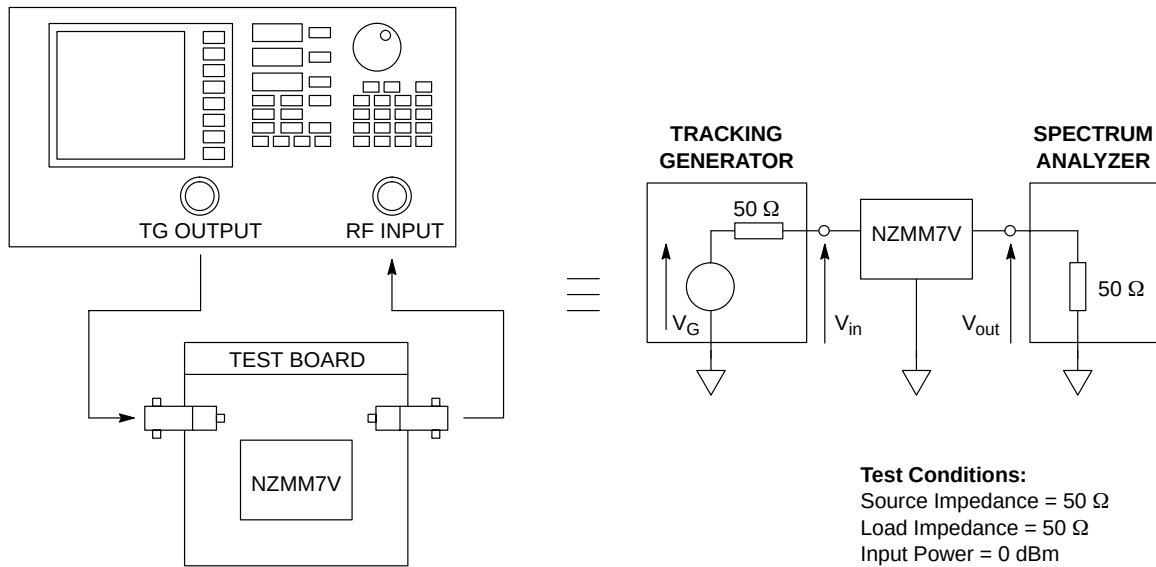


Figure 1. Measurement Conditions

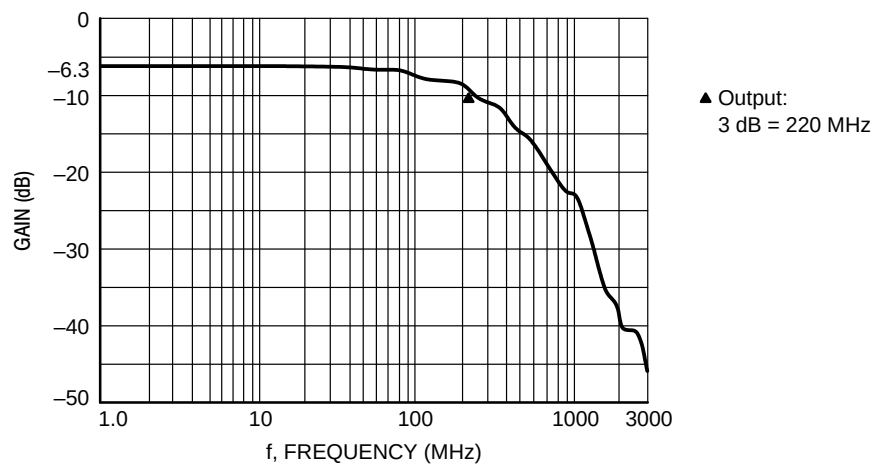
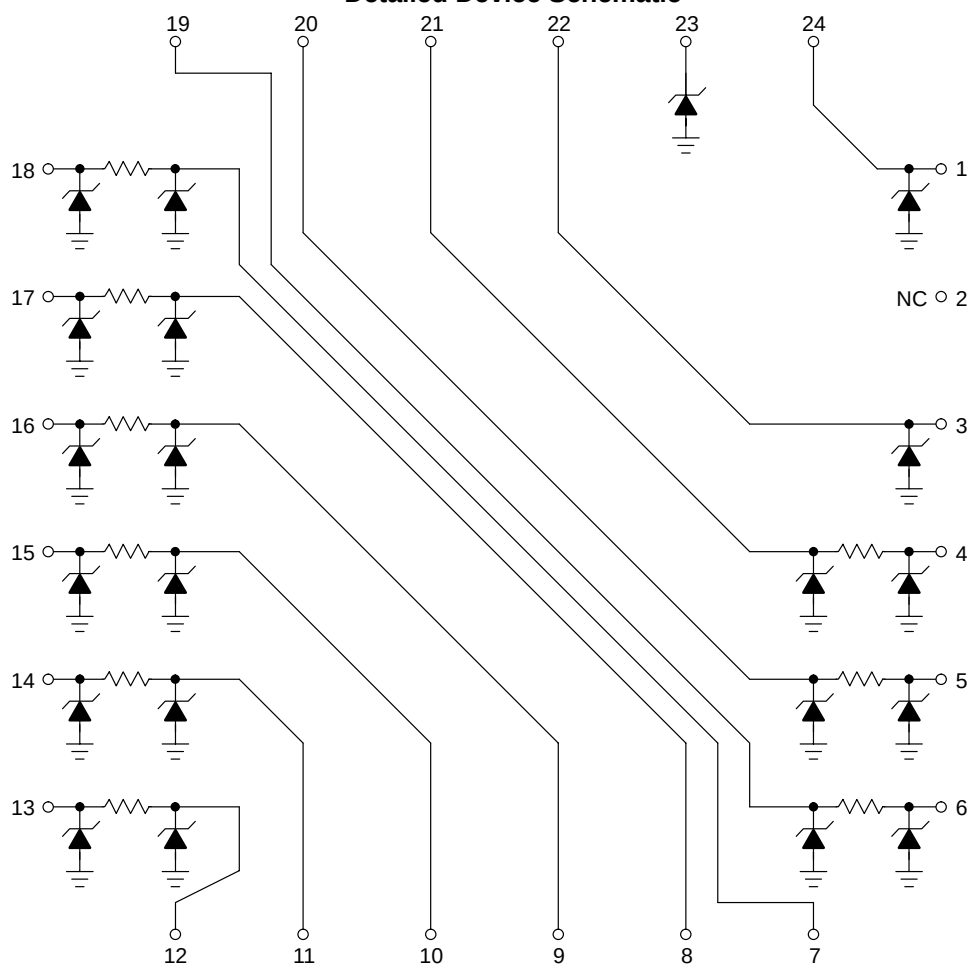


Figure 2. Typical EMI Filter Response
(50 Ω Source and 50 Ω Lead Termination)

NZMM7V0T4

Detailed Device Schematic



Applications Information

Suppressing Noise at the Source

- Filter all I/O signals leaving the noisy environment
- Locate I/O driver circuits close to the connector
- Use the longest rise/fall times possible for all digital signals

Reducing Noise at the Receiver

- Filter all I/O signals entering the unit
- Locate the I/O filters as close as possible to the connector

Minimizing Noise Coupling

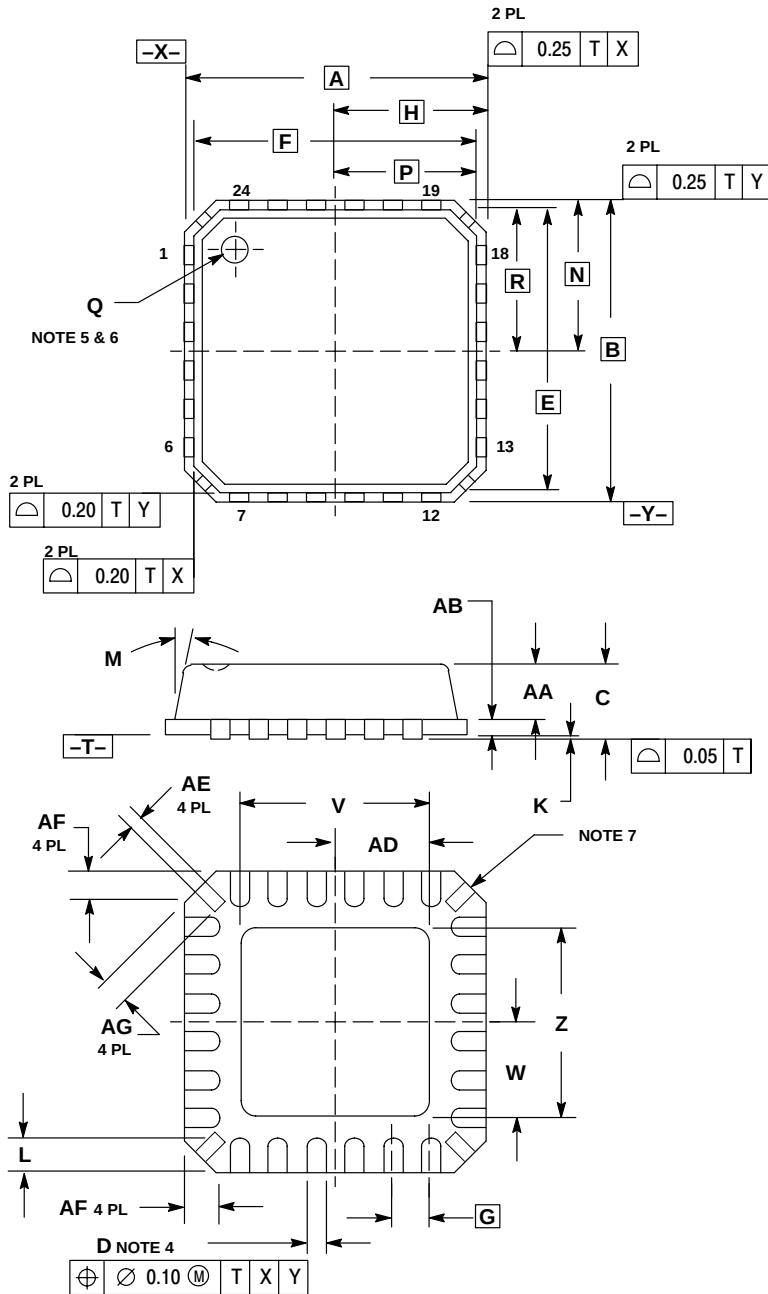
- Use multilayer PCBs to minimize power and ground inductance
- Keep clock circuits away from the I/O connector
- Ground planes should be used whenever possible
- Minimize the loop area for all high speed signals
- Provide for adequate power decoupling

ESD Protection

- Locate the suppression devices as close to the I/O connector as possible
- Minimize the PCB trace length to the suppression device
- Minimize the PCB trace length for the ground return for the suppression device

EMI Filter with ESD Protection

24 PIN MLF
PLASTIC PACKAGE
CASE 485F-01
ISSUE O



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIE THICKNESS ALLOWABLE IS 0.305 MM MAXIMUM (0.012 INCHES MAXIMUM).
4. DIMENSION D APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.20 AND 0.25 MM FROM TERMINAL.
5. THE PIN #1 IDENTIFIER MUST BE ON THE TOP SURFACE OF THE PACKAGE BY USING IDENTIFICATION MARK OR OTHER FEATURE OF PACKAGE BODY.
6. EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.
7. THE SHAPE SHOWN ON FOUR CORNERS ARE NOT ACTUAL I/O.
8. PACKAGE WARPAGE MAX 0.05 MM.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.00 BSC		0.157 BSC	
B	4.00 BSC		0.157 BSC	
C	---	1.00	---	0.039
D	0.18	0.30	0.007	0.012
E	3.75 BSC		0.148 BSC	
F	3.75 BSC		0.148 BSC	
G	0.50 BSC		0.020 BSC	
H	2.00 BSC		0.79 BSC	
K	0.01	0.05	0.000	0.002
L	0.30	0.55	0.012	0.022
M	---	12 °	---	12 °
N	2.00 BSC		0.079 BSC	
P	1.88 BSC		0.074 BSC	
Q	0.50 DIA		0.020 DIA	
R	1.88 BSC		0.079 BSC	
V	2.50 BSC		0.098 BSC	
W	1.30 BSC		0.051 BSC	
Z	2.50 BSC		0.098 BSC	
AA	0.65	0.80	0.026	0.031
AB	0.20 REF		0.008 REF	
AD	1.30 BSC		0.051 BSC	
AE	0.13	0.23	0.005	0.009
AF	0.24	0.60	0.009	0.024
AG	0.30	0.45	0.012	0.018

Notes

Notes

Notes

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.

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: ONlit@hibbertco.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
Email: r14525@onsemi.com

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

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 [NZMM7V0T4](#) 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