

MICROCOMPUTER and PERIPHERAL LSI's

Peripheral LSI's

Type No.	Function	Maximum Ratings (Ta=25°C)	Electrical Characteristics (Ta=25°C)						
			Item	Symbol	Condition	min.	typ.	max.	Unit
MN6049	CMOS Frequency Synthesizer for TV	$V_{DD} = -0.3 \sim +9V$	Supply Current	I_{DD}	$V_{DD} = 7V$, Without load			15	mA
		$V_I = -0.3 \sim V_{DD} + 0.3V$	Power Consumption	P_{tot}				105	mW
		$V_O = -0.3 \sim V_{DD} + 0.3V$	Input Frequency Upper Limit	f_i	Input sine wave	15.6			MHz
		$T_{opr} = -20 \sim +70^\circ C$	Input Voltage Swing	V_i	Free running	0.7			V _{P-P}
		$T_{stg} = -55 \sim +100^\circ C$	Input Current	I_{I1}	LFI $V_I = V_{SS} \sim V_{DD}$	-50		+50	μA
		Operating Condition	"H" Level Input Voltage	V_{IH}	PI0 ~ PI3 LDI $V_I = V_{SS} \sim V_{DD}$	3.4		V_{DD}	V
			"L" Level Input Voltage	V_{IL}		V_{SS}		0.8	V
		$V_{DD} = 7V$	Input Current	I_{I2}	$V_I = V_{SS} \sim V_{DD}$	-10		+10	μA
		$V_{SS} = 0V$	"H" Level Output Voltage	V_{OH}	$I_{OH} = -0.05mA$, TM $\bar{O}$	6.0			V
		$T_a = 25^\circ C$	"L" Level Output Voltage	V_{OL}	$I_{OL} = 0.1mA$, TM $\bar{O}$			0.4	V
			Oscillation Frequency	f_{OSC}	Q1, Q $\bar{O}$		3.58		MHz
MN6142	CMOS PLL Frequency Synthesizer for FM/AM Radio	$V_{DD} = -0.3 \sim +10V$	Supply Current	I_{DD}	$V_{DD} = 6V$		3	5	mA
		$V_I = -0.3 \sim V_{DD} + 0.3V$	Power Consumption	P_{tot}			15	25	mW
		$V_O = -0.3 \sim V_{DD} + 0.3V$	"H" Level Input Voltage	V_{IH1}	$V_{DD} = 6V$ P0 ~ P3 C0 ~ C2	2.4		V_{DD}	V
		$P_D = 50mW$	"L" Level Input Voltage	V_{IL1}		V_{SS}		0.8	V
		$T_{opr} = -20 \sim +70^\circ C$	Input Current	I_{I1}	LD $V_I = V_{SS} \sim V_{DD}$			±10	μA
		$T_{stg} = -55 \sim +100^\circ C$	Input Voltage	V_{I2}	PI	1.0			V _{P-P}
		Operating Condition	Input Current	I_{I2}	PI, $V_I = 0V$ または6V	±1	±5	±25	μA
			Input Frequency Upper Limit	f_i	PI, $V_{DD} = 5.5 \sim 6.5V$	6			MHz
		$V_{DD} = 6V$	Oscillation Frequency	f_{OSC}	OSC1, OSC2		11.52		MHz
		$V_{SS} = 0V$	"H" Level Output Voltage	V_{OH}	CPO, QO $\frac{V_{DD}=6V}{I_{OH}=-100\mu A}$	4.0			V
		$T_a = 25^\circ C$	"L" Level Output Voltage	V_{OL}	CPO, QO $\frac{V_{DD}=6V}{I_{OL}=100\mu A}$			0.4	V
MN6145	CMOS PLL Frequency Synthesizer for FM/AM Radio	$V_{DD1} = -0.3 \sim +6V$	Supply Current	I_{DD}	$V_{DD} = 5V$, $T_a = 25^\circ C$			5	mA
		$V_{DD2} = -0.3 \sim +200V$	Power Consumption	P_{tot}				25	mW
		$V_{I1} = -0.3 \sim V_{DD1}$	Input Frequency Upper Limit	$f_{i(max)}$	LFI Input sine wave	7.2			MHz
		$V_{I2} = -0.3 \sim +18V$	Input Signal Swing	V_i	Free running	0.7			V _{P-P}
		$T_{opr} = -20 \sim +70^\circ C$	"H" Level Output Voltage	V_{OH}	PDO, LDO $I_{OH} = 3mA$	0.7 V_{DD}		V_{DD}	V
		$T_{stg} = -55 \sim +100^\circ C$	"L" Level Output Voltage	V_{OL}	CK $\bar{O}$, TM $\bar{O}$ $I_{OL} = 3mA$	0		0.3 V_{DD}	V
		Operating Condition	"L" Level Output Voltage	V_{OL}	CK $\bar{O}$, TM $\bar{O}$ $I_{OL} = 3mA$	0		0.3 V_{DD}	V
			Output Breakdown Voltage	BV_O	CK $\bar{O}$, TM $\bar{O}$, A $\bar{O}$	18			V
		$V_{DD} = 5V$	"H" Level Input Voltage	V_{IH}	SHI, SDI, LDI, AI	0.7 V_{DD}		15	V
		$V_{SS} = 0V$	"L" Level Input Voltage	V_{IL}		-0.3		0.8	V
		$T_a = 25^\circ C$	Oscillation Frequency	f_{OSC}	Q1, Q $\bar{O}$, $V_{DD} = 3.5V$		5.76		MHz
MN6147	CMOS PLL Frequency Synthesizer for FM/AM Stereo Tuners	$V_{DD} = -0.3 \sim +10V$	Supply Current	I_{DD}	$V_{DD} = 5V$, $T_a = 25^\circ C$		20	30	mA
		$V_I = -0.3 \sim V_{DD} + 0.3V$	Power Consumption	P_{tot}			100	150	mW
		$V_O = -0.3 \sim V_{DD} + 0.3V$	"H" Level Input Voltage	V_{IH}	$V_{DD} = 5V$, DA0 ~ DA3, CPL, FM·AM, SW·MW	2.4		V_{DD}	V
		$P_D = 250mW$	"L" Level Input Voltage	V_{IL}		V_{SS}		0.8	V
		$T_{opr} = -30 \sim +70^\circ C$	Input Voltage	V_i	FMLO	1.0			V _{P-P}
		$T_{stg} = -55 \sim +100^\circ C$	Input Current	I_i	$V_i = 0$ or 5V	±10	±50	±250	μA
		Operating Condition	Input Frequency Upper Limit	f_i	$V_{DD} = 4.5 \sim 5.5V$	120			MHz
			Oscillation Frequency	f_{OSC}	OSC1, OSC2		4.5		MHz
		$V_{DD} = 5V$	"H" Level Output Current	I_{OH}	$V_{DD} = 5V$, $V_O = 3V$, PD	-1.5			mA
		$V_{CK} = 5V$	"L" Level Output Current	I_{OL}	$V_{DD} = 5V$, $V_O = 2V$, PD	1.5			mA
		$T_a = -30 \sim +70^\circ C$	"H" Level Output Voltage	V_{OH}	$V_{DD} = 5V$, $I_{OH} = 100\mu A$, CK1, CK2	4.0			V
			"L" Level Output Voltage	V_{OL}	$V_{DD} = 5V$, $I_{OL} = 100\mu A$, CK1, CK2			0.4	V

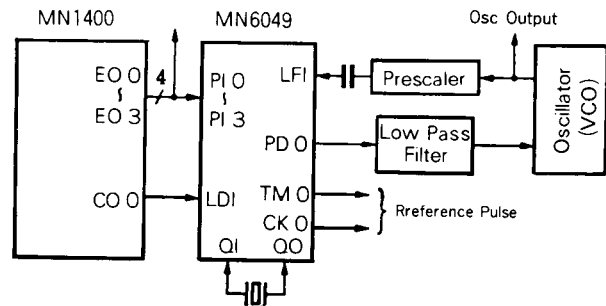
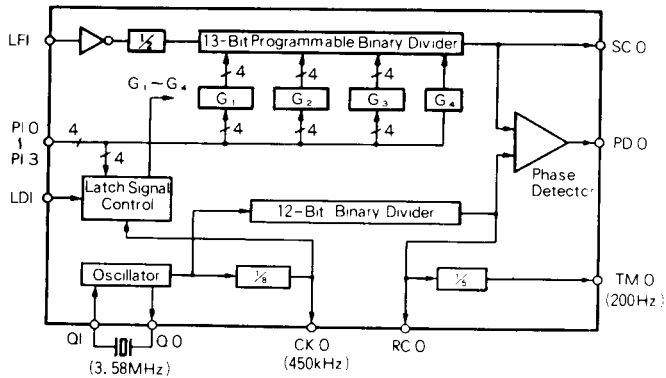
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Block Diagram

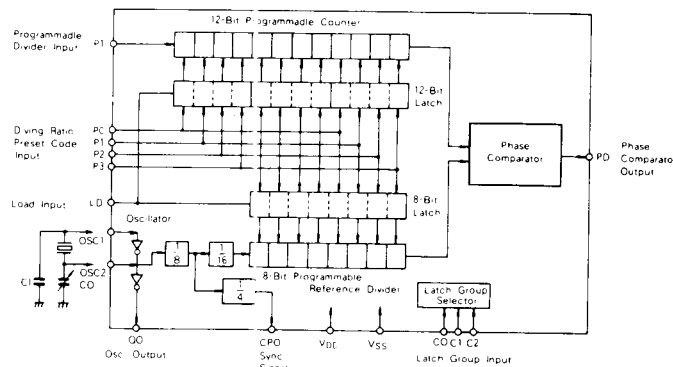
Application Circuit

MN6049 (Package L-13,16-Lead Plastic DIL)

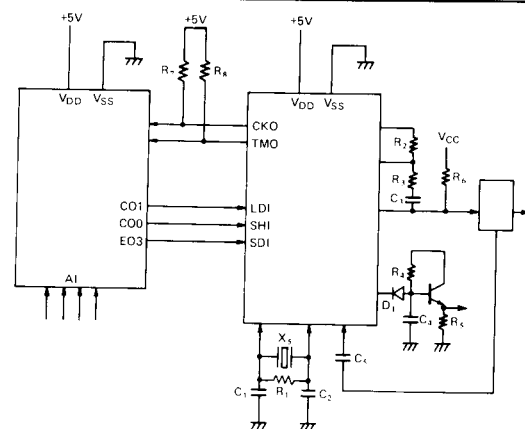
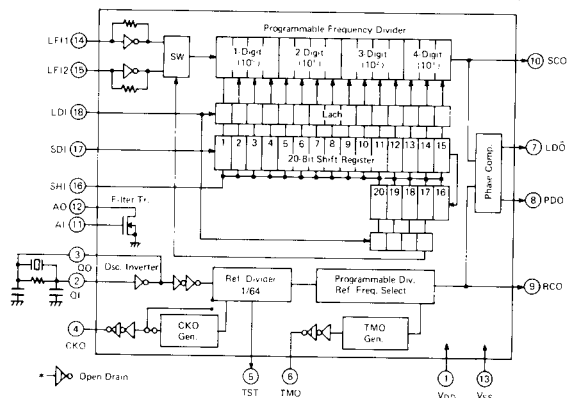


Note) LDI requires a special control signal

MN6142 (Package L-13,16-Lead Plastic DIL)



MN6145 (Package L-15,18-Lead Plastic DIL)



MN6147 (Package L-15,18-Lead Plastic DIL)

