



## KEYBOARD/MOUSE FILTER AND ESD PROTECTION CIRCUIT

### Features

- Integrated network contains complete filter, solution and ESD protection diodes.

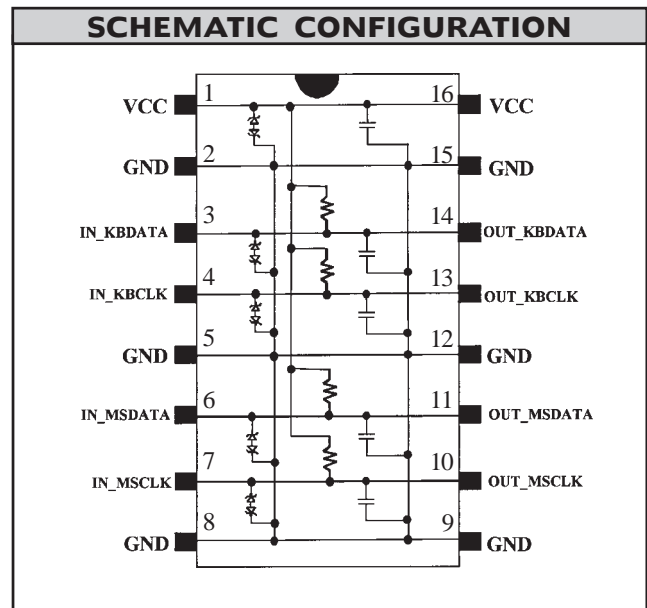
### Application

- EMI/RFI filter and ESD protection for keyboard/mouse port

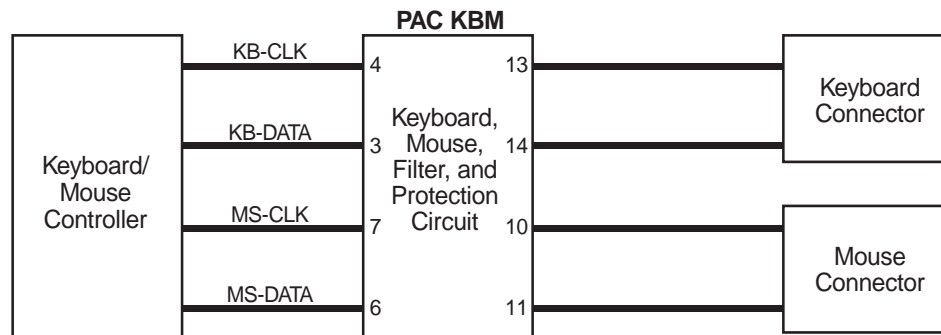
### Product Description

The signals from the keyboard/mouse controller contain high frequency EMI signals that must be reduced before the connector. Likewise, the signals from the keyboard/mouse controller must be protected from any possible external charges such as static electricity. The PACKBM provides filtering and pull-up termination of the keyboard and mouse signals as well as ESD protection.

STANDARD SPECIFICATIONS	
Absolute Tolerance (4.7KΩ resistors)	±10%
Absolute Tolerance (470pF capacitors)	±20%
Operating Temperature Range	0°C to 70°C
ESD Protection (Human Body Model)	>4kv*
MIL-STD-883, Method 3015 (Note 1,2)	>8KV*
In System Protection (Note 2)	
Package	16-pin QSOP



### Block Diagram





STANDARD PART ORDERING INFORMATION				
Package		Ordering Part Number		
Pins	Style	Tubes	Tape & Reel	Part Marking
16	QSOP	PACKBM/T	PACKBM/R	PACKBM

ESD PROTECTION		
	MIN	MAX
ESD Protection		
Peak Discharge Voltage at any I/O, Human Body Model, Method 3015(Note 1,2)	-4KV	+4KV
In System Protection, HBM (Note 2)	-8KV	+15KV
In System Protection, IEC 1000-4-2, Level 2 (Note 2,3)	-4KV	+4KV
Channel Clamp Voltage @ 8KV ESD Pulses, HBM (Note 1,2)	< -30V	< +30V

- Note 1: Human Body Model per MIL-STD-883, Method 3015  
 $C_{Discharge} = 100pF$ ,  $R_{Discharge} = 1.5 KW$ , pins 1 and 16 @ 5V and pins 2, 5, 8, 9, 12, 15 @ ground.
- Note 2: Pins 2, 5, 8, 9, 12, 15 grounded, pins 1 and 16 to  $V_{CC}$ , all other pins are open. ESD contact discharge between ground and pins 3, 4, 6, 7,10, 11, 13, 14, one at a time.
- Note 3: Standard IEC 1000-4-2 with  $C_{Discharge} = 150pF$ ,  $R_{Discharge} = 330W$ , pins 1, 16 @ 5V and pins 2, 5, 8, 9, 12, 15 @ ground.