

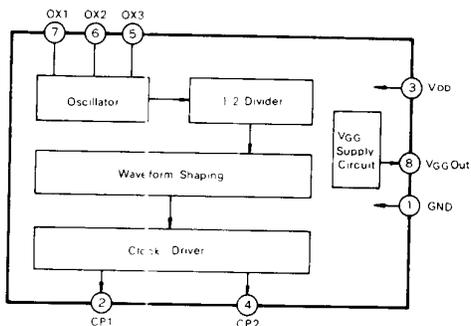
Type No.	Function	Maximum Ratings (Ta=25°C)	Electrical Characteristics (Ta=25°C)							
			Item	Symbol	Condition	min.	typ.	max.	Unit	
BBD Clock Generator, Driver Circuits										
MN3101	CMOS Clock Generator/Driver for BBD	V _{DD} =-18~+0.3V	Supply Current	I _{DD}	Without load		3		mA	
		V _I =V _{DD} -0.3~+0.3V	Power Consumption	P _{tot}	Clock output 40kHz		45		mW	
		V _O =V _{DD} -0.3~+0.3V	"H" Level Input Voltage (OX1)	V _{IH}			0		-1	V
		P _D =200mW	"L" Level Input Voltage (OX1)	V _{IL}		V _{DD} +1			V _{DD}	V
		T _{opr} =-10~+70°C	"H" Level Output Current (OX1)	I _{OH1}	V _O =-1V		0.6			mA
		T _{stg} =-30~+125°C	"L" Level Output Current (OX2)	I _{OL1}	V _O =-14V		0.5			mA
		Operating Condition	"H" Level Output Current (OX3)	I _{OH2}	V _O =-1V		1.5			mA
			"L" Level Output Current (OX3)	I _{OL2}	V _O =-14V		2			mA
		V _{DD} =-15V	"H" Level Output Current (CP1, CP2)	I _{OH3}	V _O =-1V		10			mA
			"L" Level Output Current (CP1, CP2)	I _{OL3}	V _O =-14V		10			mA
			Output Voltage (V _{GG} (OUT))	V _{GG} (OUT)					-14	V
MN3102	CMOS Clock Generator/Driver for Low Voltage Operation BBD	V _{DD} =-0.3~+12V	Supply Current	I _{DD}	Without load		0.5		mA	
		V _I =-0.3~V _{DD} +0.3V	Power Consumption	P _{tot}	Clock output 40kHz		2.5		mW	
		V _O =-0.3~V _{DD} +0.3V	"H" Level Input Voltage (OX1)	V _{IH}		V _{DD} -1			V _{DD}	V
		P _D =200mW	"L" Level Input Voltage (OX1)	V _{IL}			0		1	V
		T _{opr} =-10~+70°C	"H" Level Output Current (OX2)	I _{OH1}	V _O =4V		0.5			mA
		T _{stg} =-30~+125°C	"L" Level Output Current (OX2)	I _{OL1}	V _O =1V		0.4			mA
		Operating Condition	"H" Level Output Current (OX3)	I _{OH2}	V _O =4V		0.7			mA
			"L" Level Output Current (OX3)	I _{OL2}	V _O =1V		1			mA
		V _{DD} =5V	"H" Level Output Current (CP1, CP2)	I _{OH3}	V _O =4V		5			mA
			"L" Level Output Current (CP1, CP2)	I _{OL3}	V _O =1V		5			mA
			Output Voltage (V _{GG} (OUT))	V _{GG} (OUT)					4.67	V
* V _{GG} voltage supply for Matsushita low voltage operation BBDS. The voltage might not be suitable for other maker's.										
Electronic Musical Instrument										
MNI33	3 + 2 + 1 Frequency Divider	V _{DD} =-33V	Supply Current	I _{GG}				-7	mA	
		V _{GG} =-20V	"H" Level Input Voltage	V _{IH}				-2.5	V	
		V _I =-25V	"L" Level Input Voltage	V _{IL}			-9		V	
		V _F =0.3V	"H" Level Output Voltage	V _{OH}	V _{IH} =-2.5V, V _{IL} =-9V				-1	V
		P _D =250mW	"L" Level Output Voltage	V _{OL}			-11		V	
		T _{opr} =-30~+75°C	Input Frequency	f _i			DC		100	kHz
		T _{stg} =-55~+125°C	DC Noise Margin		V _{NH}			1.5		V
					V _{NL}			2		V
		Operating Condition								
		V _{DD} =-13V V _{GG} =-30V								

DIGITAL MONOLITHIC INTEGRATED CIRCUITS (MOS)

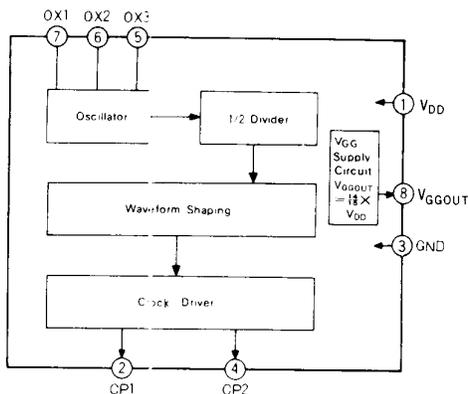
MOS IC, LSI

Block Diagram

MN3101 (Package L-9, 8-Lead Plastic DIL)



MN3102 (Package L-9, 8-Lead Plastic DIL)



MN133 (Package L-12, 14-Lead Plastic DIL)

