



Features

- Lead free versions available
- RoHS compliant (lead free version)*
- Bidirectional EMI filtering
- Low capacitance per line
- ESD protection
- Protects 6 data lines

Applications

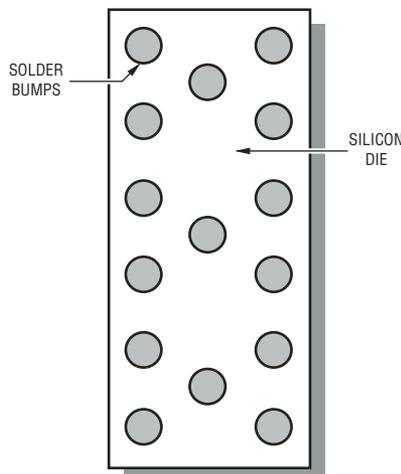
- Cell phones
- PDAs and notebooks
- Digital cameras
- MP3 players and GPS

2FAG-C15R - Integrated Passive & Active Device using CSP

General Information

The 2FAG-C15R device, manufactured using Thin Film on Silicon technology, provides ESD protection and EMI filtering for the LCD displays of portable electronic devices such as cell phones, modems and PDAs. The device incorporates six low pass filter channels where each channel has a series 100 ohm resistor assuring a minimum of -25 dB attenuation from 800 MHz to 3 GHz.

Each internal and external port of the six channels includes a TVS diode for ESD protection. The ESD protection provided by the component enables a data port to withstand a minimum ± 8 kV Contact / ± 15 kV Air Discharge per the ESD test method specified in IEC 61000-4-2. The device measures 1.33 mm x 2.96 mm and is available in a 15 bump CSP package intended to be mounted directly onto an FR4 printed circuit board. The CSP device meets typical thermal cycle and bend test specifications without the use of an underfill material.



Electrical & Thermal Characteristics

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)	Symbol	Minimum	Nominal	Maximum	Unit
<i>Per Line Specification</i>					
Resistance	R	80	100	120	Ω
Capacitance @ 2.5 V 1 MHz	C	24	30	36	pF
Rated Standoff Voltage	V_{WM}		5.0		V
Breakdown Voltage @ 1 mA	V_{BR}	6.0			V
Forward Voltage @ 10 mA	V_F		0.8		V
Leakage Current @ 3.3 V	I_R		0.1	0.5	μA
Filter Attenuation @ 800 - 3000 MHz	S21	-25	-30		dB
ESD Protection: IEC 61000-4-2					
Contact Discharge		± 8			kV
Air Discharge		± 15			kV
Thermal Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
Operating Temperature Range	T_J	-40	25	+85	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55	25	+150	$^\circ\text{C}$
Power Dissipation Per Resistor	P_D			100	mW



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*RoHS Directive 2002/95/EC Jan 27 2003 including Annex

Specifications are subject to change without notice.

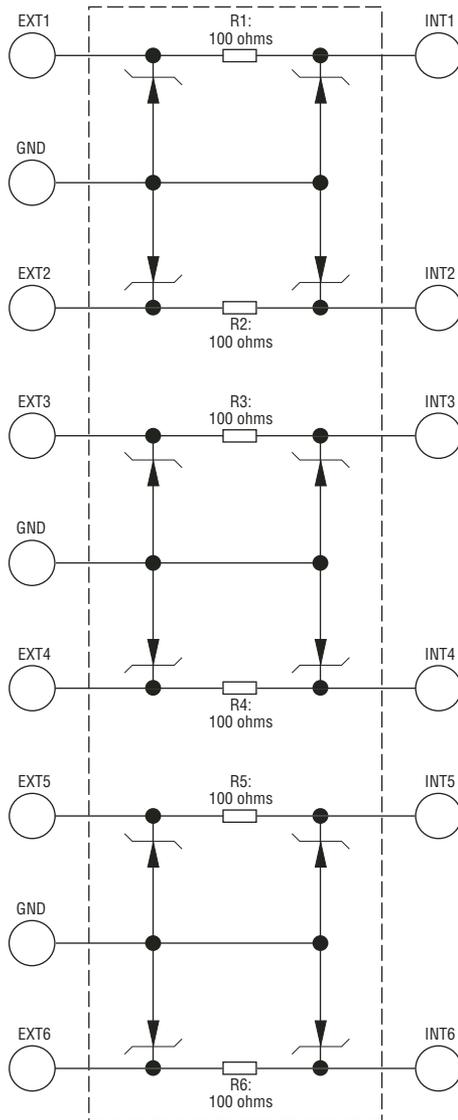
Customers should verify actual device performance in their specific applications.

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Block Diagram

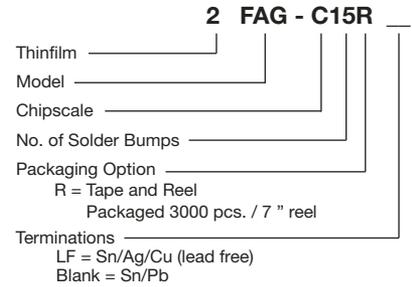
The CSP device block diagram below includes the pin names and basic electrical connections associated with each channel.



PCB Design and SMT Processing

Please consult the "Bourns Design Guide Using CSP" for notes on PCB design and SMT Processing.

How to Order



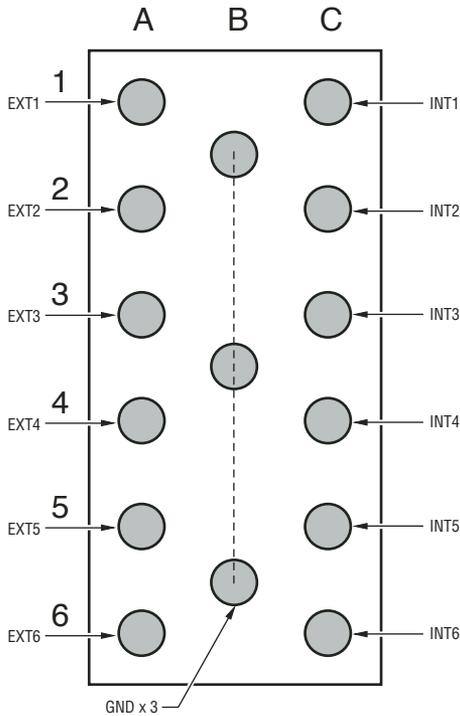
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Device Pin Out

The Pin-Out for the device is shown below with the bumps facing up.



Pin Out	Function	Pin Out	Function
A1	EXT1	C1	INT1
A2	EXT2	C2	INT2
A3	EXT3	C3	INT3
A4	EXT4	C4	INT4
A5	EXT5	C5	INT5
A6	EXT6	C6	INT6
B1	GND		
B2	GND		
B3	GND		

Packaging

The surface mount product will be dispensed in an 8 mm x 4 mm Tape and Reel format per EIA-481 standard.

