

## Product Overview

### NB7VQ1006M: Fanout Buffer, Equalizer Receiver, 10 Gbps, 1.8 V / 2.5 V, with 1:6 Differential CML Outputs

For complete documentation, see the data sheet.

The NB7VQ1006M is a high performance EQualizer Receiver (signal enhancer) that operates up to 10 Gbps/7.5 GHz with a 1.8 V or 2.5 V power supply. When placed in series with a Data/Clock path, it will enhance the degraded signal transmitted across a FR4 backplane or cable interconnect and output six identical CML copies of the input signal. The EQualizer ENable pin (EQEN) allows the IN/IN inputs to either flow through or bypass the EQualizer section. Control of the EQualizer function is realized by setting EQEN. When EQEN is set Low, the IN / IN inputs bypass the Equalizer. When EQEN is set High, the IN / IN inputs flow through the Equalizer. The default state at start-up is LOW. The differential Data/Clock inputs incorporate a pair of internal 50-ohm termination resistors, in a 100-ohm center-tapped configuration, via the VT Pin and will accept differential LVPECL, CML or LVDS logic levels. This feature provides transmission line termination on-chip, at the receiver end, eliminating external components. The NB7VQ1006M is a member of the PEEQ GigaComm™ family of high performance Data/Clock products.

#### Features

- Maximum Input Data Rate > 10 Gbps
- Maximum Input Clock Frequency > 7.5 GHz
- Backplane and Cable Interconnect Compensation
- Differential CML Outputs, 400 mV Peak-to-Peak, Typical
- Operating Range:  $V_{CC} = 1.71 \text{ V to } 2.625 \text{ V}$ ,  $GND = 0 \text{ V}$
- $-40^{\circ}\text{C to } +85^{\circ}\text{C}$  Ambient Operating Temperature

#### Benefits

- Higher Data rate
- Higher Data rate
- Longer trace runs
- Design Flexibility
- Design Flexibility
- Design Flexibility

#### Applications

- Backplane and Cable Interconnect Compensation

#### Part Electrical Specifications

| Product         | Compliance  | Status | Type          | Channels | Input / Output Ratio | Input Level | Output Level | $V_{CC}$ Typ (V) | $t_{jitter, RMS}$ Typ (ps) | $t_{skew(0-90)}^{Max}$ (ps) | $t_{pd}$ Typ (ns) | $t_r$ & $t_f$ Max (ps) | $f_{max, Clock}$ Typ (MHz) | $f_{max, Data}$ Typ (Mbps) | Package Type |
|-----------------|-------------|--------|---------------|----------|----------------------|-------------|--------------|------------------|----------------------------|-----------------------------|-------------------|------------------------|----------------------------|----------------------------|--------------|
| NB7VQ1006MMNG   | Pb-free     | Active | Signal Driver | 1        | 1:6                  | CML         | CML          | 2.5              | 0.2                        | 25                          | 0.225             | 65                     | 7500                       | 10000                      | QFN-24       |
|                 | Halide free |        |               |          |                      | ECL         |              | 1.8              |                            |                             |                   |                        |                            |                            |              |
|                 |             |        |               |          |                      | LVDS        |              |                  |                            |                             |                   |                        |                            |                            |              |
| NB7VQ1006MMNTXG | Pb-free     | Active | Signal Driver | 1        | 1:6                  | LVDS        | CML          | 2.5              | 0.2                        | 25                          | 0.225             | 65                     | 7500                       | 10000                      | QFN-24       |
|                 | Halide free |        |               |          |                      | CML         |              | 1.8              |                            |                             |                   |                        |                            |                            |              |
|                 |             |        |               |          |                      | ECL         |              |                  |                            |                             |                   |                        |                            |                            |              |

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