

1 Characteristics

Table 1. Absolute ratings ($T_{amb} = 25\text{ }^{\circ}\text{C}$)

Symbol	Parameter and test conditions	Value	Unit
V_{PP}	Internal pins (D3, C3, C2, B2, B1):		
	ESD discharge IEC61000-4-2, air discharge	2	
	ESD discharge IEC61000-4-2, contact discharge	2	
	External pins (D1, C1, A2, A3, B3):		
	ESD discharge IEC61000-4-2, air discharge	15	
	ESD discharge IEC61000-4-2, contact discharge	8	kV
T_j	Maximum junction temperature	125	$^{\circ}\text{C}$
T_{op}	Operating temperature range	-40 to +85	$^{\circ}\text{C}$
T_{stg}	Storage temperature range	-55 to 150	$^{\circ}\text{C}$

Figure 3. Electrical characteristics (definitions)

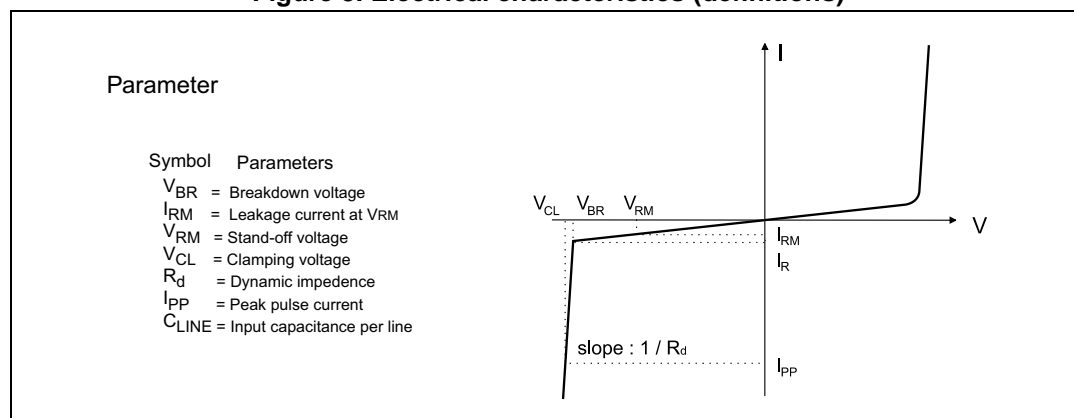


Table 2. Electrical characteristics ($T_{amb} = 25\text{ }^{\circ}\text{C}$)

Symbol	Conditions	Min.	Typ.	Max.	Unit
V_{BR}	$I_R = 1\text{ mA}$	14			V
I_{RM}	$V_{RM} = 3\text{ V}$			0.2	μA
C_{LINE}	$V_{LINE} = 0\text{ V}$, $V_{OSC} = 30\text{ mV}$, $F = 1\text{ MHz}$, measured in zero light condition			20	pF
R_1, R_2	Tolerance $\pm 5\%$		33		Ω
R_3	Tolerance $\pm 5\%$		1.30		k Ω
R_4	Tolerance $\pm 5\%$		17		k Ω
R_5	Tolerance $\pm 5\%$		15		k Ω

Figure 4. Filtering measurement

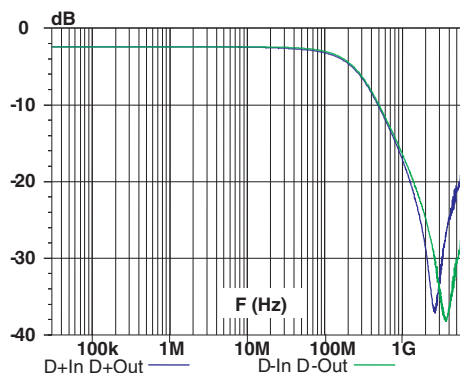


Figure 5. Analog crosstalk measurement

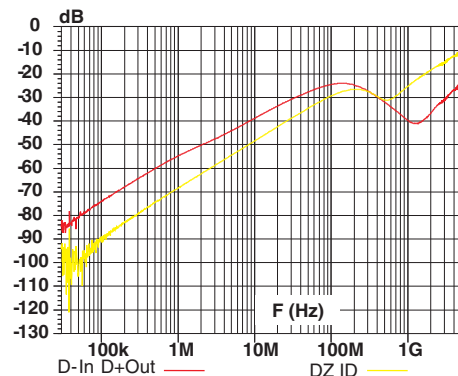
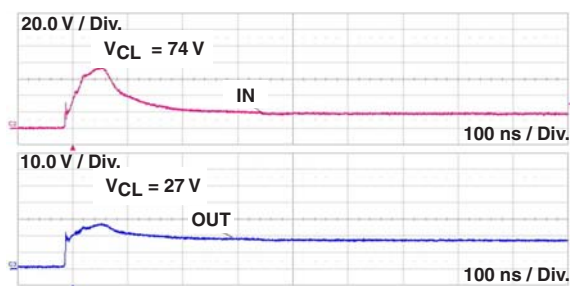
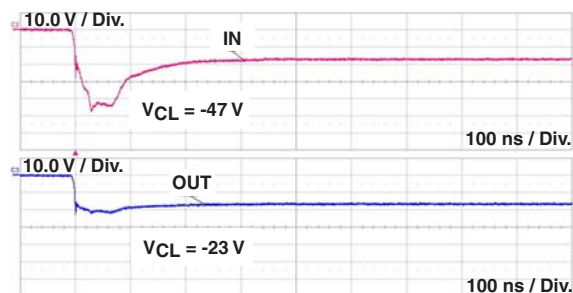
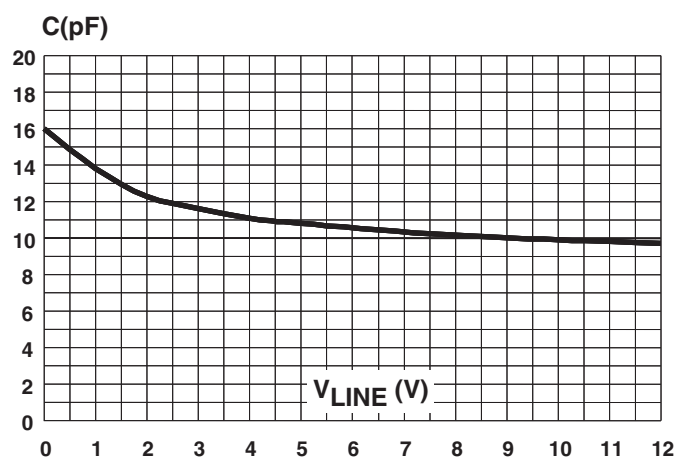
Figure 6. ESD response to IEC 61000-4-2 (+15 kV air discharge) on one input V_{IN} and on one output V_{OUT} Figure 7. ESD response to IEC 61000-4-2 (-15 kV air discharge) on one input V_{IN} and on one output V_{OUT} 

Figure 8. Junction capacitance versus reverse voltage applied (typical values)

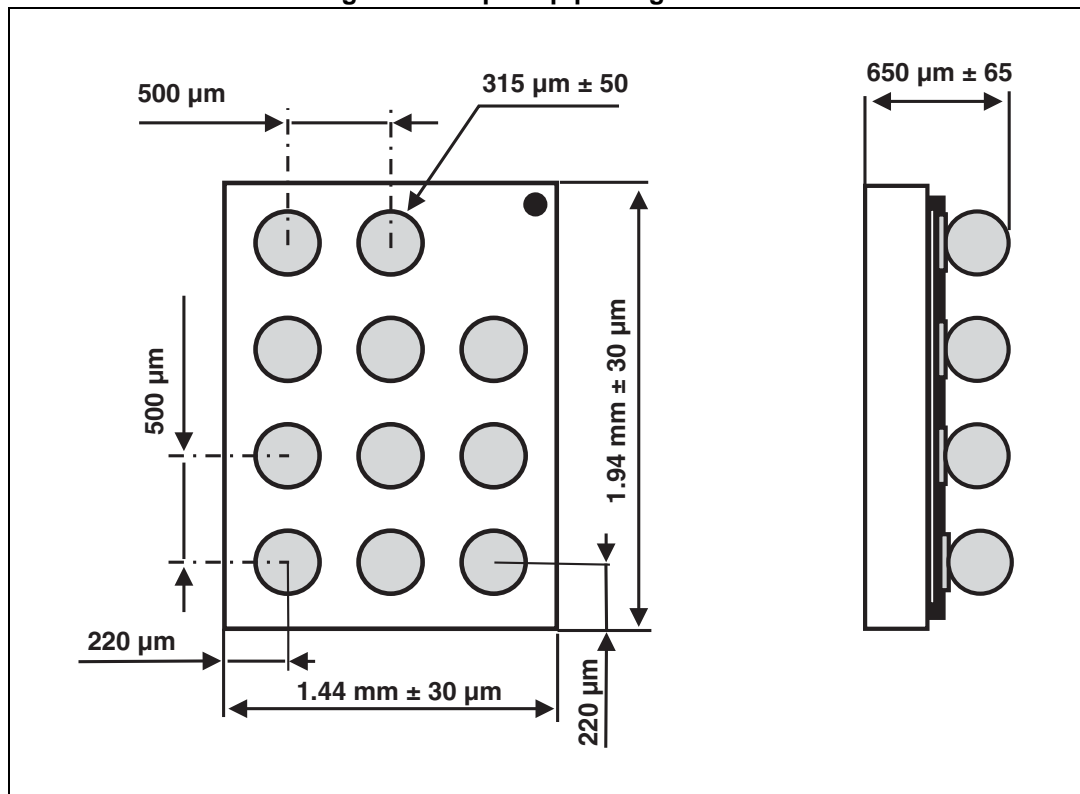


3 Package information

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: www.st.com. ECOPACK® is an ST trademark.

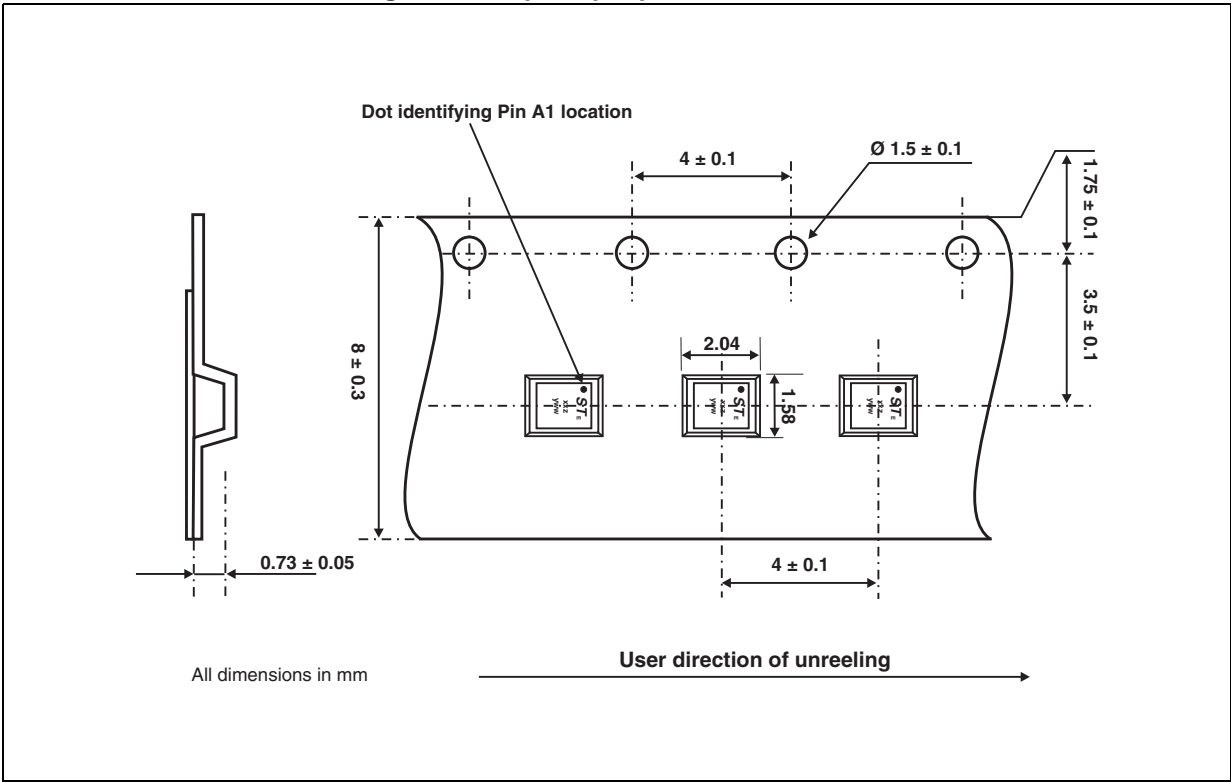
3.1 Flip-Chip package information

Figure 12. Flip-Chip package outline



3.2 Packing information

Figure 13. Flip-Chip tape and reel outline



Note: More information is available in the application notes:
AN1235: "Flip Chip: Package description and recommendations for use"
AN1751: "EMI filters: Recommendations and measurements"

Figure 14. Footprint

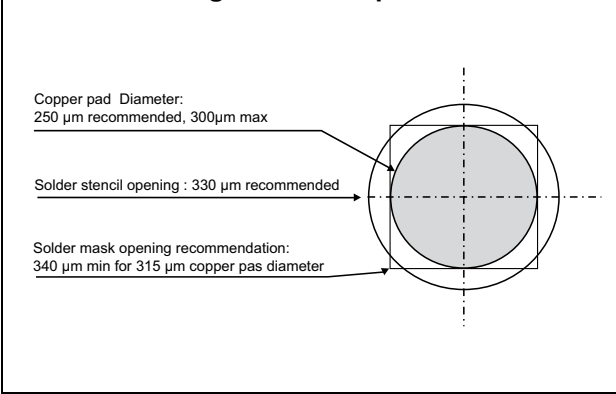
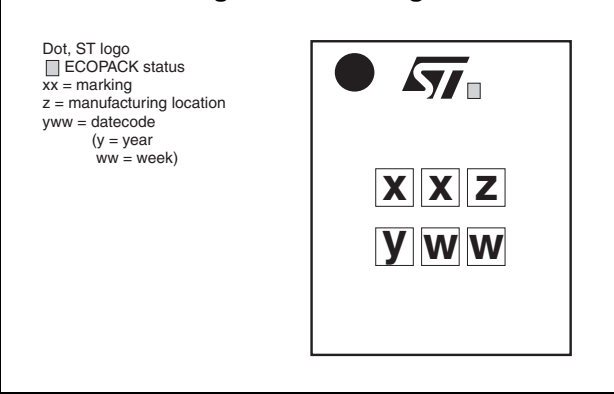


Figure 15. Marking



4 Ordering information

Figure 16. Ordering information scheme

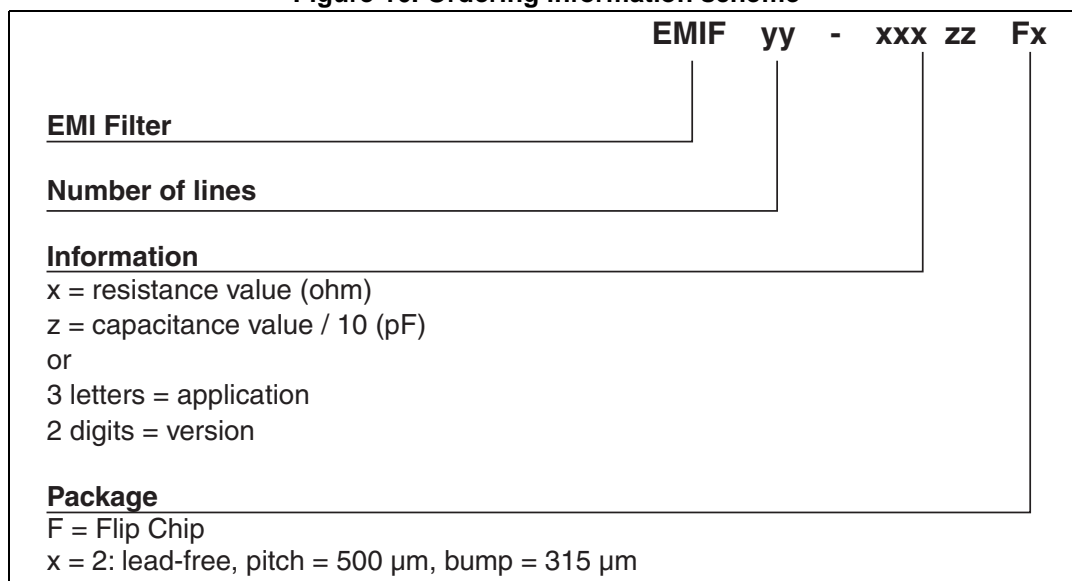


Table 3. Ordering information

Order code	Marking	Package	Weight	Base qty	Delivery mode
EMIF02-USB03F2	FU	Flip Chip	4 mg	5000	Tape and reel 7"

5 Revision history

Table 4. Document revision history

Date	Revision	Changes
14-Oct-2004	1	Initial release.
25-Oct-2004	2	Figure 12 : Flip Chip marking dimensions updated.
27-Oct-2004	3	Minor layout update. No content change.
28-Apr-2008	4	Updated ECOPACK statement. Updated Figure 12 , Figure 13 , Figure 14 , Figure 15 and Figure 16 Reformatted to current standards.
08-Feb-2010	5	Updated the maximum value of I_{RM} in Table 2 . Updated Figure 12 and Figure 13 for die dimension reductions.
15-Sep-2015	6	Updated Figure 14 and reformatted to current standards.

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