

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 (Tamb = 25° C)

| Symbol | Parameter |
|------------|----------------------------|
| V_{BR} | Breakdown voltage |
| I_{RM} | Leakage current @ V_{RM} |
| V_{RM} | Stand-off voltage |
| C_{line} | Input capacitance per line |

| Symbol | Test conditions | Tolerance | Min. | Typ. | Max. | Unit |
|------------|---------------------------------|-----------|------|------|------|---------------|
| V_{BR} | $I_R = 1 \text{ mA}$ | | 6 | | 9 | V |
| I_{RM} | $V_{RM} = 5 \text{ V per line}$ | | | | 1 | μA |
| R_1, R_2 | $I = 10 \text{ mA}$ | $\pm 5\%$ | | 33 | | Ω |
| R_3 | $I = 1 \text{ mA}$ | $\pm 5\%$ | | 1.5 | | k Ω |
| C_{line} | @ 0 V | | | 30 | | pF |
| Matching | Serial resistance matching | | | 1 | | % |

Figure 1. S21 (dB) attenuation measurement Figure 2. Analog crosstalk measurements

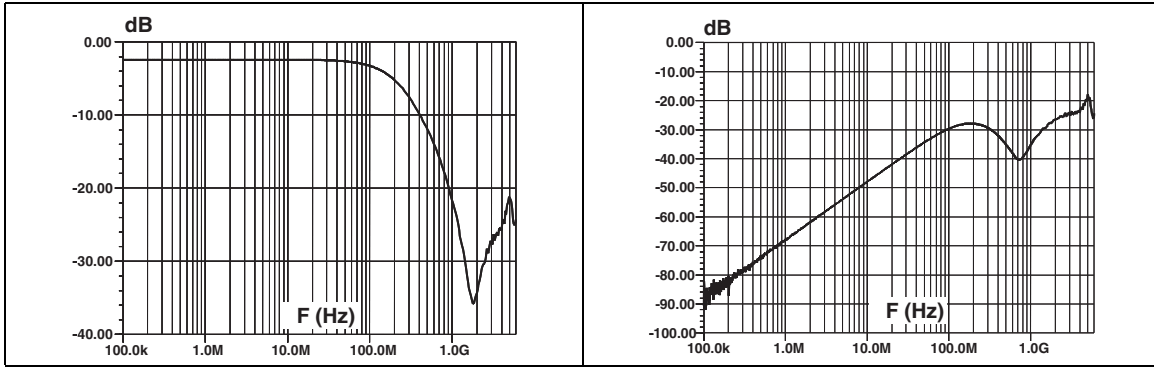


Figure 3. ESD response to IEC 61000-4-2 (+15 kV air discharge) on one input (Vin) and on one output (Vout) Figure 4. ESD response to IEC 61000-4-2 (-15 kV air discharge) on one input (Vin) and on one output (Vout)

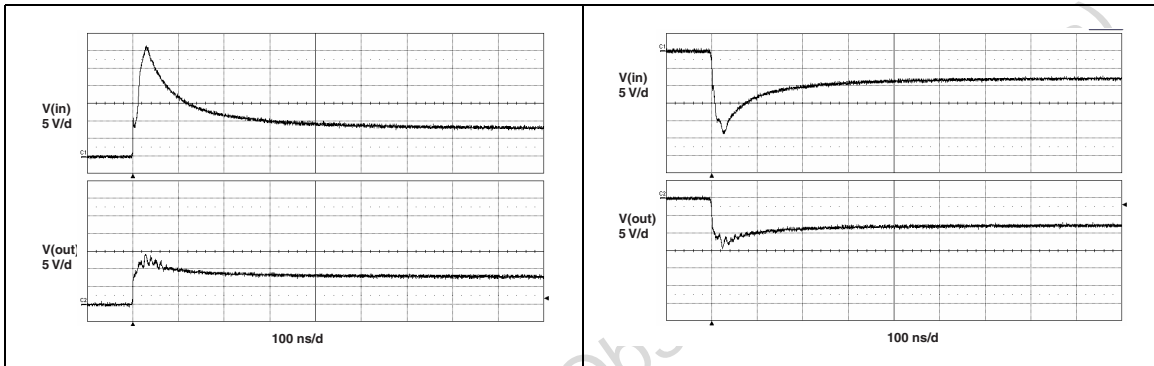


Figure 5. Junction capacitance versus reverse voltage applied

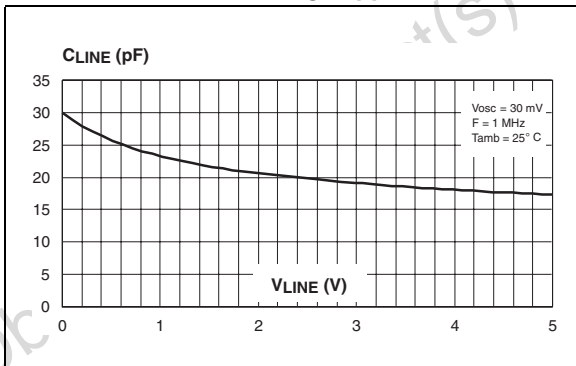


Figure 6. Aplac model device structure

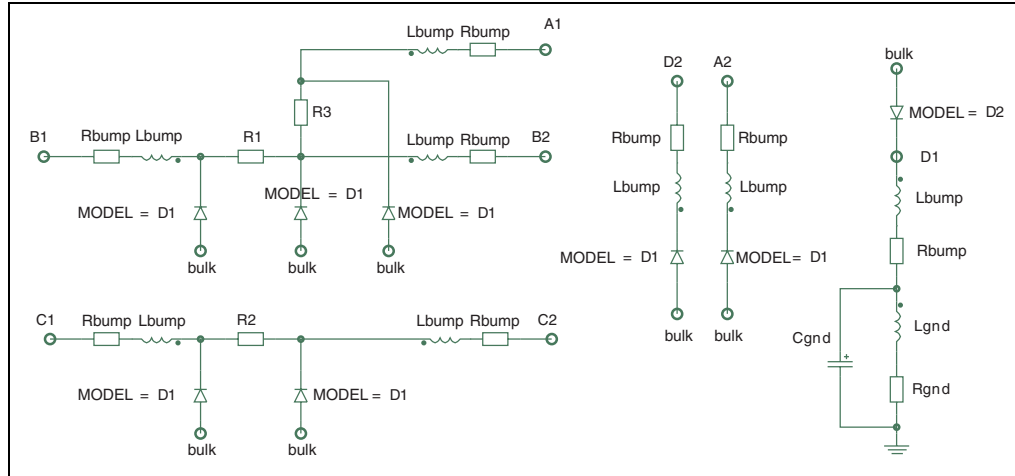
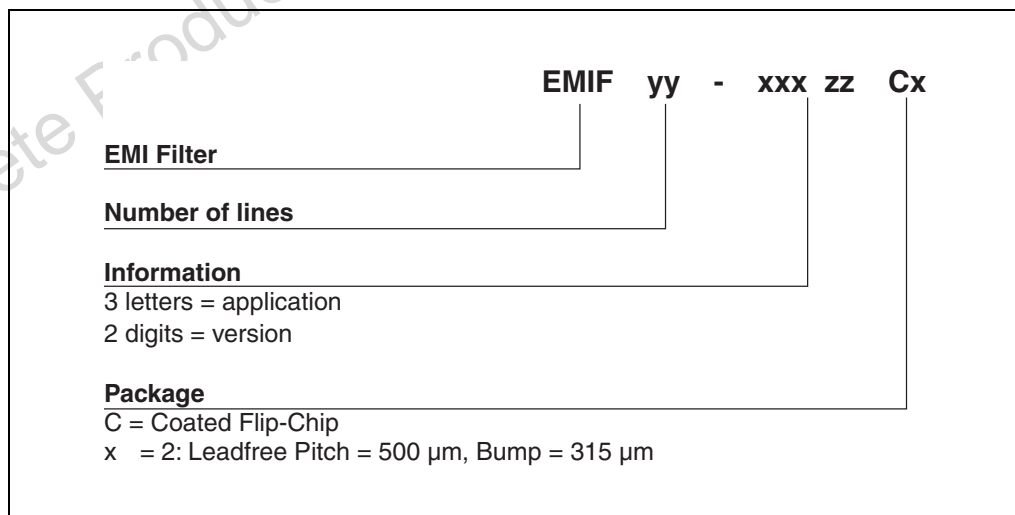


Figure 7. Aplac model parameters

| | | |
|----------------------|-----------------|-----------------|
| aplacvar R1 33 | Diode D1 | Diode D2 |
| aplacvar R2 33 | BV=7 | BV=7 |
| aplacvar R3 1.5k | IBV=1m | IBV=1m |
| aplacvar Cz_D1 15pF | CJO=Cz_d1 | CJO=Cz_d2 |
| aplacvar Rs_D1 1 | M=0.3333 | M=0.3333 |
| aplacvar Cz_D2 300pF | RS=Rs_d1 | RS=Rs_d2 |
| aplacvar Rs_D2 0.3 | VJ=0.6 | VJ=0.6 |
| aplacvar Lgnd 100pH | TT=100n | TT=100n |
| aplacvar Rgnd 100m | | |
| aplacvar Cgnd 0.4pF | | |
| aplacvar Lbump 50pH | | |
| aplacvar Rbump 20m | | |

2 Ordering information scheme



3 Package information

Figure 8. Flip-Chip package dimensions

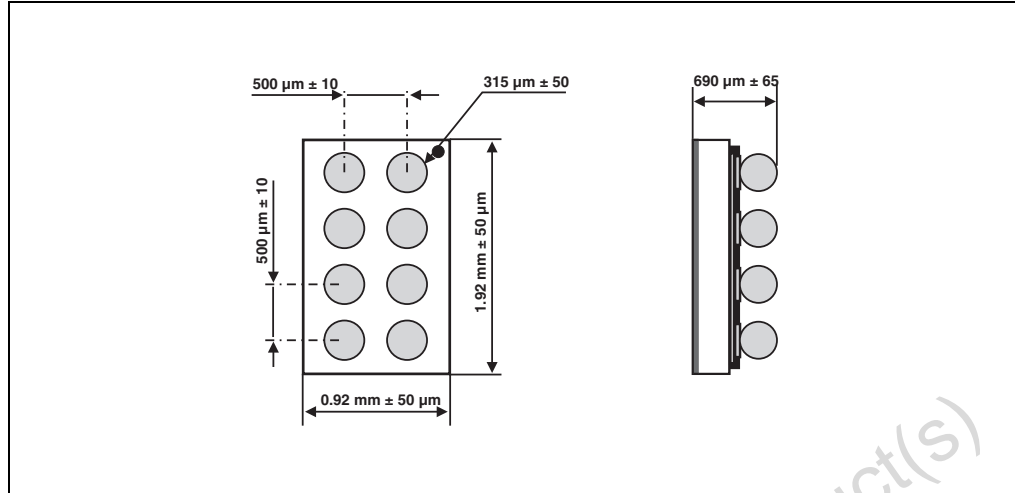


Figure 9. Foot print recomendations

Figure 10. Marking

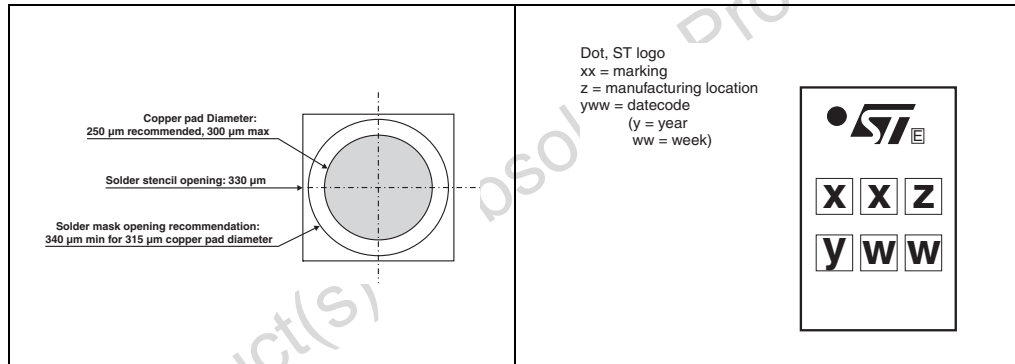
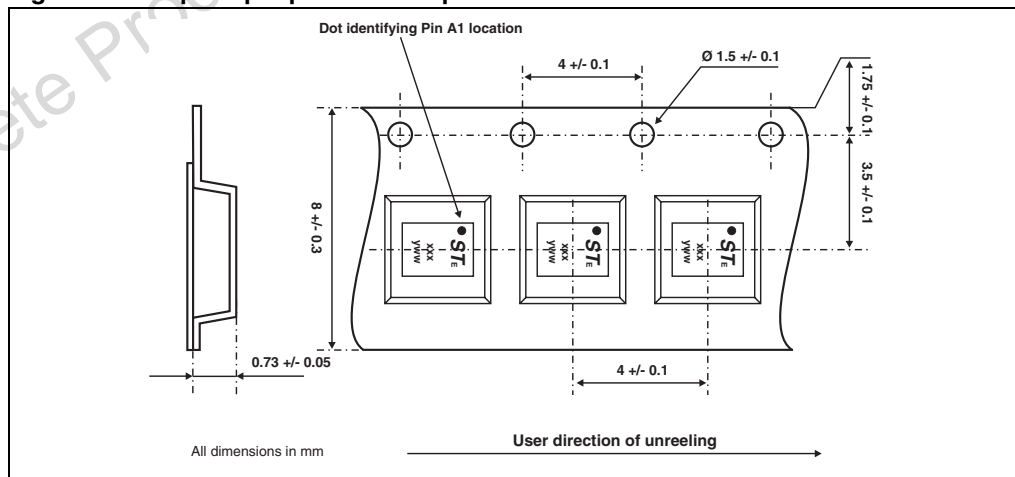


Figure 11. Flip-Chip tape and reel specification



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

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.

4 Ordering information

| Ordering code | Marking | Package | Weight | Base qty | Delivery mode |
|----------------|---------|-----------|--------|----------|------------------|
| EMIF02-USB05C2 | GV | Flip-Chip | 2.7 mg | 5000 | Tape and reel 7" |

5 Revision history

| Date | Revision | Changes |
|-------------|----------|---|
| 14-Mar-2005 | 1 | Initial release. |
| 13-Nov-2006 | 2 | Reformatted to current standards. Modified functional diagram on page 1 to show connections. Updated Aplac model information. |

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