



New Product Announcement

PI6CBE33xx3

PCIe 5.0/6.0 Clock Buffers with 6-, 8-, and 12-Output Support Zero Delay/Fanout Mode

The PI6CBE33xx3 series are PCIe® 5.0/6.0 clock buffers with 6-, 8-, and 12-channels of low-power HCSL output with on-chip termination and 33Ω output impedance.

The series has very low 12fs additive phase jitter in fanout buffer mode and supports ultra path interconnect (UPI) and quick path interconnect (QPI) applications.

The devices can be configured into either ZDB or fanout-buffer mode through hardware or SMBus control.

The individual-channel OE pin provides flexible power management. 100MHz or 133.33MHz clock frequency is supported in ZDB mode, and 1MHz to 400MHz is supported in fanout-buffer mode.

The family is available in the small footprint TQFN package, ranging from 5x5mm to 9x9mm.



The DIODES Advantage

The PI6CBE33xx3's low-additive phase jitter enhances system timing margin in high-speed connectivity applications.

- **Low 12fs Additive Phase Jitter In Fanout Buffer Mode**
Minimizes phase noise for increased system timing margin
- **Individual OE Pin for Each Output**
Allows dynamic routing and enhances power saving
- **Hardware or SMBus Control to Select ZDB Mode or Fanout Buffer Mode**
Enables HW pin or register setting options to select either ZDB or fanout mode
- **Available in 6-, 8-, and 12-Output Family Variants**
Meets various system clock tree design requirements

Applications

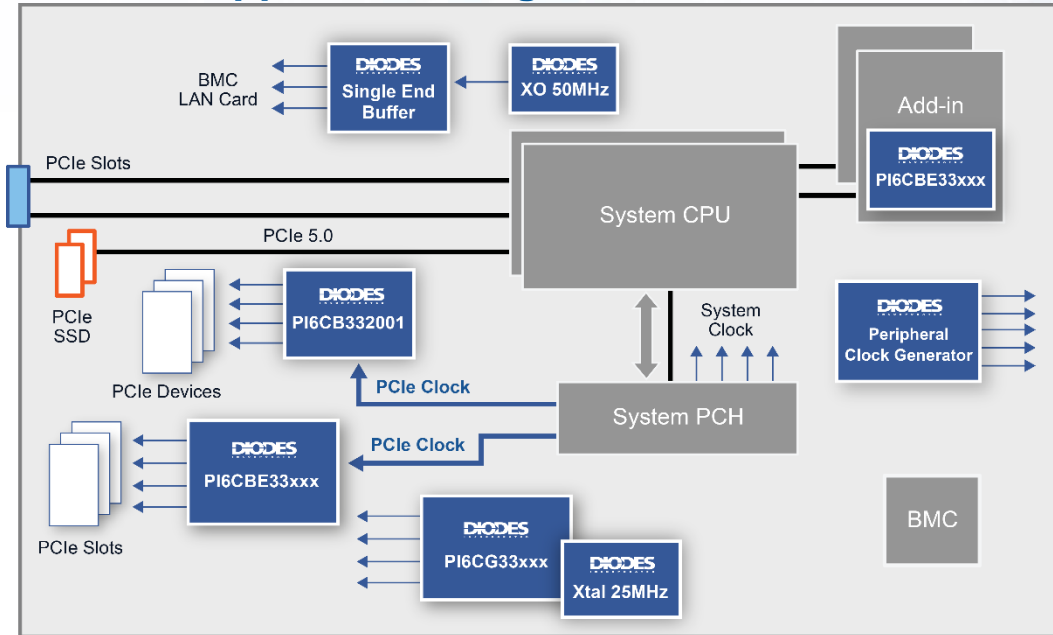
- Servers and data centers
- Surveillance systems

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Typical Server Application Diagram



PI6CBE33x3 Portfolio

| Part Number | Outputs | Output Types | Additive Jitter (Typ) | V _{DD} | Maximum Output Frequency | Input Types | Temperature Range | Package |
|-----------------------------|---------|--------------|-----------------------|-----------------|--------------------------|-------------|-------------------|---------|
| | | | fs | V | MHz | | °C | |
| PI6CBE33063 | 6 | HCSL | 12 | 3.3 | 400 | HCSL | -40 to +85 | TQFN-40 |
| PI6CBE33083 | 8 | HCSL | 12 | 3.3 | 400 | HCSL | -40 to +85 | TQFN-48 |
| PI6CBE33123 | 12 | HCSL | 12 | 3.3 | 400 | HCSL | -40 to +85 | TQFN-64 |

Ordering Information

| Orderable Part Number | Compliance (Only Automotive Supports PPAP) | Package Code | Package | Moisture Sensitivity | Packing | |
|--|--|--------------|------------|----------------------|----------|-------------|
| | | | | | Quantity | Reel |
| PI6CBE33603ZLAIEX PI6CBE33603ZLAIEX-13R | Standard | ZLA40 | 5x5mm TQFN | MSL-1 | 2,500 | Tape & Reel |
| PI6CBE33803ZLIEIX PI6CBE33803ZLIEIX-13R | Standard | ZL48 | 6x6mm TQFN | MSL-1 | 2,500 | Tape & Reel |
| PI6CBE33123ZDIEIX PI6CBE33123ZDIEIX-13R | Standard | ZD64 | 9x9mm TQFN | MSL-3 | 2,500 | Tape & Reel |