

CSPEMI607

4-Channel LCD EMI Filter Array with ESD Protection plus 4-Channel of ESD Protection Array

Features

- Four channels of EMI filtering
- Four channels of ESD Protection
- ±15kV ESD protection (IEC 61000-4-2, contact discharge)
- ±30kV ESD protection (HBM)
- Better than 30dB of attenuation at 1GHz for 15pF-100Ω-15pF filter configuration
- Chip scale packaging features extremely low lead inductance for optimum filter and ESD performance

General Description

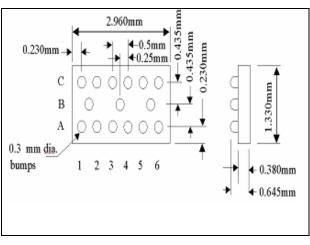
Applications

- LCD data lines in mobile handsets
- I/O port protection for mobile handsets, notebook computers, PDAs etc.
- EMI filtering for data ports in cell phones, PDAs or notebook computers.

CAMD's CSPEMI607 is an EMI filter array with ESD protection, which integrates four Pi- filters (C-R-C) and 4 channels of ESD protection. The CSPEMI607 has component values of $15pF-100\Omega-15pF$). The parts include avalanche-type ESD diodes on every pin, which provide a very high level of protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). The ESD diodes connected to the filter ports and the standalone ESD diode channels are designed and characterized to safely dissipate ESD strikes of $\pm 15kV$, beyond the maximum requirement of the IEC 61000-4-2 international standard. Using the MIL-STD-883 (Method 3015) specification for Human Body Model (HBM) ESD, the pins are protected for contact discharges at greater than $\pm 30kV$.

This device is particularly well suited for portable electronics (e.g. mobile handsets, PDAs, notebook computers) because of its small package format and easy-to-use pin assignments. In particular, the CSPEMI607 is ideal for EMI filtering and protecting data lines from ESD for the LCD display in mobile handsets.

The CSPEMI607 is available in a space-saving, low-profile, chip-scale package, and is fabricated with one of California Micro Devices' semiconductor processes.



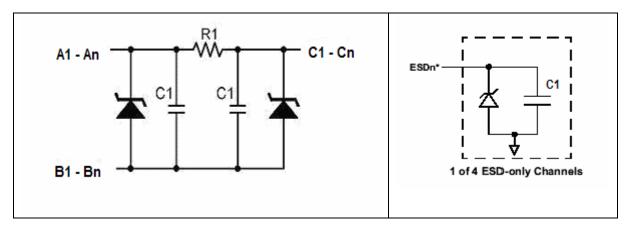
Package Diagram

Downloaded from Elcodis.com electronic components distributor



Figure 1. Dimensions of CSPEMI607.

Schematic Diagram

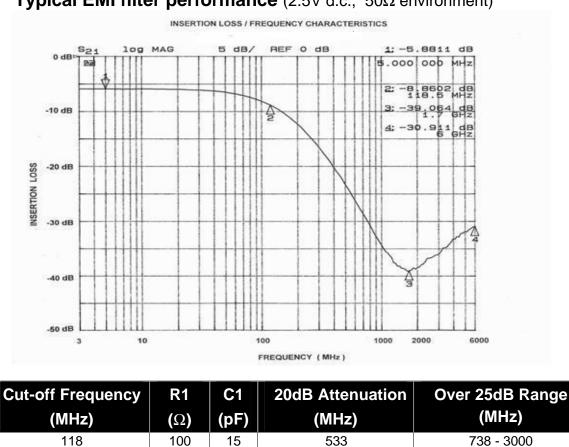


Pin Number	Pin Description	Pin Number	Pin Description	
A1	ESD Channel #1	B3	GND	
A2	Filter #1	C1	ESD Channel #3 Filter #1 Filter #2 Filter #3 Filter #4	
A3	Filter #2	C2		
A4	Filter #3	C3		
A5	Filter #4	C4		
A6	ESD Channel #2	C5		
B1	GND	C6 ESD Channel		
B2	GND			

Specifications: (At 25°C unless specified otherwise)	Min.	Тур.	Max.	Unit
Resistance R1	80	100	120	Ω
Capacitance C1 at 2.5V dc; 1MHz, 30mV ac	12	15	18	pF
Stand-off Voltage, I = 10µA	5.5			V
Diode Leakage at +/-3.3V reverse bias voltage		100		nA
Signal Clamp Voltage:				
Positive Clamp, 10mA	5.6	6.8	9.0	V
Negative Clamp, -10mA	-1.5	-0.8	-0.4	V
In-system ESD withstand voltage*:				
Human Body Model (MIL-STD-883, method 3015)	±30			kV
IEC 61000-4-2, contact discharge method	±15			kV
Clamping voltage during ESD discharge* Positive		12		V
MIL-STD-883 (Method 3015), 8kV Negative		-7		V
Temperature Range:				
Operating	-40		85	°C
Storage	-65		150	
DC Power per Resistor:			0.1	W
DC Package Power Rating:			0.5	W

* ESD applied to input / output pins with respect to GND, one at a time. Clamping voltage is measured at the opposite side of the EMI filter to the ESD pin (i.e. if ESD is applied to pin A1 then clamping voltage is measured at pin C1). Unused pins are left open. These parameters are guaranteed by design.

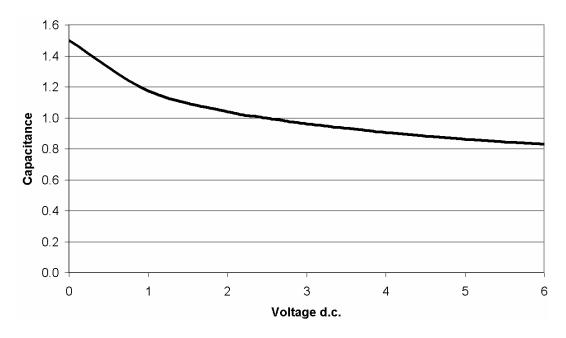




Typical EMI filter performance (2.5V d.c., 50Ω environment)

All parameters in the table are typical values.

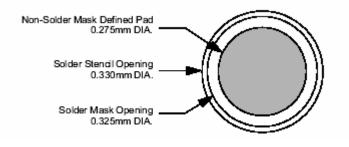
Typical diode capacitance vs. input voltage (normalized to 2.5V d.c.)

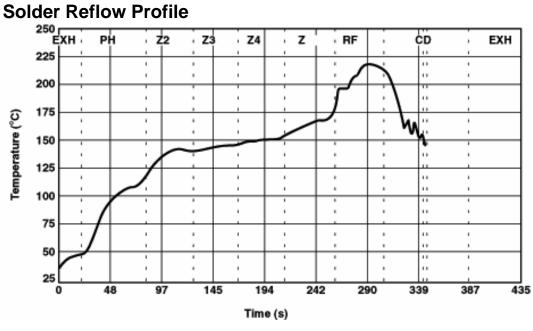


11/18/03 Tel: (408) 263-3214 • Fax: (408) 263-7846 • Website: <u>www.calmicro.com</u>



PRINTED CIRCUIT BOARD RECOMMENDATIONS				
Pad size in PCB	0.275mm			
Pad Shape	Round			
Pad Definition	Non Solder Mask Defined Pads			
Solder Mask Opening	0.325mm Round			
Solder Stencil Thickness	0.125mm - 0.150mm			
Solder Stencil Aperture Opening (Laser cut, 5% tapered walls)	0.330mm (round)			
Solder Flux Ratio	50/50 by volume			
Solder Paste Type	No Clean			
Bond Trace Finish	OSP (Entek Cu Plus 106A)			
Tolerance – Edge to Corner Ball	±50µm			
Solder Ball Side Coplanarity	±20µm			
Soldering Minimum Temperature	205'C for at least 30 seconds			
Maximum Dwell Time above Liquidous (183°C)	60 seconds			
Soldering Maximum Temperature	240'C for at less than 2 minutes			





11/18/03 Tel: (408) 263-3214 • Fax: (408) 263-7846 • Website: www.calmicro.com



Tape & Reel Information

C	MD PART #	CHIP SIZE (mm)	POCKET SIZE (mm) Bo x Ao x Ko	TAPE WIDTH W	REEL DIAMETER	QTY PER REEL	Po	P ₁
С	SPEMI607	2.96 x 1.33 x 0.6	TBD	8mm	178mm (7")	3500	4mm	4mm

