1 Electrical characteristics

Table 1. Absolute maximum ratings (T_{amb} = 25 °C)

Symbol	Parameter and test conditions	Value	Unit
V_{PP}	**Internal pins (A3, B3, C3):** ESD discharge IEC 61000-4-2, air discharge ESD discharge IEC 61000-4-2, contact discharge **External pins (A2, B1, C2, C1):** ESD discharge IEC 61000-4-2, air discharge ESD discharge IEC 61000-4-2, contact discharge	 2 2 15 8	kV
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

Figure 3. Electrical characteristics (definitions)

Symbol		Parameter
V_{BR}	=	Breakdown voltage
I_{RM}	=	Leakage current @ V_{RM}
V_{RM}	=	Stand-off voltage
V_{CL}	=	Clamping voltage
I_{PP}	=	Peak pulse current
I_R	=	Breakdown current
V_F	=	Forward voltage drop
C_{line}	=	Line capacitance
$R_{I/O}$	=	Series resistance between Input and Output

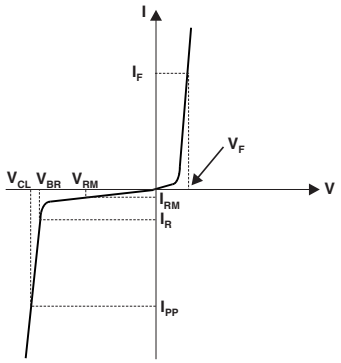

Table 2. Electrical characteristics (T_{amb} = 25 °C)

Symbol	Test conditions	Min.	Typ.	Max.	Unit
V_{BR}	I_R = 1 mA	6	-	20	V
I_{RM}	V_{RM} = 3 V	-	-	0.2	µA
R_d		-	1.5	-	Ω
R_1, R_3	Tolerance ± 20%	-	100	-	Ω
R_2	Tolerance ± 20%	-	47	-	Ω
C_{line}	V_{line} = 0 V, V_{osc} = 30 mV, F = 1 MHz	-	-	20	pF

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Figure 4. S21 (dB) attenuation measurement (A2-A3 line)

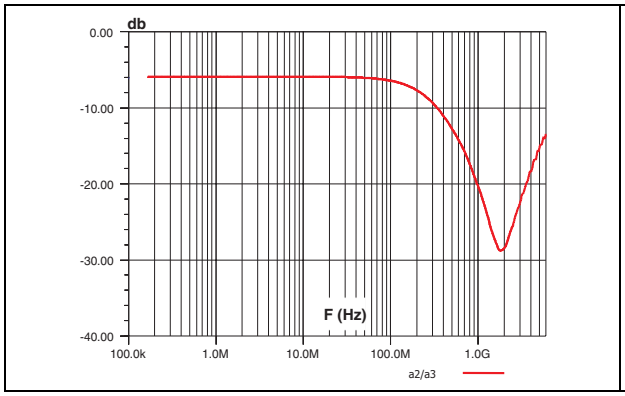


Figure 5. S21 (dB) attenuation measurement (B1-B3 line)

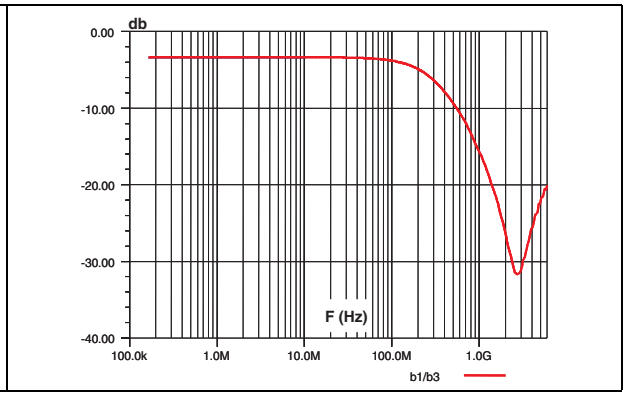


Figure 6. S21 (dB) attenuation measurement (C1-C3 line)

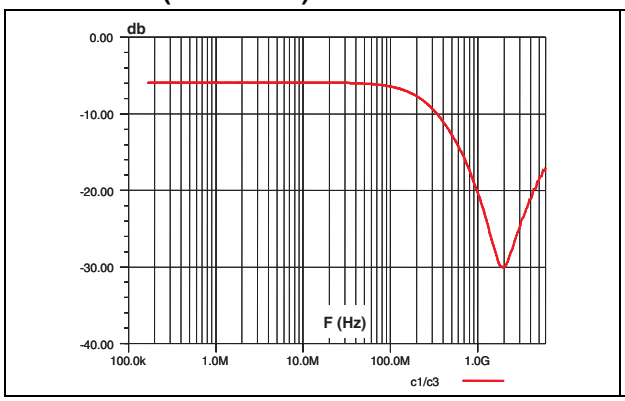


Figure 7. Analog crosstalk measurements

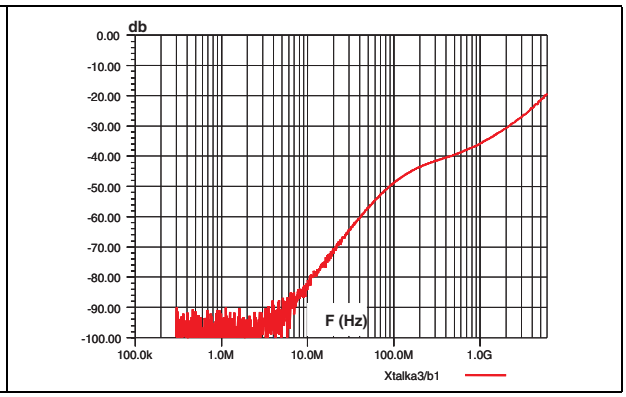


Figure 8. Digital crosstalk measurements

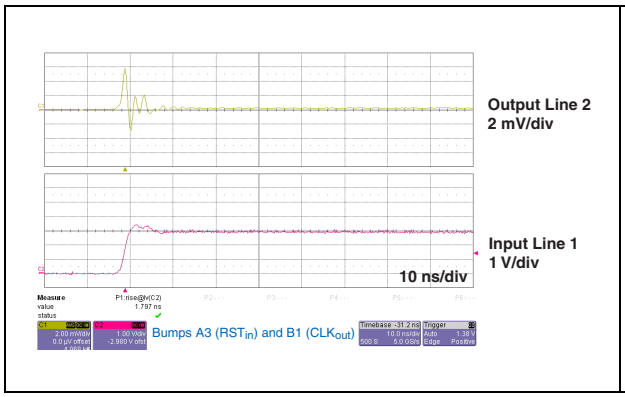
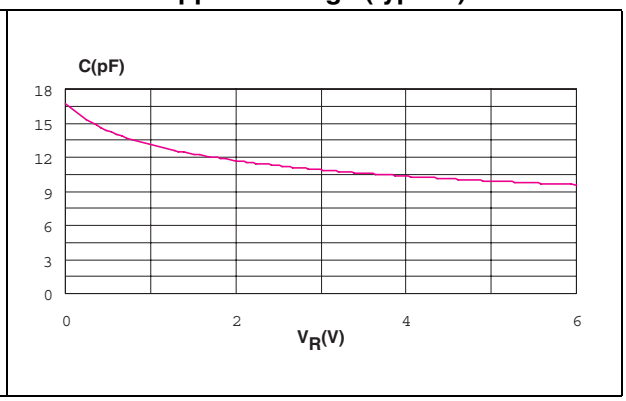


Figure 9. Line capacitance versus reverse applied voltage (typical)



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2 Aplac model

Figure 10. Aplac model

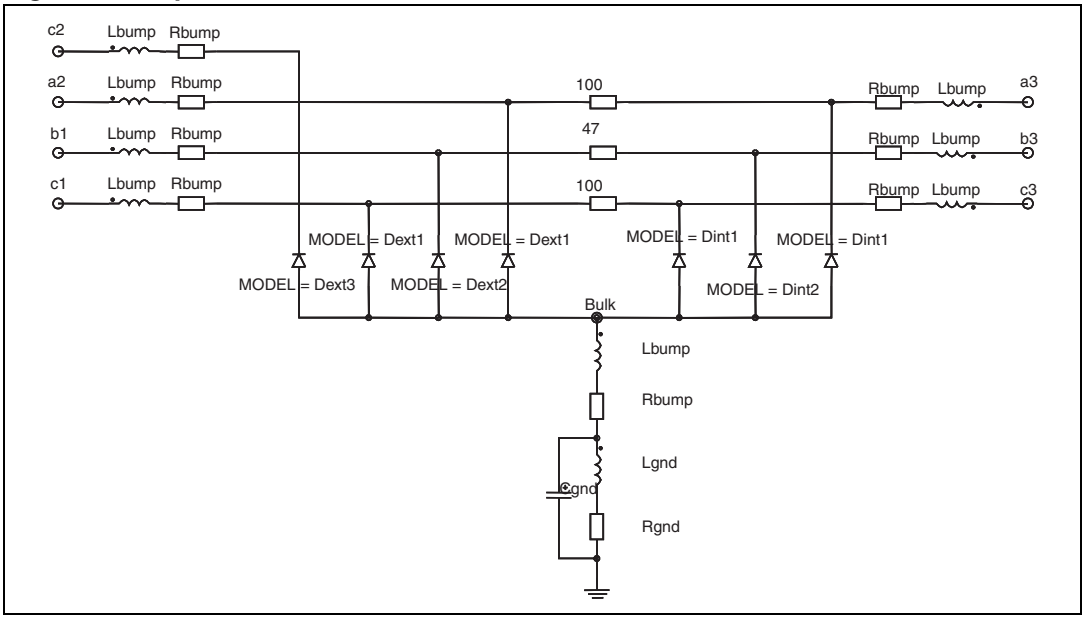

Figure 11. Aplac parameters

aplacvar Ls 950pH					
aplacvar Rs 150m	Dint1	Dext1	Dint2	Dext2	Dext3
aplacvar Cext1 12pF	BV=15	BV=15	BV=15	BV=15	BV=15
aplacvar Cext2 14pF	CJO=Cint1	CJO=Cext1	CJO=Cint2	CJO=Cext2	CJO=Cext3
aplacvar Cext3 18pF	IBV=1u	IBV=1u	IBV=1u	IBV=1u	IBV=1u
aplacvar Cint1 4.5pF	IKF=1000	IKF=1000	IKF=1000	IKF=1000	IKF=1000
aplacvar Cint2 4pF	IS=10f	IS=10f	IS=10f	IS=10f	IS=10f
aplacvar Rbump 17m	ISR=100p	ISR=100p	ISR=100p	ISR=100p	ISR=100p
aplacvar Lbump 43pH	N=1	N=1	N=1	N=1	N=1
aplacvar Rgnd 500m	M=0.3333	M=0.3333	M=0.3333	M=0.3333	M=0.3333
aplacvar Lgnd 50pH	RS=0.29	RS=0.25	RS=0.31	RS=0.28	RS=0.25
aplacvar Cgnd 0.15pF	VJ=0.6	VJ=0.6	VJ=0.6	VJ=0.6	VJ=0.6
aplacvar Rsub 100m	TT=50n	TT=50n	TT=50n	TT=50n	TT=50n

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Figure 12. Voltages when IEC 61000-4-2 (+15 kV air discharge) applied to external pin

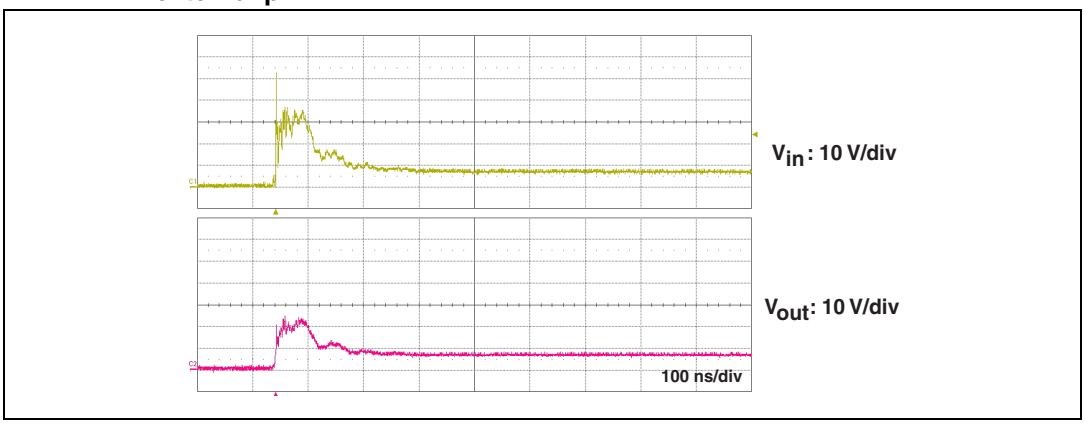
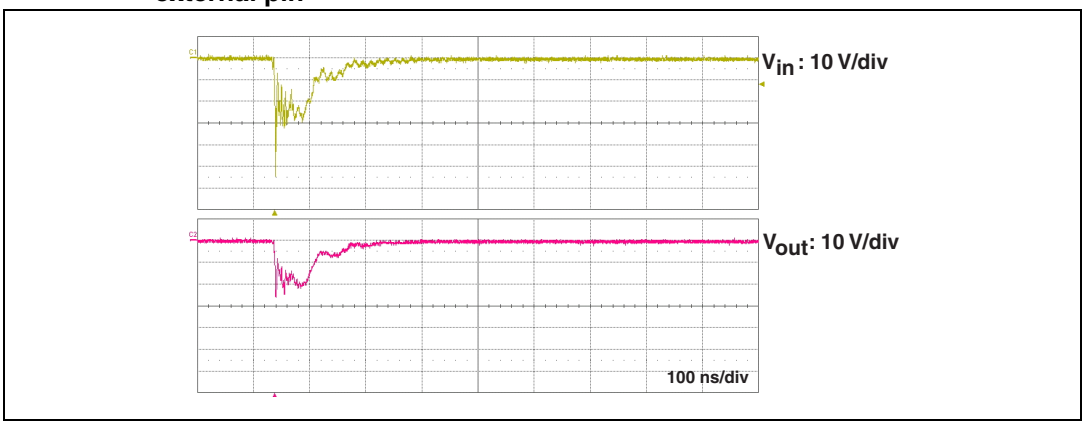


Figure 13. Voltages when IEC 61000-4-2 (- 15 kV air discharge) applied to external pin



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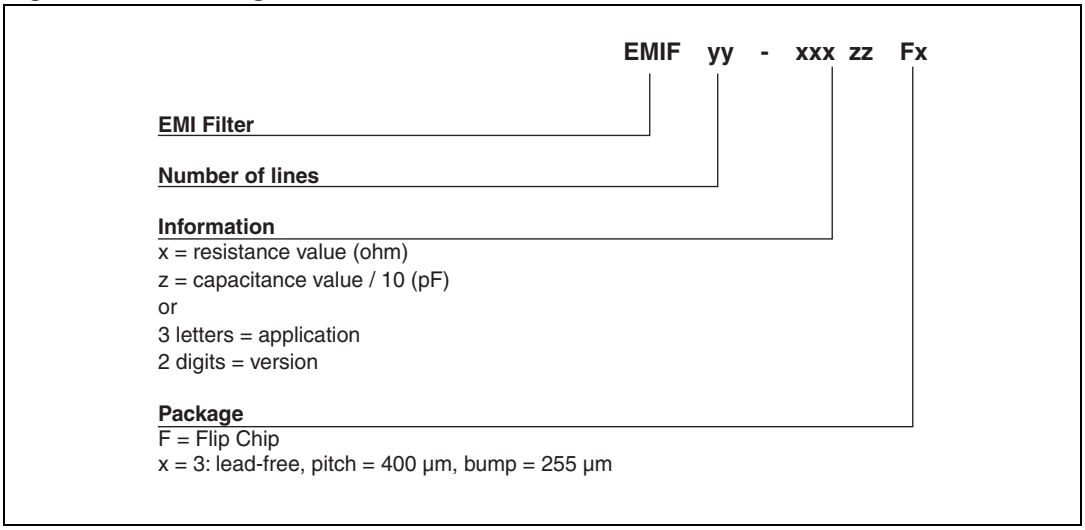
3 Ordering information scheme

Figure 14. Ordering information scheme



4 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.

Figure 15. Package dimensions

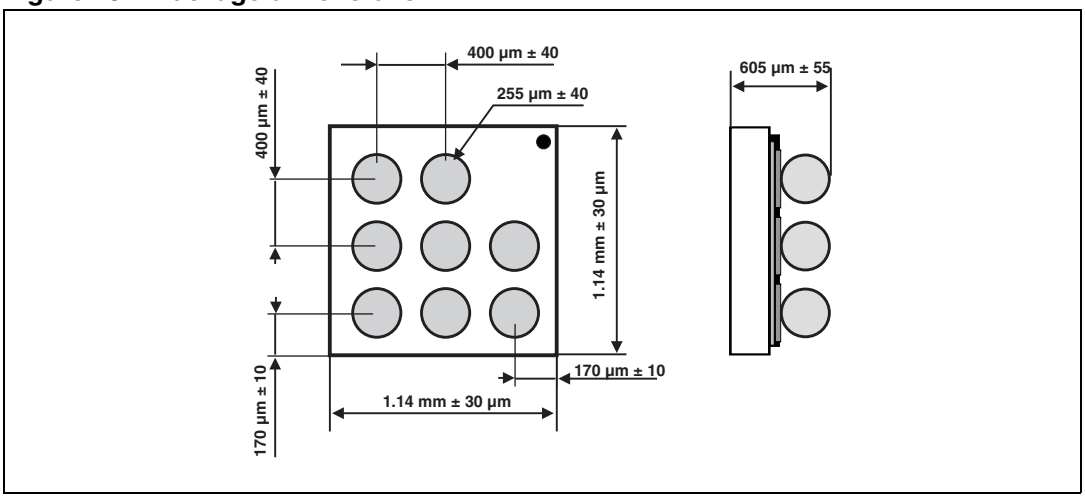


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Figure 16. Footprint

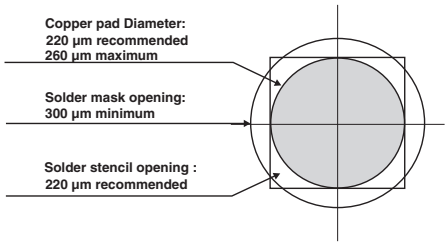


Figure 17. Marking

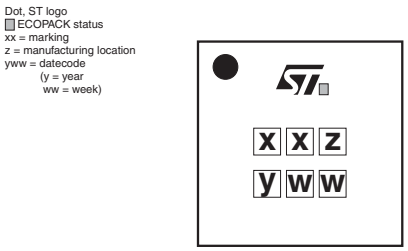
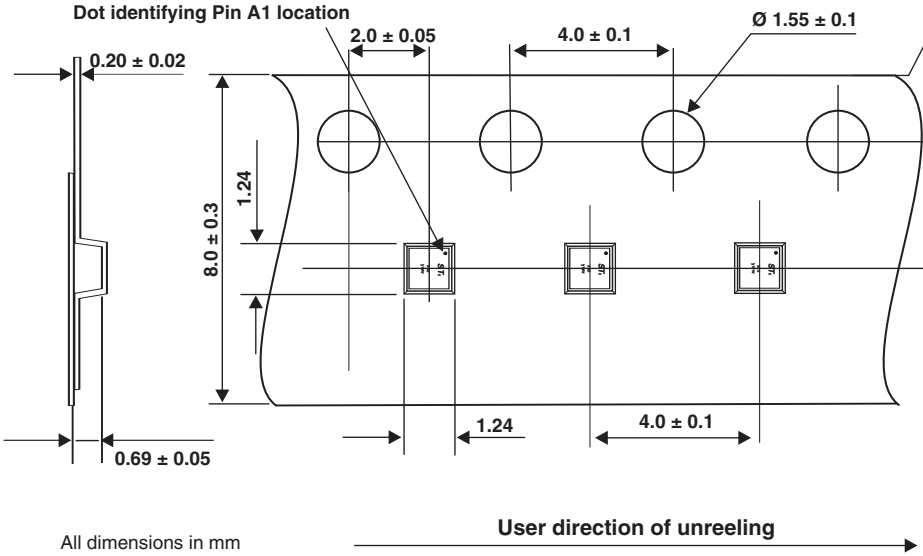


Figure 18. Flip Chip tape and reel specification



5 Ordering information

Table 3. Ordering information

Order code	Marking	Package	Weight	Base qty	Delivery mode
EMIF03-SIM02F3	HA	Flip Chip	1.74 mg	5000	Tape and reel 7”

Note: More information is available in the application notes:
AN2348: “STMicroelectronics 400 micro-metre Flip Chip: package description and recommendation for use”
AN1751: "EMI filters: recommendations and measurements"

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6 Revision history

Table 4. Document revision history

Date	Revision	Changes
19-Jul-2005	1	Initial release.
26-Feb-2007	2	Changed out to ext in Configuration diagram on page 1. Added Ecopack statement. Reformatted to current layour standard. Updated Application note AN2348 reference and description.
28-Nov-2007	3	Updated ECOPACK statement. Updated *Figure 14*, *Figure 15*, *Figure 16* and *Figure 18*. Reformatted to current standards.
09-Feb-2010	4	Updated die dimensions in *Figure 15* and pocket dimensions in *Figure 18*.
07-Apr-2010	5	Updated tolerance dimensions in *Figure 15: Package dimensions*.

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