



# 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 mm<sup>2</sup>
- Very thin package < 1 mm
- High reliability offered by monolithic integration

### COMPLIES WITH THE FOLLOWING STANDARDS:

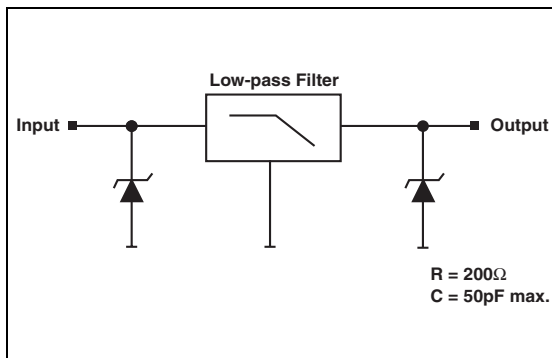
#### IEC61000-4-2:

- 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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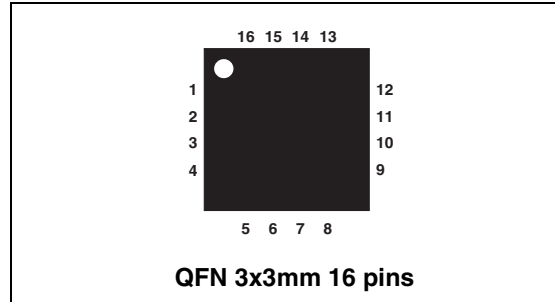
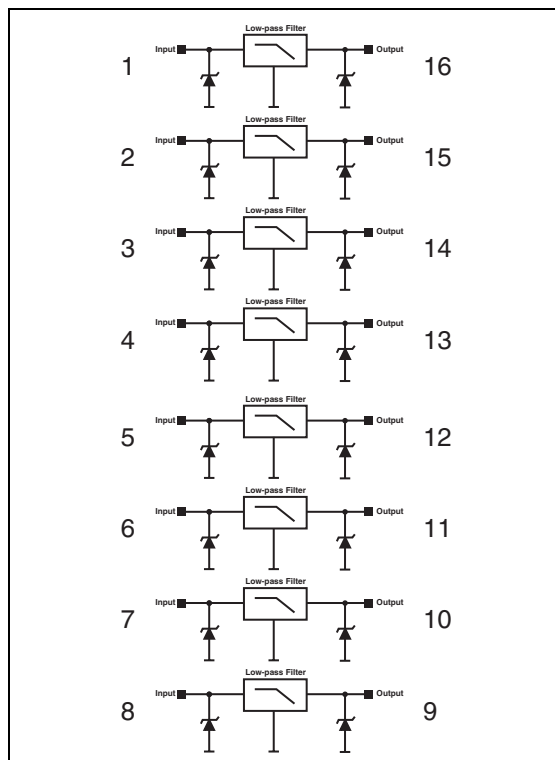


Table 1: Order Code

Part Number	Marking
EMIF08-2005QEJ	EM08

Figure 2: Pin Configuration



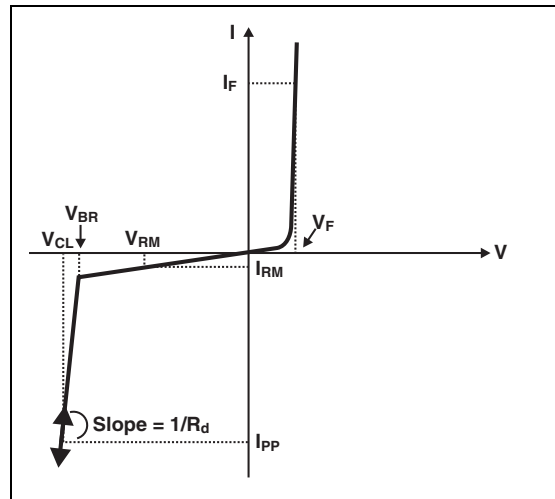
## EMIF08-2005QEJ

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

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

**Table 3: 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
$V_{CL}$	Clamping voltage
$I_{PP}$	Peak pulse current
$\alpha T$	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
$I_{RM}$	$V_{RM} = 3\text{V}$ per line			500	nA
$R_d$	$I_{PP} = 10\text{A}$ , $t_p = 2.5\mu\text{s}$		1		$\Omega$
$R_{I/O}$		180	200	220	$\Omega$
$C_{in}$	$V_{bias} = 0\text{V}$ $F = 1\text{MHz}$ $V_{osc} = 30\text{mV}$		45	50	pF

Figure 3: Filtering behavior

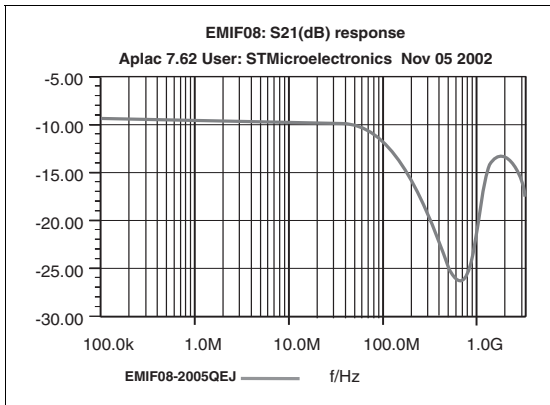


Figure 4: Capacitance versus reverse applied voltage

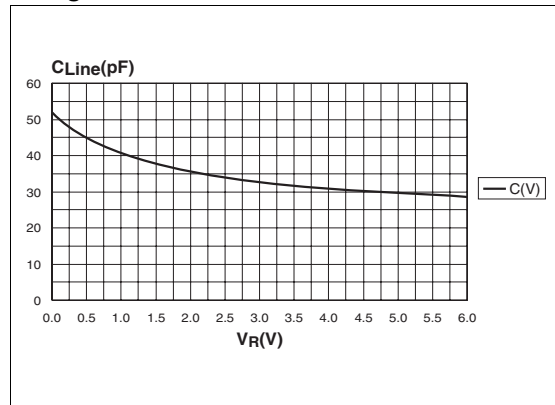


Figure 5: Ordering Information Scheme

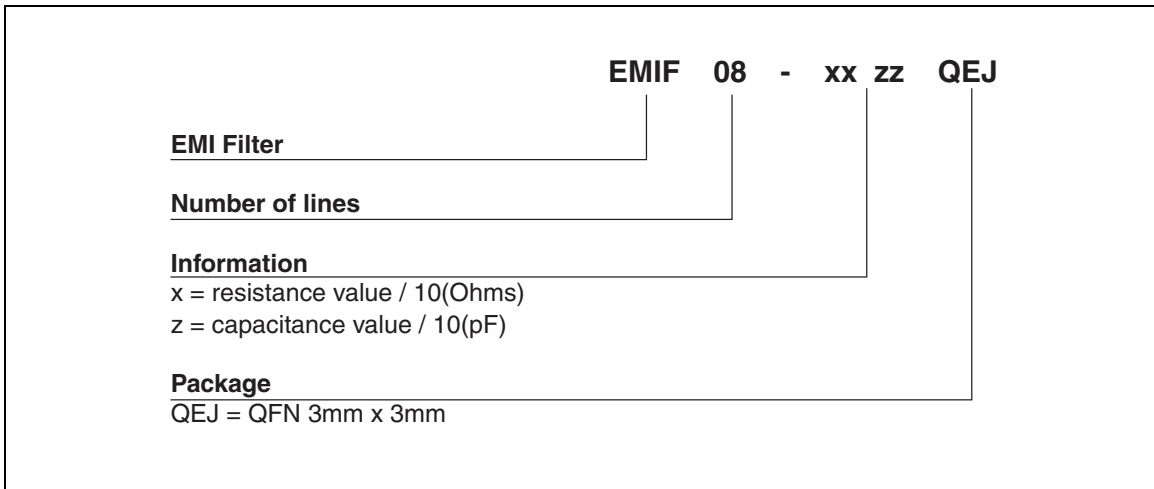


Figure 6: QFN Package Mechanical Data

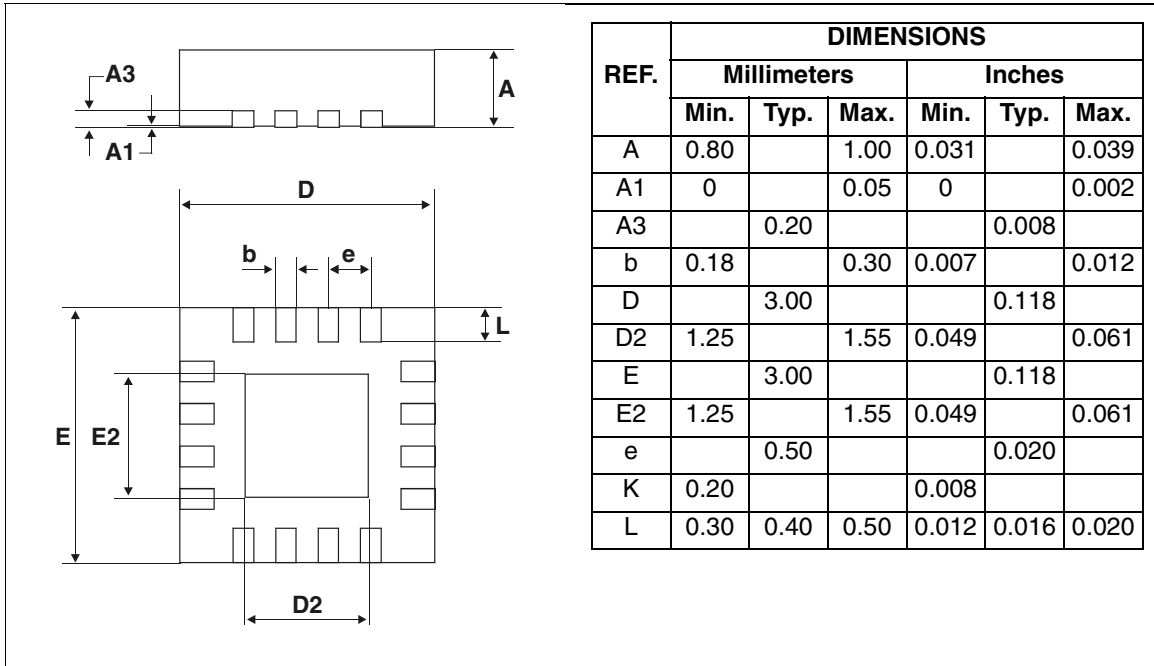


Figure 7: Foot Print Dimensions (in millimeters)

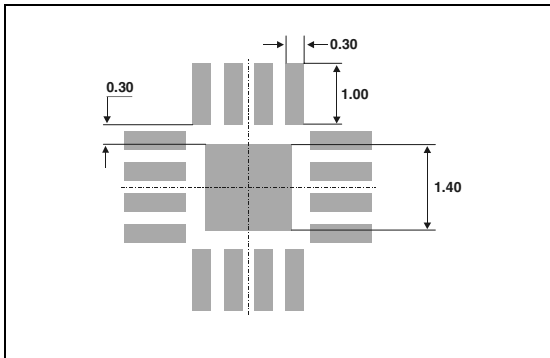


Table 4: Ordering Information

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	<b>QFN package mechanical data update:</b> 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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