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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





# EMIF06-VID01C2

IPAD™

## 6 line low capacitance EMI filter and ESD protection

### Main application

Where EMI filtering in ESD sensitive equipment is required:

- LCD and camera for mobile phones
- Computers and printers
- Communication systems
- MCU board

### Description

The EMIF06-VID01C2 is a 6 line highly integrated device designed to suppress EMI/RFI noise in all systems subjected to electromagnetic interference. The Flip-Chip packaging means the package size is equal to the die size.

This filter includes ESD protection circuitry, which prevents damage to the application when it is subjected to ESD surges up to 15 kV.

### Benefits

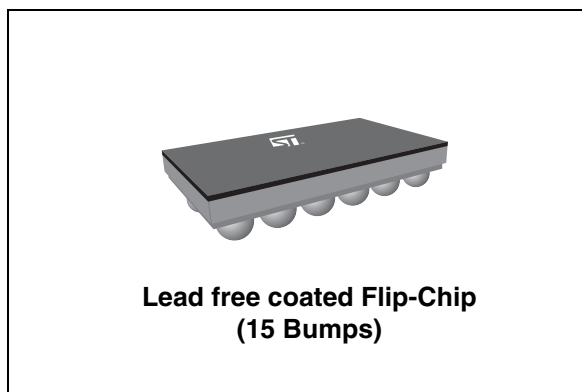
- High efficiency EMI filtering (-40db @ 900MHz)
- Low line capacitance suitable for high speed data bus
- Low serial resistance for camera impedance adaptation
- Optimized PCB space consuming: 2.92mm x 1.29mm
- Very thin package: 0.69 mm
- High efficiency in ESD suppression on inputs pins (IEC61000-4-2 level 4)
- High reliability offered by monolithic integration
- High reducing of parasitic elements through integration and wafer level packaging
- Lead free package

### Complies with the following standards:

IEC 61000-4-2

level 4 input pins    15 kV    (air discharge)  
                                  8 kV    (contact discharge)

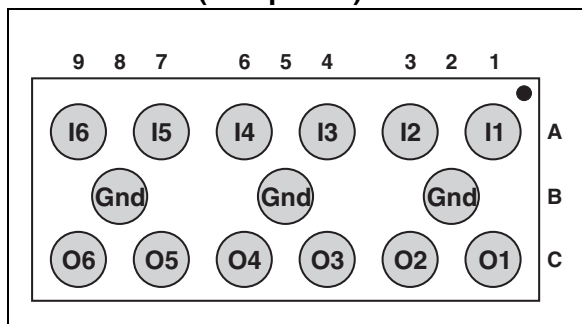
MIL STD 883E - Method 3015-6 Class 3



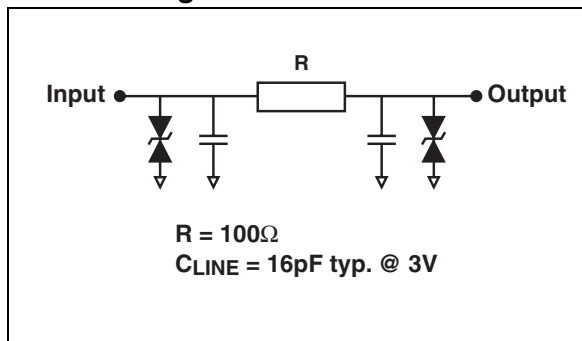
### Order code

Part Number	Marking
EMIF06-VID01C2	GR

### Pin identities (bump side)



### Circuit configuration



# 1 Characteristics

**Table 1. Absolute Ratings** (limiting values)

Symbol	Parameter and test conditions	Value	Unit
$T_j$	Maximum junction temperature	125	°C
$T_{op}$	Operating temperature range	- 40 to + 85	°C
$T_{stg}$	Storage temperature range	- 55 to + 150	°C

**Table 2. Electrical Characteristics** ( $T_{amb} = 25^\circ\text{C}$ )

Symbol	Parameter
$V_{BR}$	Breakdown voltage
$I_{RM}$	Leakage current @ $V_{RM}$
$V_{RM}$	Stand-off voltage
$R$	Series resistance between Input and Output
$C_{line}$	Input capacitance per line

The graph plots current  $I$  on the vertical axis against voltage  $V$  on the horizontal axis. The curve shows a sharp increase in current at the breakdown voltage  $V_{BR}$ . Key points on the graph include  $V_{BR}$ ,  $V_{RM}$ ,  $I_R$ , and  $I_{RM}$ .

Symbol	Test conditions	Min.	Typ.	Max.	Unit
$V_{BR}$	$I_R = 1\text{ mA}$	6	8	10	V
$I_{RM}$	$V_{RM} = 3\text{ V per line}$			500	nA
$R$	$I = 10\text{ mA}$	80	100	120	$\Omega$
$C_{line}$	$V_R = 3\text{ V DC}$ $1\text{ MHz}$ $V_{OSC} = 30\text{ mV}$		16	19	pF

Figure 1. S21 (db) attenuation measurement

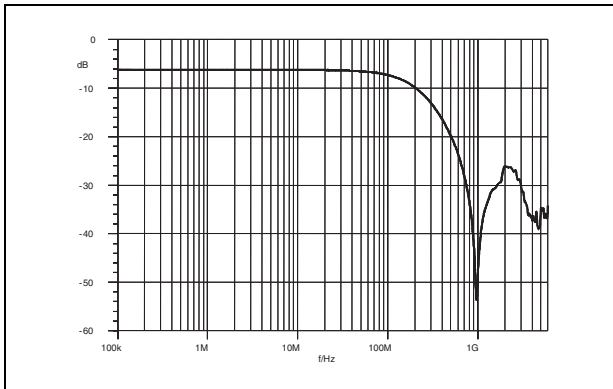


Figure 2. Analog crosstalk measurement

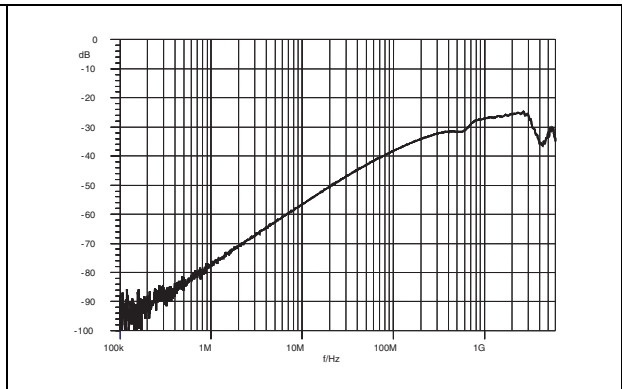


Figure 3. ESD response to IEC 61000-4-2 (+15kV air discharge) on one input (Vin) and on one output (Vout)

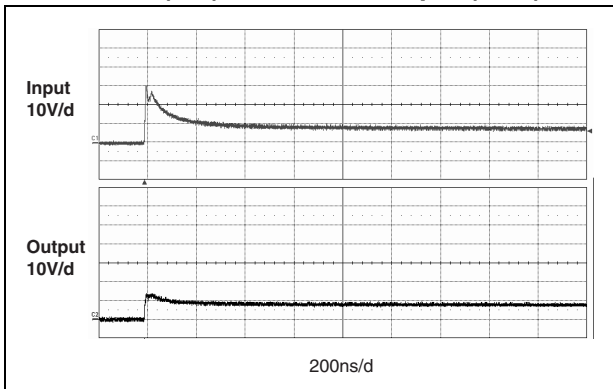


Figure 4. ESD response to IEC 61000-4-2 (-15kV air discharge) on one input (Vin) and on one output (Vout)

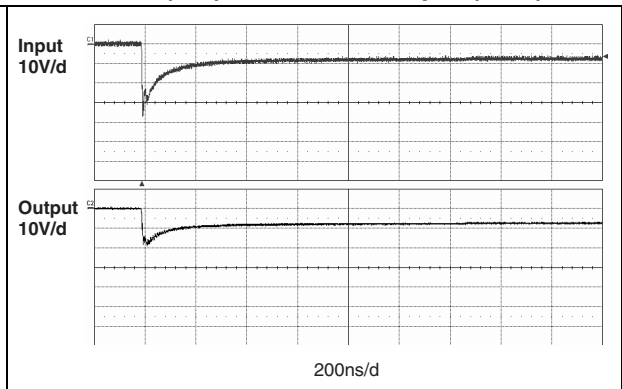
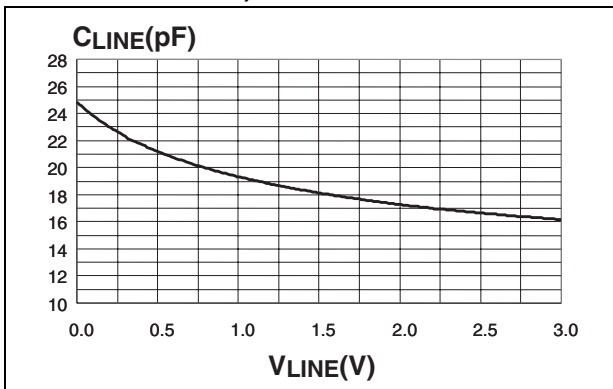
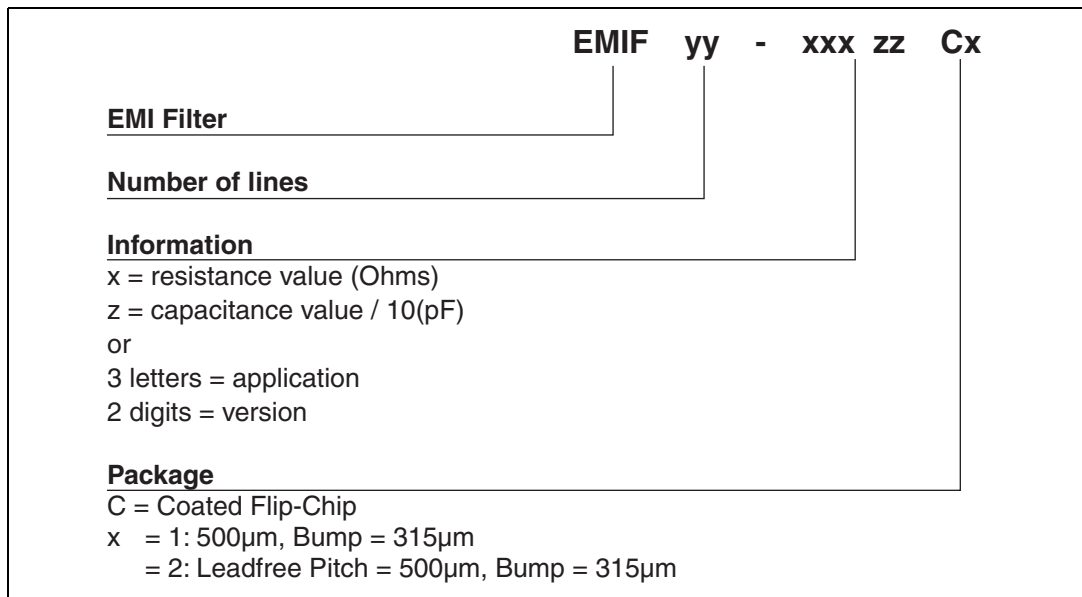


Figure 5. Junction capacitance versus reverse voltage applied (typical values)

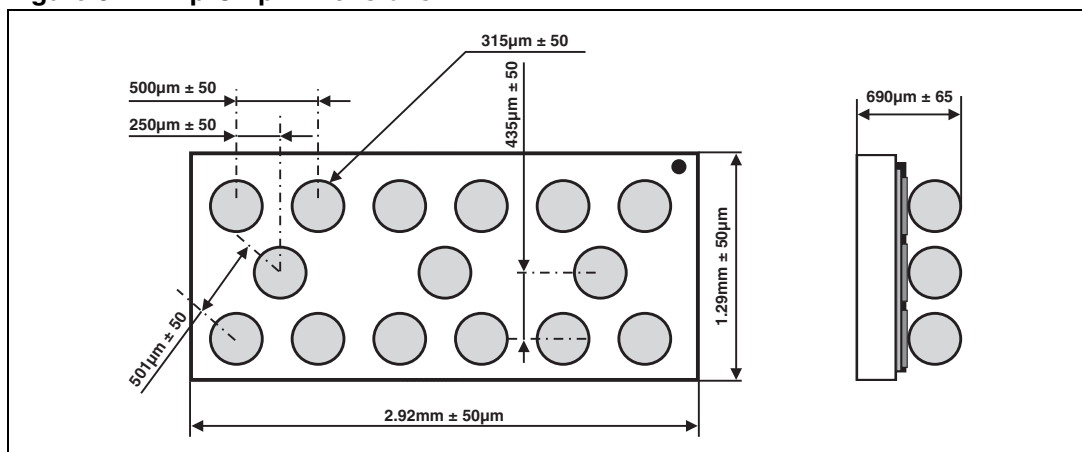


## 2 Ordering information scheme

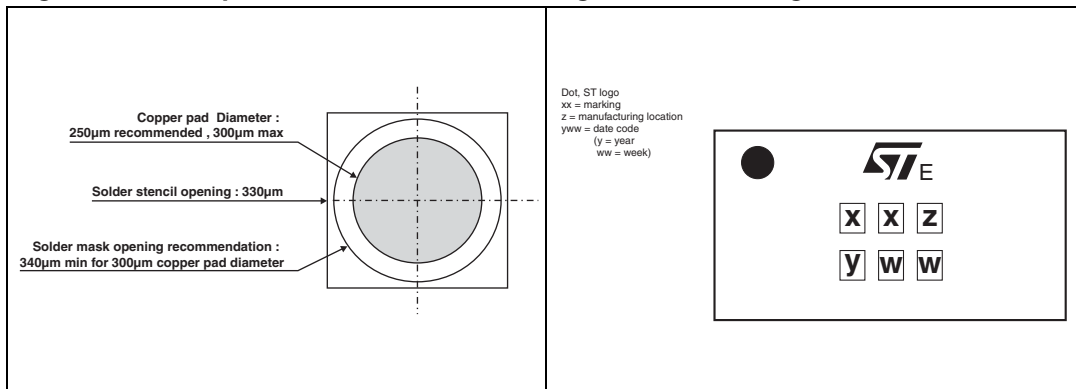


## 3 Package information

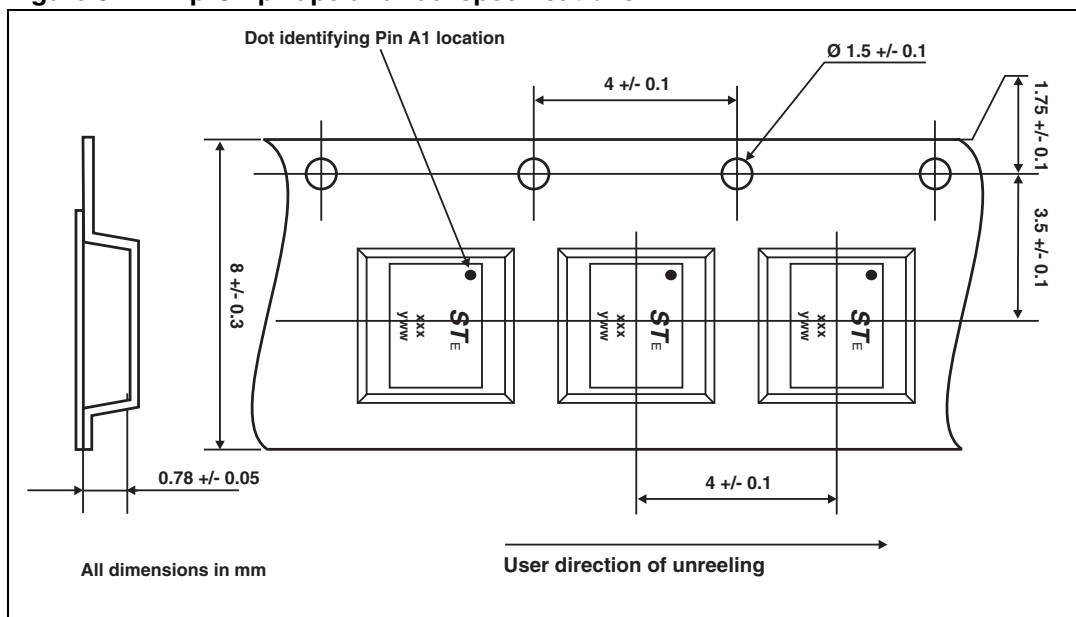
Figure 6. Flip-Chip Dimensions



**Figure 7. Footprint recommendations** **Figure 8. Marking**



**Figure 9. Flip-Chip Tape and reel specifications**



In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a lead-free second level interconnect. The category of second level interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: [www.st.com](http://www.st.com).

- Note:*
- More packing informations are available in the application note*
  - AN1235: "Flip-Chip: Package description and recommendations for use"*
  - AN1751: "EMI Filters: Recommendations and measurements"*

## 4 Ordering information

Ordering code	Marking	Package	Weight	Base qty	Delivery mode
EMIF06-VID01C2	GR	Flip-Chip	5.9 mg	5000	Tape and reel 7"

## 5 Revision history

Date	Revision	Changes
12-Aug-2005	1	First issue.
01-Jun-2006	2	Reformatted to current standards. Modified marking illustration to remove dimensions. Depth dimension changed in Figure 9.

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