



EMIF08-2005QEJ

IPAD™

EMI FILTER INCLUDING ESD PROTECTION

APPLICATIONS:

Where EMI filtering in ESD sensitive equipment is required :

- Computers and printer
- Communication systems
- Mobile phones

DESCRIPTION

The EMIF08-2005QEJ is a highly integrated device designed to suppress EMI/RFI noise in all systems subjected to electromagnetic interferences. Additionally, the EMIF08-2005QEJ filter includes an ESD protection circuitry which prevents destruction when subjected to ESD discharge up to 15kV.

BENEFITS

- EMI symmetrical low-pass filter
- Low PCB space consuming: 9 mm²
- Very thin package < 1 mm
- High reliability offered by monolithic integration

COMPLIES WITH THE FOLLOWING STANDARDS:

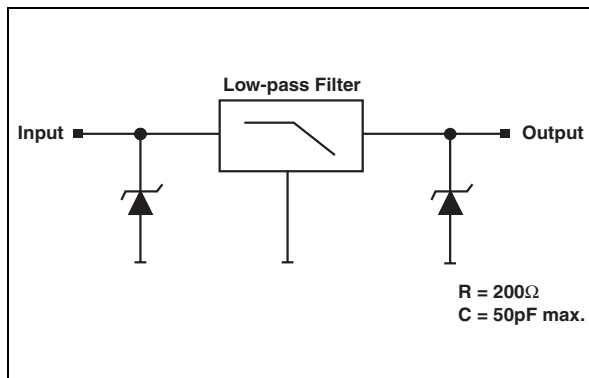
IEC61000-4-2:

15kV (air discharge)
8kV (contact discharge)

MIL STD 883E - Method 3015-7 Class 3:

25kV (human body test)

Figure 3: Basic Cell Configuration



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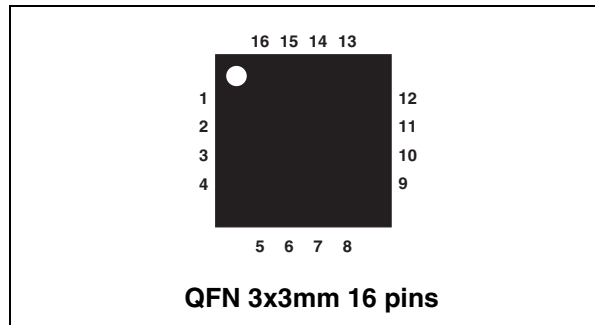


Table 1: Order Code

| Part Number | Marking |
|----------------|---------|
| EMIF08-2005QEJ | EM08 |

Figure 2: Pin Configuration

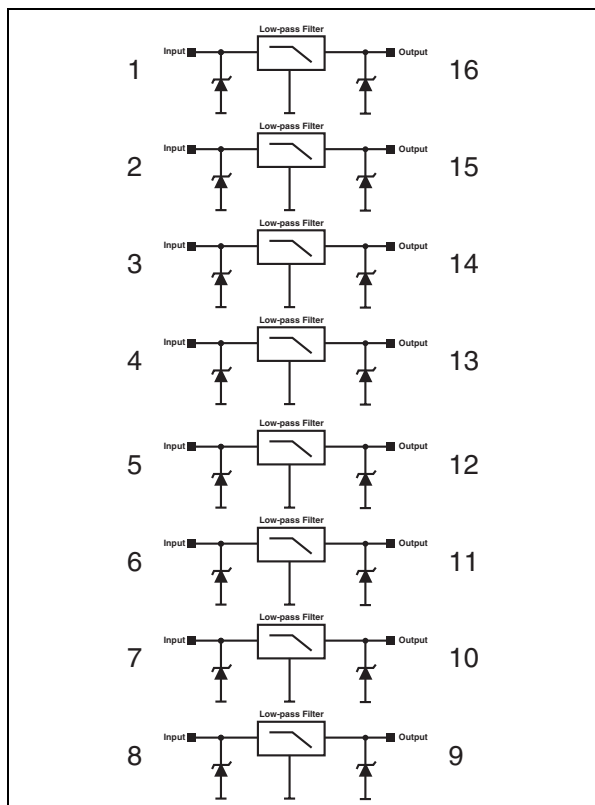
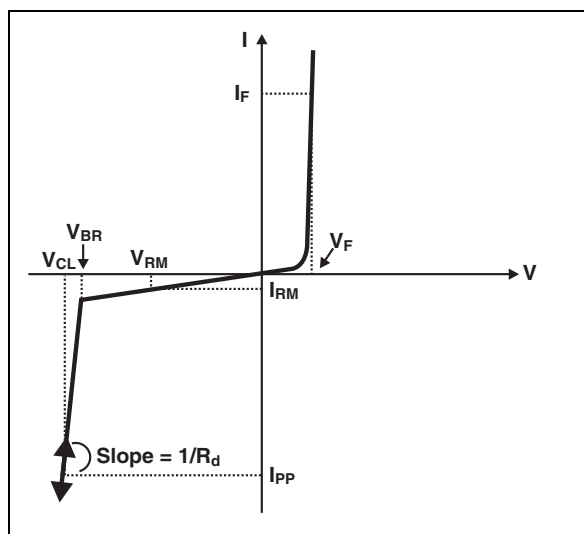


Table 2: Absolute Ratings ($T_{amb} = 25^{\circ}C$)

| Symbol | Parameter and test conditions | | Value | Unit |
|-----------|--|---|---------------------|-------------|
| V_{PP} | ESD discharge | EC61000-4-2 air discharge IEC61000-4-2 contact discharge | ± 15 ± 8 | kV |
| T_j | Junction temperature | | 125 | $^{\circ}C$ |
| T_{stg} | Storage temperature range | | - 55 +150 | $^{\circ}C$ |
| T_L | Maximum lead temperature for soldering | | 260 | $^{\circ}C$ |

Table 3: Electrical Characteristics ($T_{amb} = 25^{\circ}C$)

| 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 |
| αT | Voltage temperature coefficient |
| V_F | Forward voltage drop |
| $R_{I/O}$ | Series resistance between Input & Output |
| C_{line} | Input capacitance per line |



| Symbol | Test conditions | Min. | Typ. | Max. | Unit |
|-----------|---|------|------|------|----------|
| V_{BR} | $I_R = 1 \text{ mA}$ | 6 | 8 | 10 | V |
| I_{RM} | $V_{RM} = 3V \text{ per line}$ | | | 500 | nA |
| R_d | $I_{PP} = 10A, t_p = 2.5\mu s$ | | 1 | | Ω |
| $R_{I/O}$ | | 180 | 200 | 220 | Ω |
| C_{in} | $V_{bias} = 0V \quad F = 1MHz \quad V_{osc} = 30mV$ | | 45 | 50 | pF |

Figure 3: Filtering behavior

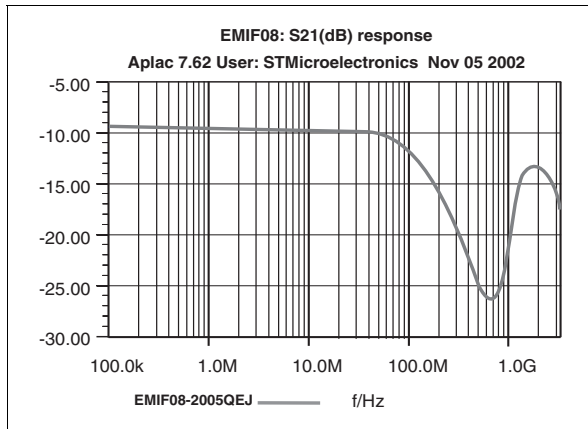


Figure 4: Capacitance versus reverse applied voltage

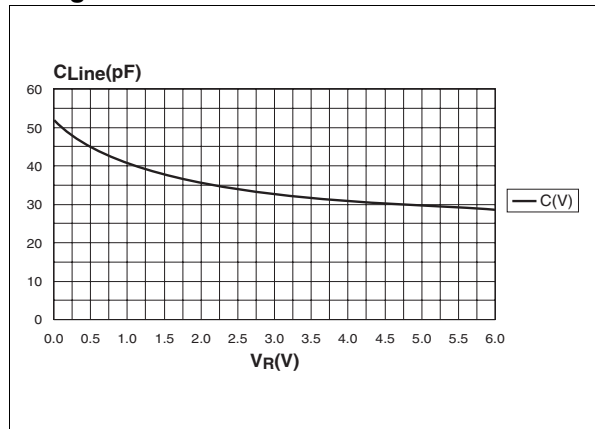


Figure 5: Ordering Information Scheme

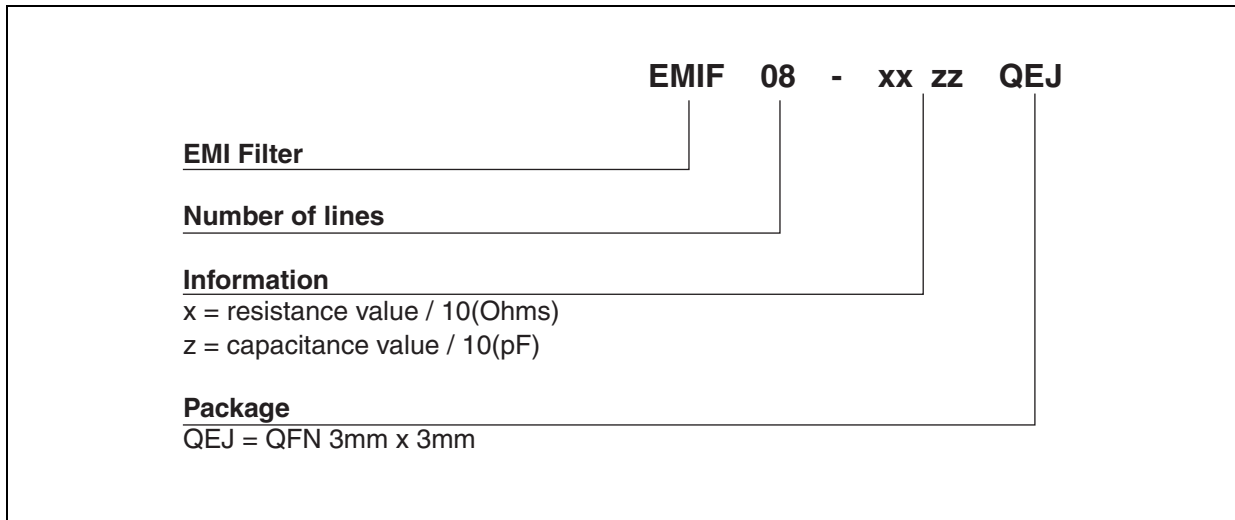


Figure 6: QFN Package Mechanical Data

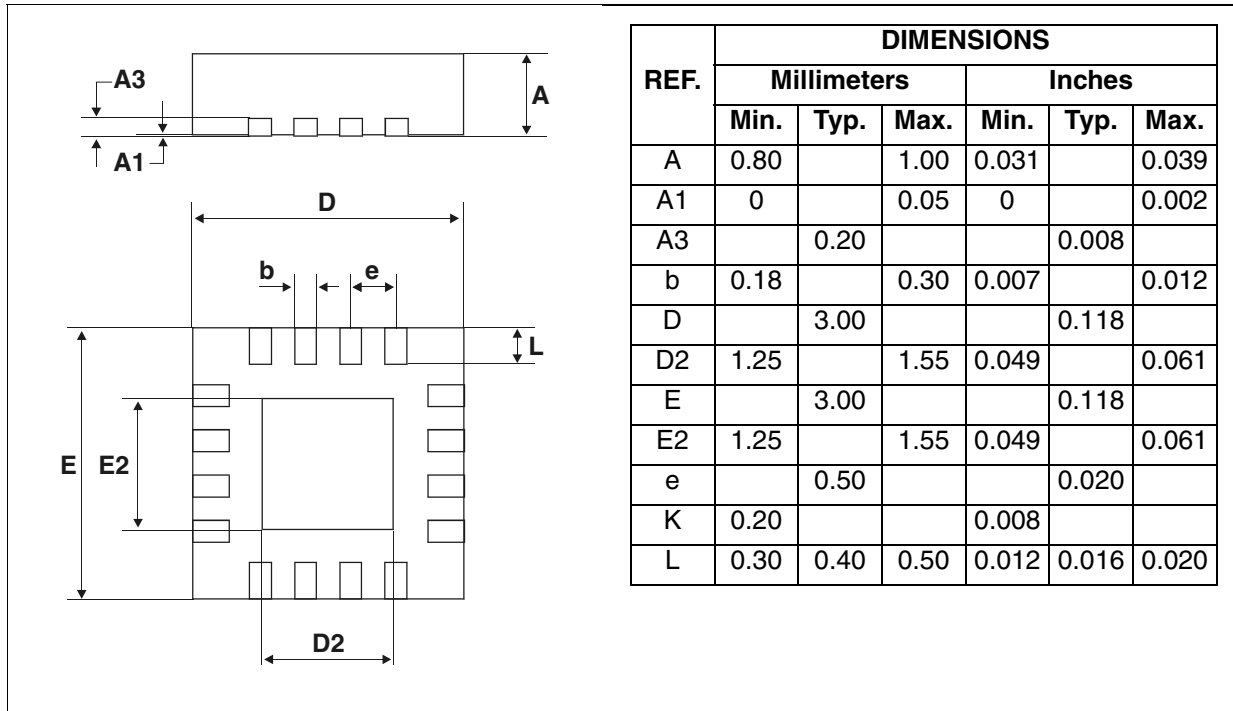


Figure 7: Foot Print Dimensions (in millimeters)

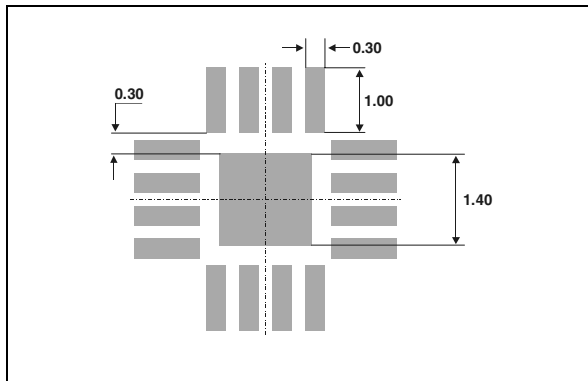


Table 4: Ordering Information

| Ordering code | Marking | Package | Weight | Base qty | Delivery mode |
|----------------|---------|-----------------|---------|----------|---------------|
| EMIF08-2005QEJ | EM08 | QFN 3x3 16 pins | 22.1 mg | 3000 | Tape & reel |

Table 5: Revision History

| Date | Revision | Description of Changes |
|-------------|----------|--|
| Dec-2002 | 2A | Last issue. |
| 03-Jan-2005 | 3 | Minor template update. No content change. |
| 01-Apr-2005 | 4 | QFN package mechanical data update: 1/ References A typ., A1 typ., b typ. D2 typ. and E2 typ. removed. 2/ Reference D2 changed from 0.25 min. to 1.25 min. and from 1.25 max. to 1.55 max. 3/ Reference E2 changed from 0.25 min. to 1.25 min. and from 1.25 max. to 1.55 max. 4/ Footprint updated, in compliance with IPC-SM-782. |

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