Z8614

KEYBOARD CONTROLLER (KBC™) NMOS Z8® 8-BIT MCU

DESCRIPTION

The Z8614 Keyboard Controller (KBC™) introduces a new level of sophistication to single-chip architecture. The Z8614 is a member of the Z8 single-chip microcontroller family with 4 Kbytes of ROM.

The Z8614 KBC is housed in 40-lead DIP and 44-lead PLCC packages, and is manufactured in NMOS technology. Zilog's microcontroller offers fast execution, efficient use of memory, sophisticated interrupt, input/output bit manipulation capabilities, and easy hardware/software system expansion along with low cost and low power consumption.

The KBC architecture is characterized by a flexible I/O scheme, an efficient register, I/O, and a number of ancillary features that are useful in keyboard applications.

The device applications demand powerful I/O capabilities. The KBC fulfills this with 32 pins dedicated to input and output. These lines are grouped into four ports, each port consists of eight lines, and are configurable under software control to provide timing, status signals, and serial or parallel I/O ports.

The Z8614 offers low EMI emission achieved by means of several modifications in the output drivers and clock circuitry of the device.

There are two basic address spaces available to support this wide range of configurations: Program Memory and 124 General-Purpose Registers.

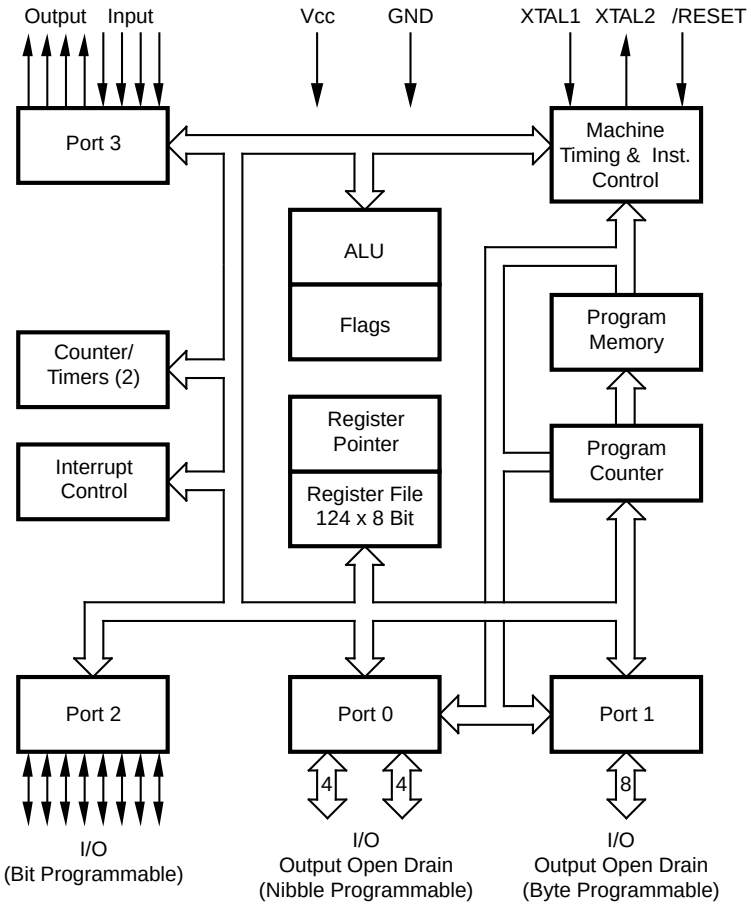
The KBC offers two on-chip counter/timers with a large number of user selectable modes. This unburdens the program from coping with real-time problems such as counting/timing.

Notes:
All Signals with a preceding front slash, "/", are active Low, e.g., B//W (WORD is active Low); /B/W (BYTE is active Low, only).

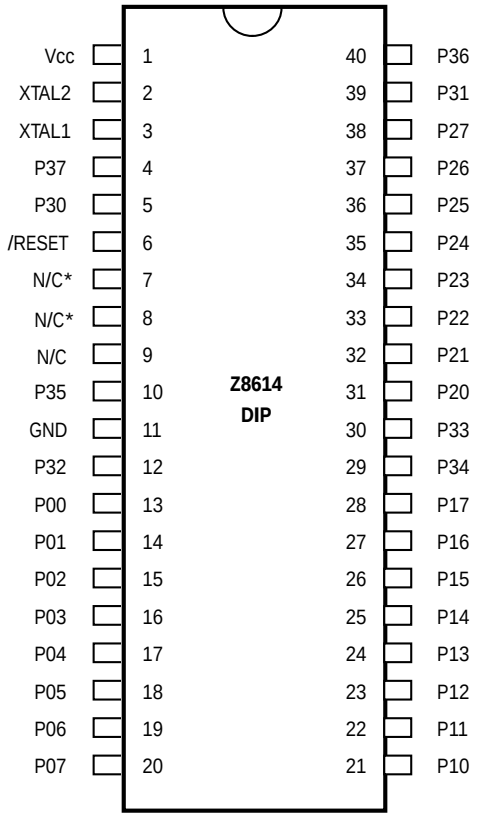
Power connections follow conventional descriptions below:

Connection	Circuit	Device
Power	V_{CC}	V_{DD}
Ground	GND	V_{SS}

GENERAL DESCRIPTION (Continued)

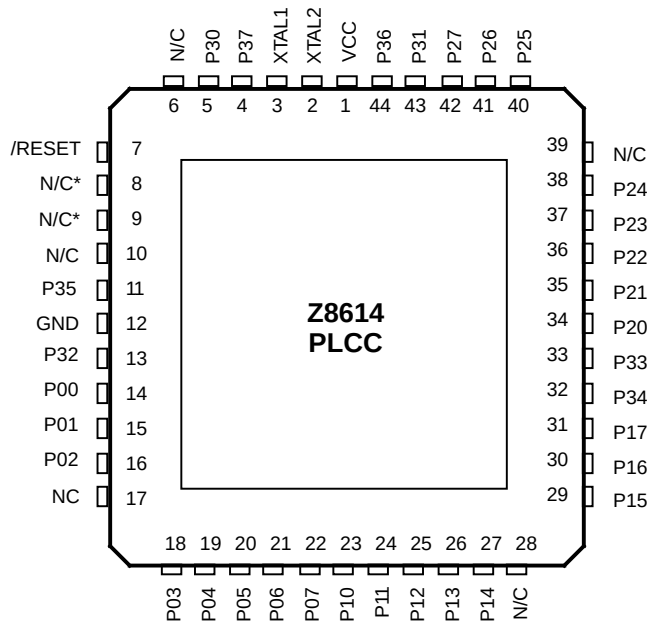


Functional Block Diagram



Note: Pins 7 and 8 actually are connected to the chip, although used only for testing. These pins must be used as floaters by the customer.

40-Lead DIP Pin Configuration



Note: Pins 8 and 9 actually are connected to the chip, although used only for testing. These pins must be used as floaters by the customer.

44-Lead PLCC Pin Configuration

DC CHARACTERISTICS

V_{CC} = 4.75 V to 5.25V @ 0°C to +70°C

Symbol	Parameter	Min	Max	Typ*	Unit	Condition
V_{CH}	Clock Input High Voltage	3.8	V_{CC}		V	Driven by External Clock Generator
V_{CL}	Clock Input Low Voltage	–0.3	0.8		V	Driven by External Clock Generator
V_{IH}	Input High Voltage	2.0	V_{CC}		V	
V_{IL}	Input Low Voltage	–0.3	0.8		V	
V_{RH}	Reset Input High Voltage	3.8	V_{CC}		V	
V_{RL}	Reset Input Low Voltage	–0.3	0.8		V	
V_{OH}	Output High Voltage	2.0			V	I_{OH}= –250 µA (Port 2 only)
	Output High Voltage	2.4			V	I_{OH}= –250 µA (Port 3 only)
V_{OL}	Output Low Voltage		0.8		V	I_{OL}= +4.0 mA (see Note 1 below)
I_{IL}	Input Leakage	–10	10		µA	V_{IN} = 0V, 5.25V
I_{OL}	Output Leakage	–10	10		µA	V_{IN} = 0V, 5.25V
I_{IR}	Reset Input Current		–50		µA	V_{IN} = 0V, 5.25V
I_{CC}	V_{CC}Supply Current		150	135	mA	

Note:

* Typical @ 25°C

1. A combined total of six I/O pins from Ports 2 and 3 may be used to sink 10 mA at 0.8 V_{OL} (max three pins per port). These may be used for LEDs or as general purpose outputs requiring high sink current.

Zilog, Inc. 210 East Hacienda Ave.
Campbell, CA 95008-6600
Telephone (408) 370-8000
Telex 910-338-7621
FAX 408 370-8056