

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	$V_{DD} = -0.3 \sim +3V$ $V_I = -0.3 \sim V_{DD} + 0.3V$ $V_O = -0.3 \sim V_{DD} + 0.3V$ $T_{opr} = -20 \sim +70^\circ C$ $T_{stg} = -40 \sim +100^\circ C$	"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		
			$V_{DD} = 1.5V$ $V_{SS} = 0V$ $f_{osc} = 600Hz$ $T_a = 25^\circ C$	"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	$V_{DD} = -0.3 \sim +5V$ $V_I = -0.3 \sim V_{DD} + 0.3V$ $V_O = -0.3 \sim V_{DD} + 0.3V$ $T_{opr} = -30 \sim +70^\circ C$ $T_{stg} = -35 \sim +100^\circ C$	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		
			"L" Level Voltage			V_{IL}			0.6	V	
			$V_{DD} = 3V$ $V_{SS} = 0V$ $T_a = 25^\circ C$	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
OSC1	"H" Level Current	I_{OH3}			$V_O = 2.4V$	-100			μA		
	"L" Level Current	I_{OL3}	$V_O = 0.6V$	100			μA				
MNG044	CMOS Frequency Synthesizer for TV	$V_{DD} = -0.3 \sim +7V$ $V_I = -0.3 \sim +7V$ $V_O = -0.3 \sim +7V$ $P_D = 30mW$ $T_{opr} = -20 \sim +70^\circ C$ $T_{stg} = -55 \sim +100^\circ C$	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	$V_I = V_{SS} \sim V_{DD}$			± 30	μA
			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
			$V_{DD} = 5V$ $V_{SS} = 0V$ $T_a = -20 \sim +70^\circ C$	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}	$I_{OH} = -100\mu A$	3			V
"L" Level Output Voltage	V_{OL}	$I_{OL} = 100\mu A$					0.4	V			
Q1, QO	Osc. Frequency	f_{osc}	$C_I = 22pF, C_O = 30 \pm 10pF$		3.58			MHz			
MNG047	CMOS PLL Frequency Synthesizer for FM/AM Radio	$V_{DD} = -0.3 \sim +10V$ $V_I = -0.3 \sim +10V$ $V_O = -0.3 \sim +10V$ $P_D = 50mW$ $T_{opr} = -30 \sim +70^\circ C$ $T_{stg} = -55 \sim +100^\circ C$	Supply Current	I_{DD}	$V_{DD} = 5V, T_a = 25^\circ C$		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	$f_{i(max)}$	$V_{DD} = 4.5 \sim 6.5V$	4			MHz		
			Oscillation Frequency	f_{osc}	OSC1, OSC2	$V_{DD} = 5.5 \sim 6.5V$	6			MHz	
								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
			$V_{DD} = 5V$ $V_{SS} = 0V$ $T_a = -30 \sim +70^\circ C$	"H" Level Output Voltage	V_{OH}	CPO, QO	$V_{DD} = 5V$ $I_{OH} = -100\mu A$	4			V
"L" Level Output Voltage	V_{OL}	$V_{DD} = 5V$ $I_{OL} = 100\mu A$					0.4	V			
Input Capacitance	C_I	$V_I = 2V$			5			pF			
Output Capacitance	C_O	$V_O = 2V$			7			pF			

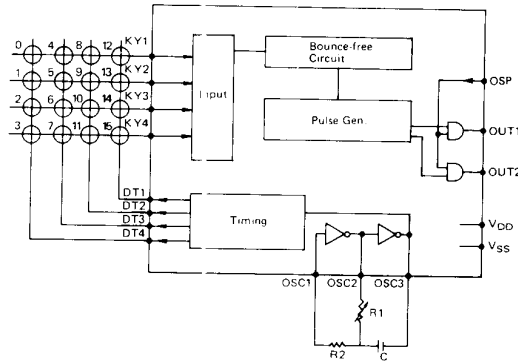
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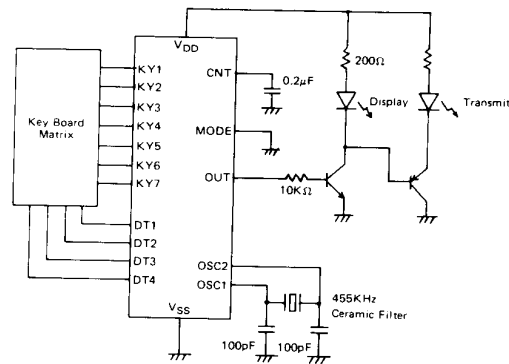
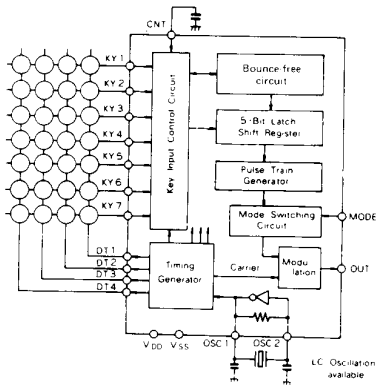
Block Diagram

Application Circuit

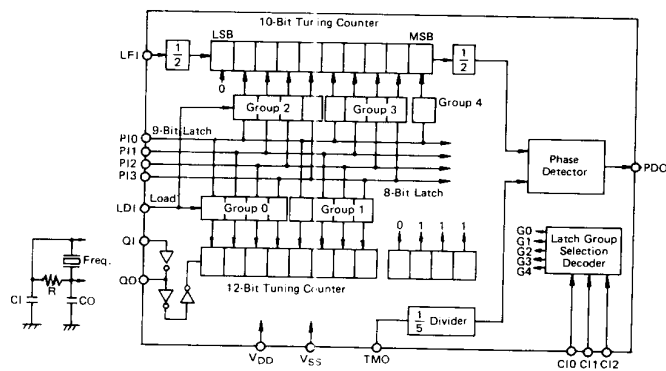
MN6024 (Package L-13, 16-Lead Plastic DIL)



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



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



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

