



Restricting Transmitter Amplitude

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TX Output

TX Swing can vary from 800mV to 1.2V.

TX Termination impedance can have at least 10% variation

Min TX Rise time at the pin can be 47ps

How to Restrict TX Amplitude

R1 thin film Resistor

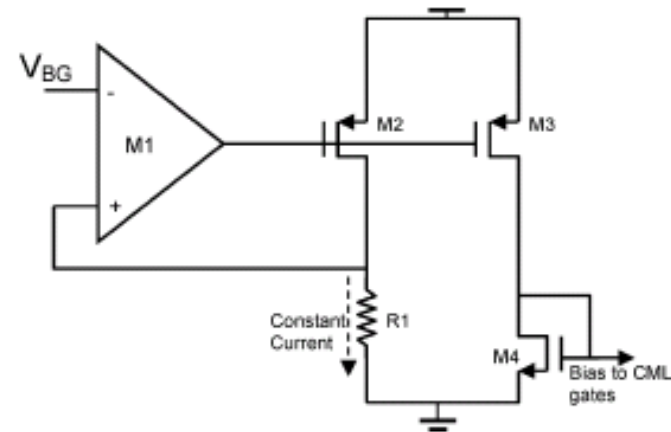
Vbg is low voltage bandgap

Vbg variation less than 3%

Vds mismatch between M4 and Current sources used in the CML Stage can be constrained to 2%

Vgs of M4 is the Bias Voltage for all the CML circuits which remains relatively constant

Output voltage variation taking all circuit variation into account is restricted to 5% (Simulation Data).



bias circuit for CML gates

References

A low voltage CMOS bandgap reference

Yeong-Tsair Lin; Wen-Yaw Chung; Dong-Shiu Wu; Ho-Cheng Lin; Lin,

A CMOS 10-gb/s SONET transceiver

Thomas, T.P.; Young, I.A