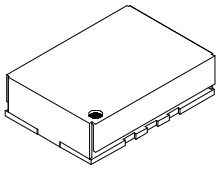
Pletronics, Inc.
19013 36th Ave. W, Suite H • Lynnwood, WA 98036 USA
Manufacturer of High Quality Frequency Control Products

PE3145B PECL Series



- 4 Pad Leadless Surface Mount Clock Oscillator
- Differential PECL Output without Enable/ Disable Function

10.00 MHz – 170.00 MHz
See PE1145T for higher frequencies

Standard Specifications

Overall Frequency Stability	± 50 PPM, ± 25 PPM, ± 20 PPM over Operating Temperature Range
Operating Temperature Range	0 to +80°C is standard, but can be extended to −40 to +85°C for certain frequencies
Supply Voltage (Vcc)	3.3 volts ± 10% standard, but 5.0 volts or 2.5 volts also available
Supply Current (Icc)	60 to 70 mA typical, 90 mA maximum for ≥70 MHz. For < 70 MHz, consult factory
Jitter	1 pS RMS maximum, from 12 kHz to 20 MHz from carrier for ≥ 70 MHz. For < 70 MHz, consult factory
Output Load	Output must be terminated into 50 ohms to (Vcc - 2.0 V). See Test Circuit 5 and Note 1.

Output Waveform PECL with Differential Output (see Waveform 2)	Symmetry	45/55% to 55/45% at 50% of Vcc level standard, tighter symmetry available
	Tr & Tf	1.0 nS max (20 to 80%) for ≥70 MHz. For < 70 MHz, consult factory
	Logic "1"	Vcc - 1.025 volts minimum
	Logic "0"	Vcc - 1.620 volts maximum

Note 1:
In the typical PECL 100K logic output Voh is 2.35 volts and Vol is 1.60 volts at 3.3 Vcc. The center voltage of the PECL is therefore1.975 volts. If a 50 ohm resistor is placed between the output and Vcc – 2 volts (1.3 volts), the current through the resistor is (1.975 – 1.3) / 50 = 13.5 mA. The same load can be simulated by a resistor of 147 ± 1% ohms to ground (1.975 / 0.0135 = 146.29 ohms). If additional load current is placed on the output, its load current must be subtracted from the 13.5 mA to calculate a new load resistor. Using similar calculations, use 274 ± 1% ohms to ground for 5.0V operation.

Part Numbering Guide

Packaging
Tray or
24mm tape,
16mm pitch

PE31 45 B Y -- 70.0M

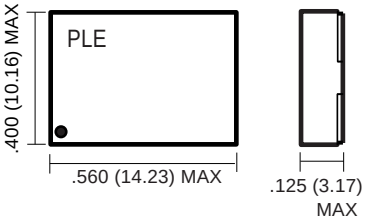
- PE31 45 B: Model
- 70.0M: Frequency in MHz
- B: Frequency Stability
  - 45 = ± 50 PPM
  - 44 = ± 25 PPM
  - 20 = ± 20 PPM
- Y: Special Specifications (choose all that apply)
  - E: Extended Operating Temperature Range (- 40 to +85°C)
  - F: 47.5 /52.5% Symmetry at 50% of Vcc
  - V: Supply Voltage of 3.3 volts ± 10%
  - W: Supply Voltage of 2.5 volts ± 5%
  - Y: Supply Voltage of 5.0 volts ± 10%

Consult factory for available frequencies and specs. Not all options available for all frequencies. A special part number may be assigned.
Frequency Stability is inclusive of frequency shifts due to calibration, temperature, supply voltage, shock, vibration and load

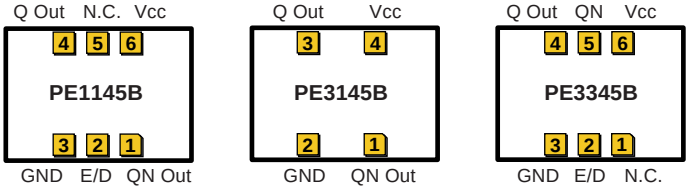
Mechanical: inches (mm) not to scale

Due to part size and factory abilities, part marking may vary from lot to lot and may contain our part number or an internal code.

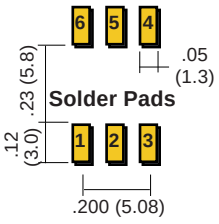
PE1145B Series
PE3X45B Series



Possible Pinout Options, Consult Factory for Alternate Pinouts



(Remove center pads for PE3145B)



May 2002