

IP Type	IP Partner	Process Technology(nm)	Description
ADC	Synopsys	12	12-bit, 80MSPS, 0.8V High Speed SAR IQ-ADC in TSMC12FFC
ADC	Synopsys	12	12-bit, 320MSPS, 0.8V High Speed SAR IQ-ADC in TSMC12FFC
ADC	Synopsys	12	12-bit, 160MSPS, 0.8V High Speed SAR IQ-ADC in TSMC12FFC
ADC	Synopsys	16	12-bit, 80MSPS, 0.8V High Speed SAR IQ-ADC in TSMC16FFC
ADC	Synopsys	16	12-bit, 160MSPS, 0.8V High Speed SAR IQ-ADC in TSMC16FFC
ADC	Synopsys	16	12-bit, 320MSPS, 0.8V High Speed SAR IQ-ADC in TSMC16FFC
ADC	Synopsys	16	12-bit, 160MSPS, 0.8V High Speed SAR ADC in TSMC16FFC
ADC	Synopsys	28	12-bit, 5MSPS, 1.8V SAR ADC with Differential Input Mux in TSMC28HPC+
ADC	Synopsys	28	12-bit, 80MSPS, 0.9V High Speed SAR IQ-ADC in TSMC28HPCP18
ADC	Synopsys	28	12-bit, 160MSPS, 0.9V High Speed SAR IQ-ADC in TSMC28HPCP18
ADC	Synopsys	28	12-bit, 320MSPS, 0.9V High Speed SAR IQ-ADC in TSMC28HPC+18
ADC	Synopsys	40	12-bit, 5MSPS, 3.3V SAR ADC with 19:1 Differential Input Mux in TSMC40ULP+eF
ADC	Synopsys	40	14-bit, 2.5MSPS, 3.3V SAR ADC with 20:1 Differential Input Mux in TSMC40ULP
ADC	Synopsys	40	12-bit, 2.5MSPS, 3.3V area optimized SAR ADC with 19:1 Single-Ended Input Mux in TSMC40ULP
ADC	Synopsys	90	12-bit, 2.5MSPS, 3.3V area-optimized SAR ADC with 8:1 Single-ended Input Mux in TSMC90FS
DAC	Synopsys	12	12-bit, 640MSPS, 1.8V Current steering IQ-DAC in TSMC12FFC
DAC	Synopsys	12	12-bit, 20MSPS, 1.8V General Purpose DAC with Voltage Buffer in TSMC12FFC
DAC	Synopsys	16	12-bit, 640MSPS, 1.8V Current Steering IQ-DAC in TSMC16FFC
DAC	Synopsys	16	12-bit, 20MSPS, 1.8V General Purpose DAC with Voltage Buffer in TSMC16FFC
DAC	Synopsys	28	12-bit, 640MSPS, 1.8V Current Steering IQ-DAC in TSMC28HPC+18
PLL	True Circuits	7	TSMC CLN7FF 7nm Clock Generator PLL - 800MHz-4000MHz
PLL	True Circuits	7	TSMC CLN7FFLVT 7nm Deskew PLL - 300MHz-1500MHz
PLL	True Circuits	7	TSMC CLN7FF 7nm Spread Spectrum PLL - 700MHz-3500MHz
PLL	True Circuits	7	TSMC CLN7FF 7nm Ultra PLL - 15MHz-3250MHz
PLL	True Circuits	7	TSMC CLN7FF 7nm Deskew PLL - 400MHz-2000MHz
PLL	True Circuits	7	TSMC CLN7FF 7nm General Purpose PLL - 400MHz-2000MHz
PLL	True Circuits	7	TSMC CLN7FF 7nm IoT PLL - 30MHz-1000MHz
PLL	True Circuits	7	TSMC CLN7FF 7nm Clock Generator PLL - 800MHz-4000MHz
PLL	True Circuits	7	TSMC CLN7FFLVT 7nm Deskew PLL - 300MHz-1500MHz
PLL	True Circuits	7	TSMC CLN7FF 7nm IoT PLL - 30MHz-1000MHz
PLL	True Circuits	12	TSMC CLN12FFCLL 12nm IoT PLL - 30MHz-1000MHz
PLL	True Circuits	16	TSMC CLN16FF+LL 16nm Ultra PLL - 15MHz-3250MHz
PLL	True Circuits	16	TSMC CLN16FFCLL 16nm Clock Generator PLL - 800MHz-4000MHz
PLL	True Circuits	16	TSMC CLN16FFCLL 16nm IoT PLL - 30MHz-1000MHz
PLL	True Circuits	16	TSMC CLN16FF+GL 16nm IoT PLL - 30MHz-1000MHz
PLL	True Circuits	16	TSMC CLN16FF+LL 16nm IoT PLL - 30MHz-1000MHz
PLL	True Circuits	20	TSMC CLN20SOC 20nm Clock Generator PLL - 700MHz-3500MHz
PLL	True Circuits	20	TSMC CLN20SOC 20nm Deskew PLL - 700MHz-3500MHz
PLL	True Circuits	20	TSMC CLN20SOC 20nm Spread Spectrum PLL - 306MHz-1530MHz

PLL	True Circuits	20	TSMC CLN20SOC 20nm General Purpose PLL - 350MHz-1750MHz
PLL	True Circuits	20	TSMC CLN20SOC 20nm Spread Spectrum PLL - 153MHz-766MHz
PLL	True Circuits	22	TSMC CLN22ULP 22nm IoT PLL - 30MHz-1250MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm Clock Generator PLL - 700MHz-3500MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm Clock Generator PLL - 350MHz-1750MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm Clock Generator PLL - 175MHz-875MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm Deskew PLL - 700MHz-3500MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm Deskew PLL - 350MHz-1750MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm Deskew PLL - 175MHz-875MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm General Purpose PLL - 350MHz-1750MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm Spread Spectrum PLL - 600MHz-3000MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm Spread Spectrum PLL - 300MHz-1500MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm Spread Spectrum PLL - 150MHz-750MHz
PLL	True Circuits	28	TSMC CLN28HP 28nm General Purpose PLL - 350MHz-1750MHz
PLL	True Circuits	28	TSMC CLN28LP 28nm General Purpose PLL - 160MHz-800MHz
PLL	True Circuits	28	TSMC CLN28HPM 28nm General Purpose PLL - 350MHz-1750MHz
PLL	True Circuits	28	TSMC CLN28HPL 28nm General Purpose PLL - 220MHz-1100MHz
PLL	True Circuits	28	TSMC CLN28HPM 28nm Clock Generator PLL - 175MHz-875MHz
PLL	True Circuits	28	TSMC CLN28HPL 28nm Clock Generator PLL - 440MHz-2200MHz
PLL	True Circuits	28	TSMC CLN28HPL 28nm Clock Generator PLL - 220MHz-1100MHz
PLL	True Circuits	28	TSMC CLN28HPL 28nm Clock Generator PLL - 110MHz-550MHz
PLL	True Circuits	28	TSMC CLN28HPM 28nm Spread Spectrum PLL - 600MHz-3000MHz
PLL	True Circuits	28	TSMC CLN28HPM 28nm Spread Spectrum PLL - 300MHz-1500MHz
PLL	True Circuits	28	TSMC CLN28HPM 28nm Spread Spectrum PLL - 150MHz-750MHz
PLL	True Circuits	28	TSMC CLN28HPL 28nm Spread Spectrum PLL - 384MHz-1920MHz
PLL	True Circuits	28	TSMC CLN28HPL 28nm Spread Spectrum PLL - 192MHz-962MHz
PLL	True Circuits	28	TSMC CLN28HPL 28nm Spread Spectrum PLL - 96MHz-481MHz
PLL	True Circuits	28	TSMC CLN28LP 28nm IoT PLL - 30MHz-400MHz
PLL	True Circuits	28	TSMC CLN28HPC 28nm IoT PLL - 60MHz-875MHz
PLL	True Circuits	28	TSMC CLN28HPC+ 28nm IoT PLL - 60MHz-900MHz
PLL	True Circuits	40	TSMC CLN40G 40nm General Purpose PLL - 340MHz-1700MHz
PLL	True Circuits	40	TSMC CLN40LP 40nm General Purpose PLL - 150MHz-750MHz
PLL	True Circuits	40	TSMC CLN40ULP 40nm IoT PLL - 30MHz-375MHz
PLL	True Circuits	40	TSMC CLN40LP+ 40nm IoT PLL - 30MHz-375MHz
PLL	True Circuits	40	TSMC CLN40LP 40nm IoT PLL - 30MHz-375MHz
PLL	True Circuits	40	TSMC CLN40ULPOD 40nm IoT PLL - 30MHz-750MHz
PLL	True Circuits	55	TSMC CLN55GP 55nm General Purpose PLL - 260MHz-1300MHz
PLL	True Circuits	55	TSMC CLN55LP 55nm General Purpose PLL - 120MHz-600MHz
PLL	True Circuits	55	TSMC CLN55LP 55nm IoT PLL - 30MHz-300MHz
PLL	True Circuits	65	TSMC CLN65GP 65nm General Purpose PLL - 260MHz-1300MHz
PLL	True Circuits	65	TSMC CLN65LP 65nm General Purpose PLL - 120MHz-600MHz

PLL	True Circuits	65	TSMC CLN65ULP 65nm IoT PLL - 30MHz-500MHz
PLL	True Circuits	65	TSMC CLN65LP 65nm IoT PLL - 30MHz-300MHz
PLL	True Circuits	90	TSMC CLN90GT 90nm General Purpose PLL - 250MHz-1250MHz
PLL	True Circuits	90	TSMC CLN90GOD 90nm General Purpose PLL - 220MHz-1100MHz
PLL	True Circuits	90	TSMC CLN90G 90nm General Purpose PLL - 160MHz-800MHz
PLL	True Circuits	90	TSMC CLN90LP 90nm General Purpose PLL - 120MHz-600MHz
PLL	True Circuits	90	TSMC CLN90G 90nm Clock Generator PLL - 320MHz-1600MHz
PLL	True Circuits	90	TSMC CLN90G 90nm Clock Generator PLL - 80MHz-400MHz
PLL	True Circuits	90	TSMC CLN90G 90nm Clock Generator PLL - 160MHz-800MHz
PLL	True Circuits	90	TSMC CLN90GOD 90nm Clock Generator PLL - 110MHz-550MHz
PLL	True Circuits	90	TSMC CLN90GOD 90nm Clock Generator PLL - 220MHz-1100MHz
PLL	True Circuits	90	TSMC CLN90GOD 90nm Clock Generator PLL - 440MHz-2200MHz
PLL	True Circuits	90	TSMC CLN90GT 90nm Clock Generator PLL - 125MHz-625MHz
PLL	True Circuits	90	TSMC CLN90GT 90nm Clock Generator PLL - 250MHz-1250MHz
PLL	True Circuits	90	TSMC CLN90GT 90nm Clock Generator PLL - 500MHz-2500MHz
PLL	True Circuits	90	TSMC CLN90G 90nm Spread Spectrum PLL - 80MHz-400MHz
PLL	True Circuits	90	TSMC CLN90G 90nm Spread Spectrum PLL - 160MHz-800MHz
PLL	True Circuits	90	TSMC CLN90G 90nm Spread Spectrum PLL - 320MHz-1600MHz
PLL	True Circuits	90	TSMC CLN90GOD 90nm Spread Spectrum PLL - 110MHz-550MHz
PLL	True Circuits	90	TSMC CLN90GOD 90nm Spread Spectrum PLL - 220MHz-1100MHz
PLL	True Circuits	90	TSMC CLN90GOD 90nm Spread Spectrum PLL - 440MHz-2200MHz
PLL	True Circuits	90	TSMC CLN90G 90nm Deskew PLL - 80MHz-400MHz
PLL	True Circuits	90	TSMC CLN90G 90nm Deskew PLL - 160MHz-800MHz
PLL	True Circuits	90	TSMC CLN90G 90nm Deskew PLL - 320MHz-1600MHz
PLL	True Circuits	90	TSMC CLN90LP 90nm IoT PLL - 30MHz-300MHz
PLL	True Circuits	90	TSMC CLN85LP 90nm IoT PLL - 30MHz-300MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm General Purpose PLL - 220MHz-1100MHz
PLL	True Circuits	130	TSMC CL013LV 130nm General Purpose PLL - 160MHz-800MHz
PLL	True Circuits	130	TSMC CL013G 130nm General Purpose PLL - 136MHz-680MHz
PLL	True Circuits	130	TSMC CL013LP 130nm General Purpose PLL - 110MHz-550MHz
PLL	True Circuits	130	TSMC CL013LV 130nm Clock Generator PLL - 160MHz-800MHz
PLL	True Circuits	130	TSMC CL013LV 130nm Clock Generator PLL - 80MHz-400MHz
PLL	True Circuits	130	TSMC CL013LV 130nm Clock Generator PLL - 320MHz-1600MHz
PLL	True Circuits	130	TSMC CL013G 130nm Clock Generator PLL - 68MHz-340MHz
PLL	True Circuits	130	TSMC CL013G 130nm Clock Generator PLL - 136MHz-680MHz
PLL	True Circuits	130	TSMC CL013G 130nm Clock Generator PLL - 272MHz-1360MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm Clock Generator PLL - 440MHz-2200MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm Clock Generator PLL - 110MHz-550MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm Clock Generator PLL - 220MHz-1100MHz
PLL	True Circuits	130	TSMC CL013LP 130nm Clock Generator PLL - 55MHz-275MHz
PLL	True Circuits	130	TSMC CL013LP 130nm Clock Generator PLL - 110MHz-550MHz

PLL	True Circuits	130	TSMC CL013LP 130nm Clock Generator PLL - 220MHz-1100MHz
PLL	True Circuits	130	TSMC CL013G 130nm Spread Spectrum PLL - 272MHz-1360MHz
PLL	True Circuits	130	TSMC CL013G 130nm Spread Spectrum PLL - 136MHz-680MHz
PLL	True Circuits	130	TSMC CL013G 130nm Spread Spectrum PLL - 68MHz-340MHz
PLL	True Circuits	130	TSMC CL013LV 130nm Spread Spectrum PLL - 320MHz-1600MHz
PLL	True Circuits	130	TSMC CL013LV 130nm Spread Spectrum PLL - 160MHz-800MHz
PLL	True Circuits	130	TSMC CL013LV 130nm Spread Spectrum PLL - 80MHz-400MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm Spread Spectrum PLL - 110MHz-550MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm Spread Spectrum PLL - 220MHz-1100MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm Spread Spectrum PLL - 440MHz-2200MHz
PLL	True Circuits	130	TSMC CL013LP 130nm Spread Spectrum PLL - 55MHz-275MHz
PLL	True Circuits	130	TSMC CL013LP 130nm Spread Spectrum PLL - 110MHz-550MHz
PLL	True Circuits	130	TSMC CL013LP 130nm Spread Spectrum PLL - 220MHz-1100MHz
PLL	True Circuits	130	TSMC CL013G 130nm Deskew PLL - 136MHz-680MHz
PLL	True Circuits	130	TSMC CL013G 130nm Deskew PLL - 68MHz-340MHz
PLL	True Circuits	130	TSMC CL013LV 130nm Deskew PLL - 160MHz-800MHz
PLL	True Circuits	130	TSMC CL013LV 130nm Deskew PLL - 80MHz-400MHz
PLL	True Circuits	130	TSMC CL013LV 130nm Deskew PLL - 320MHz-1600MHz
PLL	True Circuits	130	TSMC CL013G 130nm Deskew PLL - 272MHz-1360MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm Deskew PLL - 110MHz-550MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm Deskew PLL - 220MHz-1100MHz
PLL	True Circuits	130	TSMC CL013LVOD 130nm Deskew PLL - 440MHz-2200MHz
PLL	True Circuits	130	TSMC CL013LP 130nm Deskew PLL - 55MHz-275MHz
PLL	True Circuits	130	TSMC CL013LP 130nm Deskew PLL - 110MHz-550MHz
PLL	True Circuits	130	TSMC CL013LP 130nm Deskew PLL - 220MHz-1100MHz
PLL	True Circuits	130	TSMC CL013LP 130nm IoT PLL - 30MHz-275MHz
PLL	True Circuits	150	TSMC CL015LV 150nm Clock Generator PLL - 70MHz-350MHz
PLL	True Circuits	150	TSMC CL015G 150nm Clock Generator PLL - 65MHz-325MHz
PLL	True Circuits	150	TSMC CL015G 150nm Clock Generator PLL - 130MHz-650MHz
PLL	True Circuits	150	TSMC CL015LV 150nm Clock Generator PLL - 140MHz-700MHz
PLL	True Circuits	150	TSMC CL015LV 150nm Clock Generator PLL - 280MHz-1400MHz
PLL	True Circuits	150	TSMC CL015G 150nm Clock Generator PLL - 260MHz-1300MHz
PLL	True Circuits	150	TSMC CL015G 150nm Spread Spectrum PLL - 260MHz-1300MHz
PLL	True Circuits	150	TSMC CL015G 150nm Spread Spectrum PLL - 130MHz-650MHz
PLL	True Circuits	150	TSMC CL015G 150nm Spread Spectrum PLL - 65MHz-325MHz
PLL	True Circuits	150	TSMC CL015LV 150nm Spread Spectrum PLL - 280MHz-1400MHz
PLL	True Circuits	150	TSMC CL015LV 150nm Spread Spectrum PLL - 140MHz-700MHz
PLL	True Circuits	150	TSMC CL015LV 150nm Spread Spectrum PLL - 70MHz-350MHz
PLL	True Circuits	150	TSMC CL015G 150nm Deskew PLL - 130MHz-650MHz
PLL	True Circuits	150	TSMC CL015G 150nm Deskew PLL - 65MHz-325MHz
PLL	True Circuits	150	TSMC CL015LV 150nm Deskew PLL - 140MHz-700MHz

PLL	True Circuits	150	TSMC CL015LV 150nm Deskew PLL - 70MHz-350MHz
PLL	True Circuits	150	TSMC CL015LV 150nm Deskew PLL - 280MHz-1400MHz
PLL	True Circuits	150	TSMC CL015G 150nm Deskew PLL - 260MHz-1300MHz
PLL	True Circuits	180	TSMC CL018E 180nm Clock Generator PLL - 130MHz-650MHz
PLL	True Circuits	180	TSMC CL018E 180nm Clock Generator PLL - 65MHz-325MHz
PLL	True Circuits	180	TSMC CL018G 180nm Clock Generator PLL - 55MHz-275MHz
PLL	True Circuits	180	TSMC CL018G 180nm Clock Generator PLL - 110MHz-550MHz
PLL	True Circuits	180	TSMC CL018E 180nm Clock Generator PLL - 260MHz-1300MHz
PLL	True Circuits	180	TSMC CL018G 180nm Clock Generator PLL - 220MHz-1100MHz
PLL	True Circuits	180	TSMC CL018LP 180nm Clock Generator PLL - 45MHz-225MHz
PLL	True Circuits	180	TSMC CL018LP 180nm Clock Generator PLL - 90MHz-450MHz
PLL	True Circuits	180	TSMC CL018LP 180nm Clock Generator PLL - 180MHz-900MHz
PLL	True Circuits	180	TSMC CL018LV 180nm Clock Generator PLL - 59MHz-295MHz
PLL	True Circuits	180	TSMC CL018LV 180nm Clock Generator PLL - 118MHz-590MHz
PLL	True Circuits	180	TSMC CL018LV 180nm Clock Generator PLL - 236MHz-1180MHz
PLL	True Circuits	180	TSMC CL018G 180nm Spread Spectrum PLL - 220MHz-1100MHz
PLL	True Circuits	180	TSMC CL018G 180nm Spread Spectrum PLL - 110MHz-550MHz
PLL	True Circuits	180	TSMC CL018G 180nm Spread Spectrum PLL - 55MHz-275MHz
PLL	True Circuits	180	TSMC CL018E 180nm Spread Spectrum PLL - 260MHz-1300MHz
PLL	True Circuits	180	TSMC CL018E 180nm Spread Spectrum PLL - 130MHz-650MHz
PLL	True Circuits	180	TSMC CL018E 180nm Spread Spectrum PLL - 65MHz-325MHz
PLL	True Circuits	180	TSMC CL018LP 180nm Spread Spectrum PLL - 45MHz-225MHz
PLL	True Circuits	180	TSMC CL018LP 180nm Spread Spectrum PLL - 90MHz-450MHz
PLL	True Circuits	180	TSMC CL018LP 180nm Spread Spectrum PLL - 180MHz-900MHz
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PLL	True Circuits	180	TSMC CL018LV 180nm Spread Spectrum PLL - 236MHz-1180MHz
PLL	True Circuits	180	TSMC CL018G 180nm Deskew PLL - 55MHz-275MHz
PLL	True Circuits	180	TSMC CL018G 180nm Deskew PLL - 110MHz-550MHz
PLL	True Circuits	180	TSMC CL018E 180nm Deskew PLL - 130MHz-650MHz
PLL	True Circuits	180	TSMC CL018E 180nm Deskew PLL - 65MHz-325MHz
PLL	True Circuits	180	TSMC CL018E 180nm Deskew PLL - 260MHz-1300MHz
PLL	True Circuits	180	TSMC CL018G 180nm Deskew PLL - 220MHz-1100MHz
PLL	True Circuits	180	TSMC CL018LP 180nm Deskew PLL - 45MHz-225MHz
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PLL	True Circuits	180	TSMC CL018LV 180nm Deskew PLL - 59MHz-295MHz
PLL	True Circuits	180	TSMC CL018LV 180nm Deskew PLL - 118MHz-590MHz
PLL	True Circuits	180	TSMC CL018LV 180nm Deskew PLL - 236MHz-1180MHz