# CSM65: GMII Pad Set

## Libraries

| Name | Process | CUP | Form Factor |
|---|---|---|---|
| RGO_CSM65_25V33_G_30C_GMII | G | yes | staggered |
| RGO_CSM65_25V33_LP_30C_GMII | LP | yes | staggered |
| RGO_CSM65_25V33_G_50C_GMII | G | yes | Inline |
| RGO_CSM65_25V33_LP_50C_GMII | LP | yes | Inline |

## Summary

This library includes MIP_BI_001_33V_NC pad, designed to conform to the Gigabit Media Independent Interface™ (GMII™) specification intended for use between Ethernet PHYs and Switch ASICs. Under IEEE 802.3-2005 a GMII comprised of 8 pins for data and control is defined.
Power bus architecture and physical dimensions of this library are fully compatible with Aragio's standard I/O libraries (*RGO_CSM65_25V33_xx_30C* and *RGO_CSM65_25V33_xx_50C*).

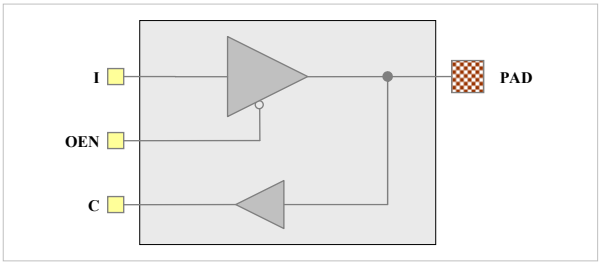
## Absolute maximum ratings

| Symbol | Description | Value | Units |
|---|---|---|---|
| $V_{VDD}$ | Core supply voltage range | -0.5 to 1.6 | V |
| $V_{DVDD}$ | I/O supply voltage range | -0.5 to 3.8 | V |
| $V_{PAD}$ | Voltage range at PAD | -0.5 to ($V_{DVDD}$ + 0.5) | V |
| $T_J$ | Junction operating temperature range | -55 to 150 | °C |

## Recommended operating conditions

| Symbol | Description | Min | Nom | Max | Units |
|---|---|---|---|---|---|
| $V_{DVDD}$ | I/O supply voltage | 2.97 | 3.30 | 3.63 | V |
| $T_A$ | Ambient operating temperature | 0 | 25 | 100 | °C |
| $V_{VDD}$ | Core supply voltage | 0.9 | 1.0 to 1.2 | 1.32 | V |
| $T_J$ | Junction temperature | -40 | 25 | 125 | °C |
| $V_{PAD}$ | Voltage at PAD | 0 | - | $V_{DVDD}$ | V |
| $V_{IH}$ | Input logic high | 1.7 | - | - | V |
| $V_{IL}$ | Input logic low | - | - | 0.9 | V |
| $V_{IL\ AC}$ | Input high voltage AC | 1.9 | - | - | V |
| $V_{IH\ AC}$ | Input low voltage AC | - | - | 0.7 | V |
| $V_{OH}$ | Output high | 2.1 | - | 3.6 | V |
| $V_{OL}$ | Output low | 0 | - | 0.5 | V |
| F | Frequency | 125 - 100ppm | | 125 + 100ppm | MHz |

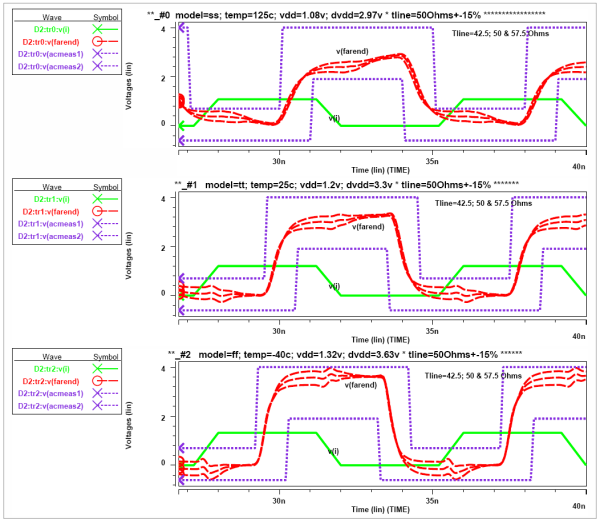
## MIx_BI_001_33V_NC – MII I/O Pad




## AC Characteristics

| Symbol | Parameter | Max | Unit |
|---|---|---|---|
| F | Max frequency | 125 | MHz |
| $P_{DISS}$ | Power dissipation | 40.1 | µW / MHz |

## Simulation Results



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## Characterization Corners

| Nominal VDD | Model | VDD | DVDD = 3.3V | Temperature |
|---|---|---|---|---|
| 1.2 [1] | FF | +10% | +10% | -40°C |
| | FF | +10% | +10% | 125°C |
| | TT | nominal | nominal | 25°C |
| | SS | -10% | -10% | -40°C |
| | SS | -10% | -10% | 125°C |
| 1.1 [2] | FF | +10% | +10% | -40°C |
| | FF | +10% | +10% | 125°C |
| | TT | nominal | nominal | 25°C |
| | SS | -10% | -10% | -40°C |
| | SS | -10% | -10% | 125°C |
| 1.0 | FF | +10% | +10% | -40°C |
| | FF | +10% | +10% | 125°C |
| | TT | nominal | nominal | 25°C |
| | SS | -10% | -10% | -40°C |
| | SS | -10% | -10% | 125°C |

[1] LP process only.
[2] G process only

## Cell summary

| Name | Description |
|---|---|
| MIP_BI_001_33V_NC | GMII pad (staggered configuration) |
| MIC_BI_001_33V_NC | GMII pad (inline configuration) |

## Physical size

| Name | Width | Height | Units |
|---|---|---|---|
| MIP_BI_001_33V_NC | 30 | 180 | µm |
| MIC_BI_001_33V_NC | 50 | 120 | µm |



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