



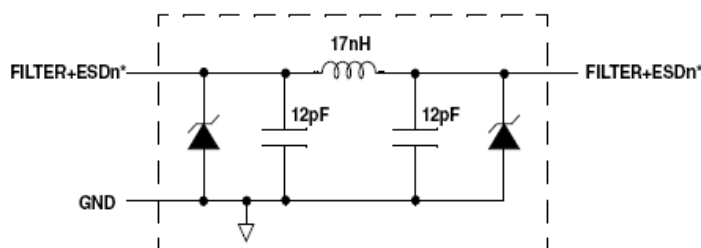
### Features

- Six channels of EMI filtering with integrated ESD protection
- Pi-style EMI filters in a capacitor-inductor-capacitor (C-L-C) network
- $\pm 15\text{kV}$  ESD protection on each channel (contact):  
IEC 61000-4-2 Level 4, contact discharge
- $\pm 30\text{kV}$  ESD protection on each channel (HBM)
- Greater than 30dB attenuation (typical) at 1GHz
- TDFN package with 0.40mm lead pitch:
  - 6-channel = 12-lead TDFN
- Tiny TDFN package size:
  - 12-lead: 2.5mm x 1.35mm
- RoHS-compliant, lead-free packaging

### Applications

- LCD and camera data lines in mobile handsets
- Wireless handsets
- LCD and camera modules

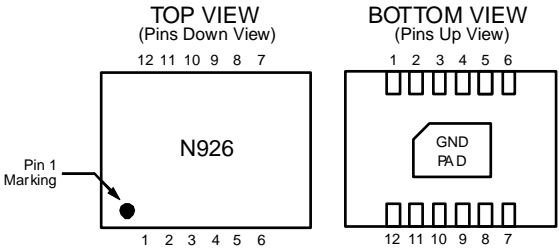
### Electrical Schematic



\* See Package/Pinout Diagrams for expanded pin information.

**6 EMI/RFI Filter Channels  
with Integrated ESD Protection**

**PACKAGE / PINOUT DIAGRAMS**



CM1492-06DE  
12-Lead TDFN Package

**Notes:**

- 1) These drawings are not to scale.
- 2) Date code to be added to package.

**PIN DESCRIPTIONS**

PINS	NAME	DESCRIPTION
1	FILTER1	Filter + ESD Channel 1
2	FILTER2	Filter + ESD Channel 2
3	FILTER3	Filter + ESD Channel 3
4	FILTER4	Filter + ESD Channel 4
5	FILTER5	Filter + ESD Channel 5
6	FILTER6	Filter + ESD Channel 6
7	FILTER6	Filter + ESD Channel 6
8	FILTER5	Filter + ESD Channel 5
9	FILTER4	Filter + ESD Channel 4
10	FILTER3	Filter + ESD Channel 3
11	FILTER2	Filter + ESD Channel 2
12	FILTER1	Filter + ESD Channel 1
GND PAD	GND	Device Ground

**Ordering Information**

**PART NUMBERING INFORMATION**

Pins	Package	Order Part Number	Part Marking
12	TDFN-12	CM1492-06DE	N926

Note 1: Parts are shipped in Tape and Reel form unless otherwise specified.

# CM1492-06DE

## Specifications

### ABSOLUTE MAXIMUM RATINGS

PARAMETER		
Storage Temperature Range	65 to +150	°C
Current per Inductor	30	mA
DC Package Power Rating	500	mW

### STANDARD OPERATING CONDITIONS

PARAMETER	RATING	UNITS
Operating Temperature Range	-40 to +85	°C

### ELECTRICAL OPERATING CHARACTERISTICS (See Note 1)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
L	Channel Inductance			17		nH
C <sub>TOTAL</sub>	Total Channel Capacitance	At 2.5VDC Reverse Bias, 1MHz, 30mVAC	19	24	29	pF
C	Capacitance C1	At 2.5VDC Reverse Bias, 1MHz, 30mVAC		12		pF
V <sub>DIODE</sub>	Standoff Voltage	I <sub>DIODE</sub> = 10μA		6.0		V
I <sub>LEAK</sub>	Diode Leakage Current (reverse bias)	V <sub>DIODE</sub> = +3.3V		0.1	1.0	μA
V <sub>SIG</sub>	Signal Clamp Voltage					
	Positive Clamp	I <sub>LOAD</sub> = 10mA	5.6	6.8	9.0	V
	Negative Clamp	I <sub>LOAD</sub> = -10mA	-1.5	-0.8	-0.4	V
V <sub>ESD</sub>	In-system ESD Withstand Voltage	Notes 2 and 3				
	a) Human Body Model, MIL-STD-883, Method 3015		±30			kV
	b) Contact Discharge per IEC 61000-4-2 Level 4		±15			kV
R <sub>DYN</sub>	Dynamic Resistance					
	Positive			2.3		Ω
	Negative			0.9		Ω
f <sub>c</sub>	Roll-off Frequency at -6dB Attenuation					
	Z <sub>SOURCE</sub> = 50Ω, Z <sub>LOAD</sub> = 50Ω			400		MHz

Note 1: T<sub>A</sub>=25°C unless otherwise specified.

Note 2: ESD applied to input and output pins with respect to GND, one at a time.

Note 3: Clamping voltage is measured at the opposite side of the EMI filter to the ESD pin (i.e. if ESD is applied to pin A1 then clamping voltage is measured at pin C1). Unused pins are left open.

### Performance Information

#### Typical Diode Capacitance vs. Input Voltage

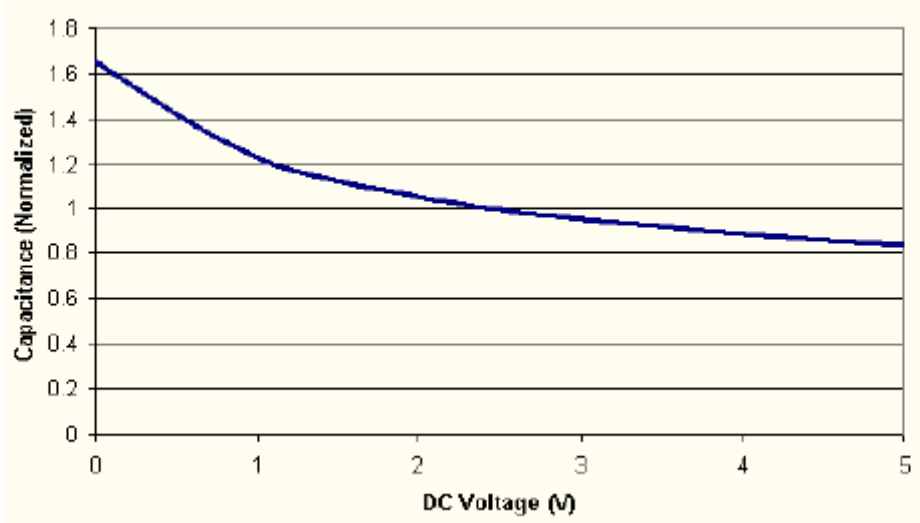


Figure 1. Filter Capacitance vs. Input Voltage (normalized to capacitance at 2.5VDC and 25°C)

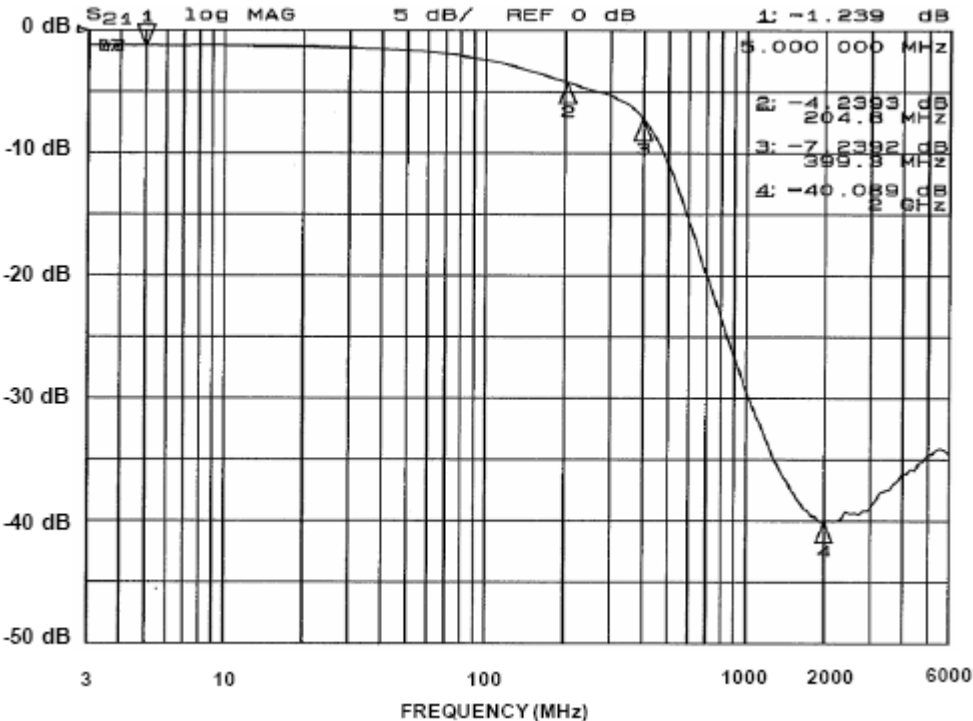


Figure 2. Typical Performance Curve

# CM1492-06DE

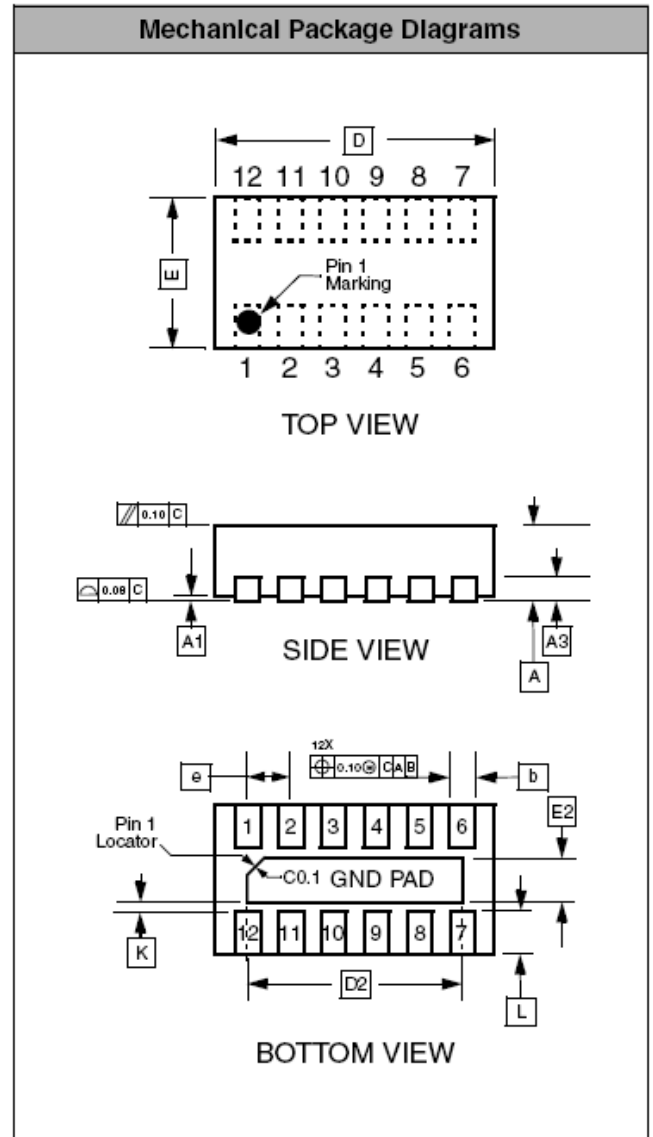
## Mechanical Details

### TDFN-12 Mechanical Specifications, 0.4mm


Dimensions for the CM1492-06DE supplied in a 12-lead, 0.4mm pitch TDFN package are presented below.

PACKAGE DIMENSIONS						
	TDFN					
	MO-229C*					
	12					
	0.70	0.75	0.80	0.028	0.030	0.031
	0.00	0.02	0.05	0.000	0.001	0.002
	0.200 REF			0.008 REF		
	0.15	0.20	0.25	0.006	0.008	0.010
	2.40	2.50	2.60	0.094	0.098	0.102
	1.90	2.00	2.10	0.075	0.079	0.083
	1.25	1.35	1.45	0.049	0.053	0.057
	0.30	0.40	0.50	0.012	0.016	0.020
	0.40 BSC			0.016 BSC		
	0.20			0.008		
	0.15	0.25	0.35	0.006	0.010	0.014
	3000 pieces					
	i					

\*This package is compliant with JEDEC standard MO-229C with the exception of the D, D2, E, E2, K and L dimensions as called out in the table above.



**Dimensions for 12-Lead, 0.4mm pitch TDFN package**

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](mailto: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

---