



Features

- Four, six and eight channels of EMI filtering with integrated ESD protection
- Pi-style EMI filters in a capacitor-resistor-capacitor (C-R-C) network
- $\pm 15\text{kV}$ ESD protection on each channel (IEC 61000-4-2 Level 4, contact discharge)
- $\pm 30\text{kV}$ ESD protection on each channel (HBM)
- Greater than 20dB attenuation (typical) at 1 GHz
- TDFN package with 0.40mm lead pitch:
 - 4-ch. = 8-lead TDFN
 - 6-ch. = 12-lead TDFN
 - 8-ch. = 16-lead TDFN
- Tiny TDFN package size:
 - 8-lead: 1.7mm x 1.35mm
 - 12-lead: 2.5mm x 1.35mm
 - 16-lead: 3.3mm x 1.35mm
- Increased robustness against vertical impacts during manufacturing process
- Lead-free version available

Applications

- LCD and Camera data lines in mobile handsets
- I/O port protection for mobile handsets, notebook computers, PDAs etc.
- EMI filtering for data ports in cell phones, PDAs or notebook computers.
- Wireless handsets
- Handheld PCs/PDAs
- LCD and camera modules

Product Description

The CM1430 is a family of pi-style EMI filter arrays with ESD protection, which integrates four, six and eight filters (C-R-C) in small form factor TDFN 0.40mm pitch packages. The CM1430 has component values of 8.5pF-100 Ω -8.5pF per channel. The CM1430 has a cut-off frequency of 200MHz and can be used in applications with data rates up to 80Mbps. The parts include ESD diodes on every pin, which provide a very high level of protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). The ESD protection diodes safely dissipate ESD strikes of $\pm 15\text{kV}$, well beyond the maximum requirement of the IEC61000-4-2 international standard. Using the MIL-STD-883 (Method 3015) specification for Human Body Model (HBM) ESD, the pins are protected for contact discharges at greater than $\pm 30\text{kV}$.

These devices are particularly well-suited for portable electronics (e.g. wireless handsets, PDAs, notebook computers) because of their small package and easy-to-use pin assignments. In particular, the CM1430 is ideal for EMI filtering and protecting data and control lines for the I/O data ports, LCD display and camera interface in mobile handsets.

The CM1430 is housed in space-saving, low-profile 8-,12- and 16-lead TDFN packages with a 0.4mm pitch and is available with lead-free finishing. This



CM1430

PIN DESCRIPTIONS

DEVICE PIN(s)			NAME	DESCRIPTION	DEVICE PIN(s)			NAME	DESCRIPTION
-04	-06	-08			-04	-06	-08		
1	1	1	FILTER1	Filter + ESD Channel 1	8	12	16	FILTER1	Filter + ESD Channel 1
2	2	2	FILTER2	Filter + ESD Channel 2	7	11	15	FILTER2	Filter + ESD Channel 2

STANDARD OPERATING CONDITIONS

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

ELECTRICAL OPERATING CHARACTERISTICS (SEE NOTE1)

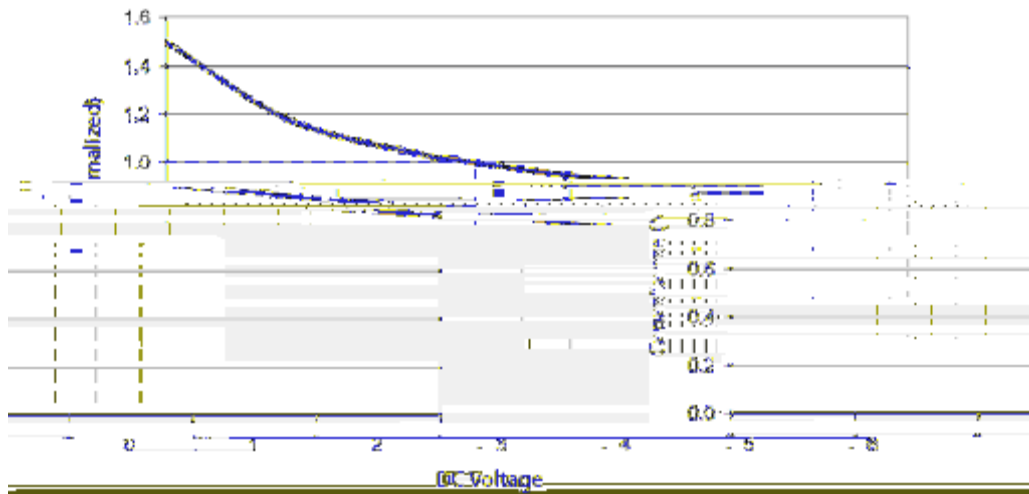
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
R	Resistance		80	100	120	

Performance Information (cont'd)

Typical Filter Performance ($T_A=25^\circ\text{C}$, DC Bias=0V, 50 Ohm Environment)

Performance Information (cont'd)

Typical Diode Capacitance vs. Input Voltage



**Figure 5. Filter Capacitance vs. Input Voltage
(normalized to capacitance at 2.5VDC and 25°C)**

Mechanical Details

CM1430-04DF/DE Mechanical Specifications

Dimensions for the CM1430-04DF/DE supplied in a 8-lead, 0.4mm pitch TDFN package are presented below. For complete information on the TDFN-8, see the California Micro Devices TDFN Package Information document.

PACKAGE DIMENSIONS						
Package	TDFN					
JEDEC No.	MO-229C					
Leads	8					
Dim.	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.70	0.75	0.80	0.028	0.030	0.031
B	0.00	0.03	0.05	0.000	0.001	0.002

CM1430

Mechanical Details (cont'd)

CM1430-06DF/DE Mechanical Specifications

Dimensions for the CM1430-06DF/DE supplied in a 12-lead, 0.4mm pitch TDFN package are presented below.


PACKAGE DIMENSIONS						
Package	TDFN					
JEDEC No.	MO-229C					
Leads	12					
Dim.	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.70	0.75	0.80	0.028	0.030	0.031
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3	0.20 REF			0.008 REF		
b	0.15	0.20	0.25	0.006	0.008	0.010
D	2.40	2.50	2.60	0.094	0.098	0.102
D2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.25	1.35	1.45	0.049	0.053	0.057
E2						

Mechanical Details (cont'd)

CM1430-08DF/DE Mechanical Specifications

Dimensions for the CM1430-08DF/DE supplied in a 16-lead, 0.4mm pitch TDFN package are presented below. For complete information on the TDFN-16, see the California Micro Devices TDFN Package Information document.

PACKAGE DIMENSIONS						
Package	TDFN					
JEDEC No.	MO-229C					
Leads	16					
Dim.	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.70	0.75	0.80	0.028	0.030	0.031

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