

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		
MNG024	CMOS 16-Function Remote Control Circuit	V _{DD} = -0.3 ~ +3V V _I = -0.3 ~ V _{DD} + 0.3V V _O = -0.3 ~ V _{DD} + 0.3V T _{opr} = -20 ~ +70°C T _{stg} = -40 ~ +100°C	"H" Level Input Voltage	V _{IH}	OSC1, OSC2	1.1		1.5	V		
			"L" Level Input Voltage	V _{IL}				0.3	V		
			Input Current	I _{IH}	KY1~KY2, V _I = 1.5V	7	15		μA		
			"H" Level Output Current	I _{OH1}	DT1~DT4, V _O = 1.2V	-100			μA		
			"L" Level Output Current	I _{OH2}	OUT1, V _{DD} = 1.1V, V _O = 0.8V	-600			μA		
			"L" Level Output Current	I _{OL1}	OUT1, V _{DD} = 1.1V, V _O = 0.3V	15			μA		
			Operating Condition	"H" Level Output Current	I _{OH3}	OUT2, V _{DD} = 1.1V, V _O = 0.8V	-300			μA	
				"L" Level Output Current	I _{OL2}	CUT2, V _{DD} = 1.1V, V _O = 0.3V	15			μA	
			V _{DD} = 1.5V V _{SS} = 0V f _{osc} = 600Hz Ta = 25°C	"H" Level Output Current	I _{OH4}	OSC2, OSC3, V _O = 1.2V	-60			μA	
				"L" Level Output Current	I _{OL3}	OSC2, OSC3, V _O = 0.3V	60			μA	
ΔMNG025	CMOS Multi-Function Remote Control Circuit	V _{DD} = -0.3 ~ +5V V _I = -0.3 ~ V _{DD} + 0.3V V _O = -0.3 ~ V _{DD} + 0.3V T _{opr} = -30 ~ +70°C T _{stg} = -35 ~ +100°C	Supply Current	I _{DD}	Without key input			30	μA		
			Power Consumption	P _{tot}				60	μW		
			Input Pin	KY1~KY7	"H" Level Voltage	V _{IH}		2.4			V
					"L" Level Voltage	V _{IL}				0.6	V
					Input Current	I _I	V _I = 3V	10		50	μA
			Operating Condition	CNT OSC2 MODE	"H" Level Voltage	V _{IH}		2.4			V
					"L" Level Voltage	V _{IL}				0.6	V
			V _{DD} = 3V V _{SS} = 0V Ta = 25°C	DT1~DT4	"H" Level Current	I _{OH1}	V _O = 2.4V	-100			μA
					"H" Level Current	I _{OH2}	V _O = 0.8V	-1.5			mA
				OUT	"L" Level Current	I _{OL2}	V _O = 0.6V	50			μA
"H" Level Current	I _{OH3}	V _O = 2.4V			-100			μA			
OSC1	"L" Level Current	I _{OL3}	V _O = 0.6V	100			μA				
	MNG044	CMOS Frequency Synthesizer for TV	V _{DD} = -0.3 ~ +7V V _I = -0.3 ~ +7V V _O = -0.3 ~ +7V P _D = 30mW T _{opr} = -20 ~ +70°C T _{stg} = -55 ~ +100°C	Supply Current	I _{DD}	Without load		1	5	mA	
Power Consumption				P _{tot}	RC=1/3667, SC=1/1023			5	25	mW	
Input Pin				LF1	Input Frequency Upper Limit	f _i		3.7			MHz
					Input Voltage Swing	V _i		1			V _{P-P}
					Input Current	I _I	V _I = V _{SS} ~ V _{DD}				±30
Operating Condition				PI0~3 CI0~2 LD1	"H" Level Input Voltage	V _{IH2}		2.4		V _{DD}	V
					"L" Level Output Current	V _{IL2}		V _{SS}		0.8	V
V _{DD} = 5V V _{SS} = 0V Ta = -20 ~ +70°C				PDO	"H" Level Output Current	I _{OH}	V _O = 3V	-0.8			mA
					"L" Level Output Voltage	I _{OL}	V _O = 2V	+0.8			mA
				TMO	"H" Level Output Voltage	V _{OP}	I _{OH} = -100μA	3			V
	"L" Level Output Voltage	V _{OL}	I _{OL} = 100μA				0.4	V			
Q1, QO	Osc. Frequency	f _{osc}	C _I = 22pF, C _O = 30 ± 10pF		3.58			MHz			
MNG047	CMOS PLL Frequency Synthesizer for FM/AM Radio	V _{DD} = -0.3 ~ +10V V _I = -0.3 ~ +10V V _O = -0.3 ~ +10V P _D = 50mW T _{opr} = -30 ~ +70°C T _{stg} = -55 ~ +100°C	Supply Current	I _{DD}	V _{DD} = 5V, Ta = 25°C		3	5	mA		
			Power Consumption	P _{tot}			15	25	mW		
			"H" Level Input Voltage	V _{IH}	P0~P3, C0~C2, LD.	2.4			V _{DD}	V	
			"L" Level Input Voltage	V _{IL}	V _{DD} = 5V	V _{SS}			0.8	V	
			Input Frequency Upper Limit	f _{i max}	V _{DD} = 4.5 ~ 6.5V	4				MHz	
			T _{stg} = -55 ~ +100°C	Oscillation Frequency	f _{osc}	OSC1, OSC2			11.52		MHz
			Operating Condition	"H" Level Output Current	I _{OH}	PD	V _O = 3V	-0.8			mA
				"L" Level Output Current	I _{OL}		V _O = 2V	0.8			mA
			V _{DD} = 5V V _{SS} = 0V Ta = -30 ~ +70°C	"H" Level Output Voltage	V _{OH}	CPO, QO	V _{DD} = 5V I _{OH} = -100μA	4			V
"L" Level Output Voltage	V _{OL}	V _{DD} = 5V I _{OL} = 100μA					0.4	V			
Input Capacitance	C _I	V _I = 2V			5		pF				
Output Capacitance	C _O	V _O = 2V			7		pF				

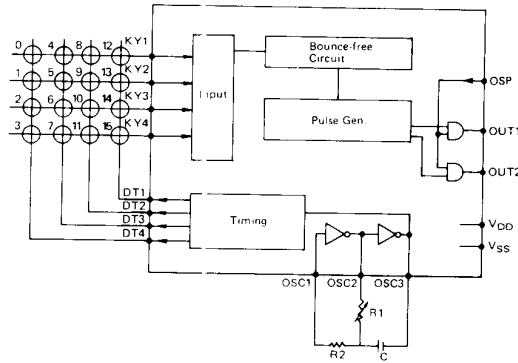
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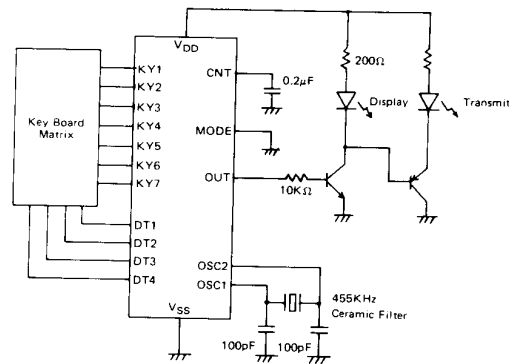
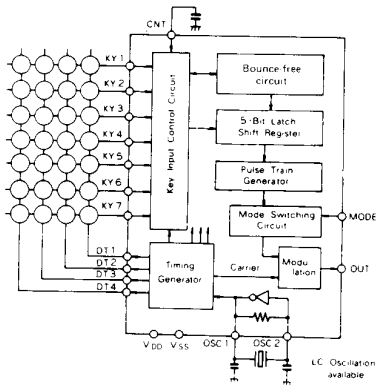
Block Diagram

Application Circuit

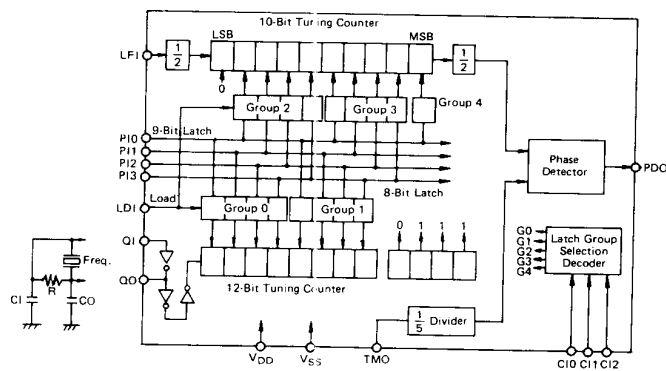
MN6024 (Package L-13, 16-Lead Plastic DIL)



MN6025 (Package L-15, 18-Lead Plastic DIL)



MN6044 (Package L-14, 16-Lead Plastic DIL)



MN6047 (Package L-13, 16-Lead Plastic DIL)

