

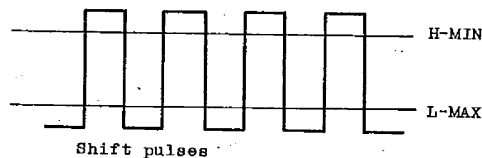
TD6102P

T-77-05-05

FUNCTIONS AND USING METHODS OF PIN.

SYMBOL	DESCRIPTION	CONDITIONS	REMARKS
VCC	Power terminal	4.5 ~ 8.0 (V) is applied.	
f _{FM-IN}	FM input terminal	f _{FM-IN} =1.0MHz ~ 150MHz (sine wave) Input voltage ≥ 150mVrms.	
25kHz	25kHz Shift pulse input terminal	Operates Under AC mode Operates at the trailing edge of input pulse.	NOTE. 1
f _{out}	Output terminal	Output Voltage ≥ 1.7 Vp-p (VCC=7.5 ± 0.5(V))	(at 1/8 mode)
GND	Ground terminal	Ground	
f _{AM-IN}	AM input terminal	f _{AM-IN} (MAX)=10MHz (sine wave) Input Voltage ≥ 50mVrms.	
FM/AM	FM input and AM selecting terminal	Selection can be made under DC mode. FM at H-Level and AM at L-Level.	NOTE. 2
1/8, 1/4	Dividing ratio Selecting terminal	Selection can be made under DC mode. 1/8 at H-Level and 1/4 at L-Level.	NOTE. 2
50kHz	50kHz Shift pulse input terminal	Operates under AC mode. Operates at the trailing edge of input pulse.	NOTE. 1

NOTE. 1 H-Level and L-Level of shift pulses to be applied to 25kHz and 50kHz input terminals shall be set at the following Level:
H-MIN ≥ VCC-2.5(V), L-MAX ≤ VCC-4.0(V)



NOTE. 2 H-Level and L-Level for FM/AM and 1/8 and 1/4 selection shall be set at the following Level:
H-MIN ≥ VCC-0.5(V)
L-MAX ≤ VCC-1.5(V)

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ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{CC}=5.0V$, $T_a=25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Supply Current	I_{CC}		-	-	25	35	mA	
Input Voltage	FM	V_{IN-FM}	2	-	150	-	mVrms	
	AM (Note 3)	V_{IN-AM}	1	-	50	-		
Operating Frequency	FM	f_{FM}	1, 2	Input Voltage= 150mVrms, sine wave	1.0	-	150	MHz
	AM	f_{AM}	1	Input Voltage= 50mVrms, sine wave	-	-	10	
Output Amplitude (Note 4)	FM	V_{out-FM}	1	$V_{CC}=7.5 \pm 0.5V$, 1/8- mode. $f_{FM}=150MHz$	1.7	2.0	-	Vp-p
	AM	V_{out-AM}	1	$V_{CC}=7.5 \pm 0.5V$ $f_{AM}=10MHz$	1.7	2.0	-	
FM/AM, 1/8, 1/4 Selection Voltage	"H" Level	V_H	1	-	4.5	-	-	V
	"L" Level	V_L	1	-	-	-	3.5	
25kHz, 50kHz Shift Pulse Voltage	"H" Level	$V_{H-shift}$		-	2.5	-	-	V
	"L" Level	$V_{L-shift}$		-	-	-	1.0	
Input Resistance	2 Pin	R_{i2}		$f_{FM}=150MHz$	-	600	-	Ω
	6 Pin	R_{i6}		$f_{AM}=10MHz$	-	1.1	-	k Ω
Recommended Supply Voltage	V_{CC}			-	4.5	-	5.5	V

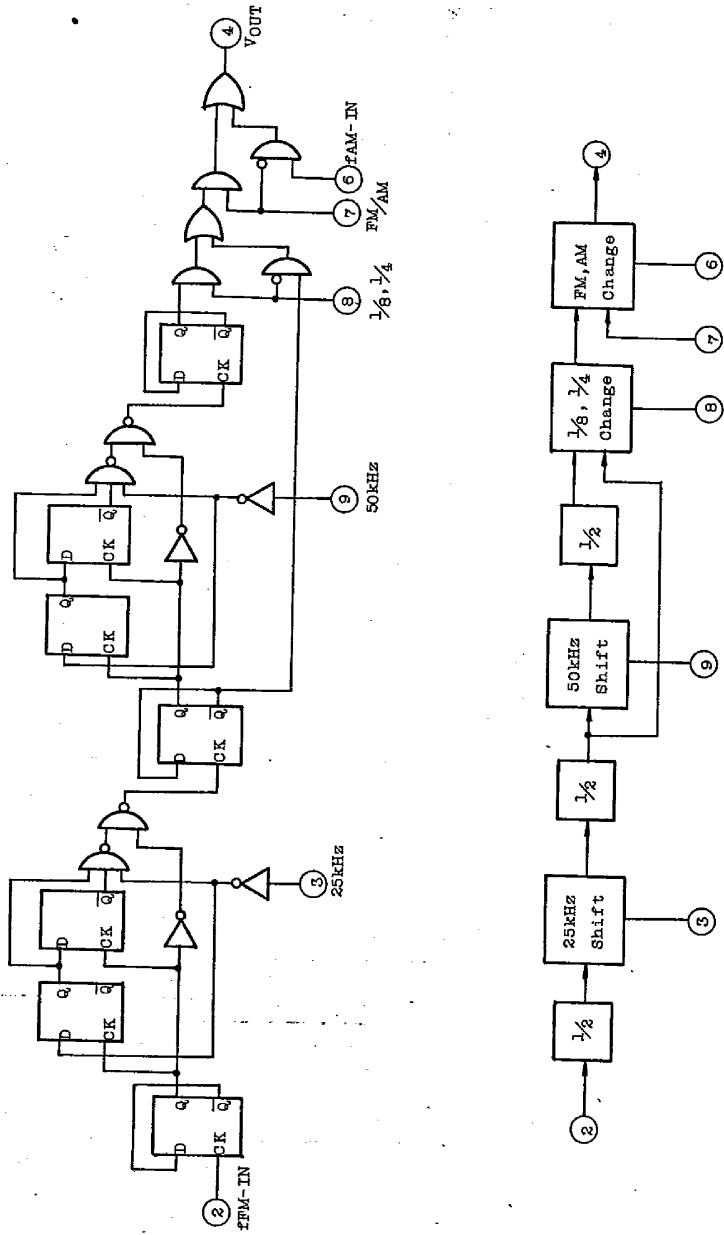
NOTE. 3 When both FM and AM inputs are simultaneously applied AM input voltage shall be 1/3 of FM input voltage or more.

NOTE. 4 When a 22k Ω resistor is externally inserted between pin 4 and GND, following output voltage are obtained at time of $V_{CC} = 5.0 \pm 0.5V$: $V_{OUT-FM} \geq 1.7$ Vp-p (1/8 mode)
 $V_{OUT-AM} \geq 1.7$ Vp-p. Under 1/4 mode, following output voltage is obtained: $V_{OUT-FM} = 1.0$ Vp-p (typ.)

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LOGIC & BLOCK DIAGRAM

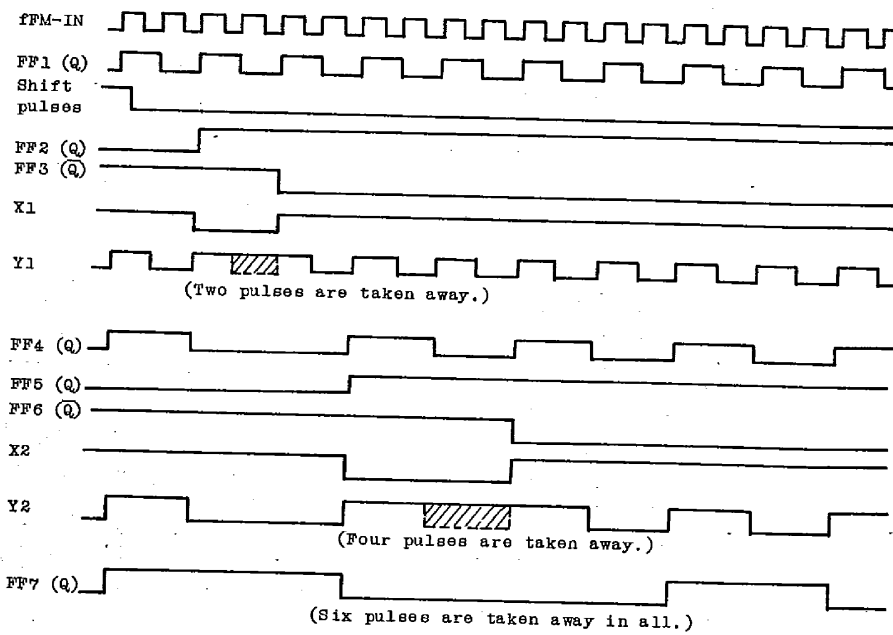
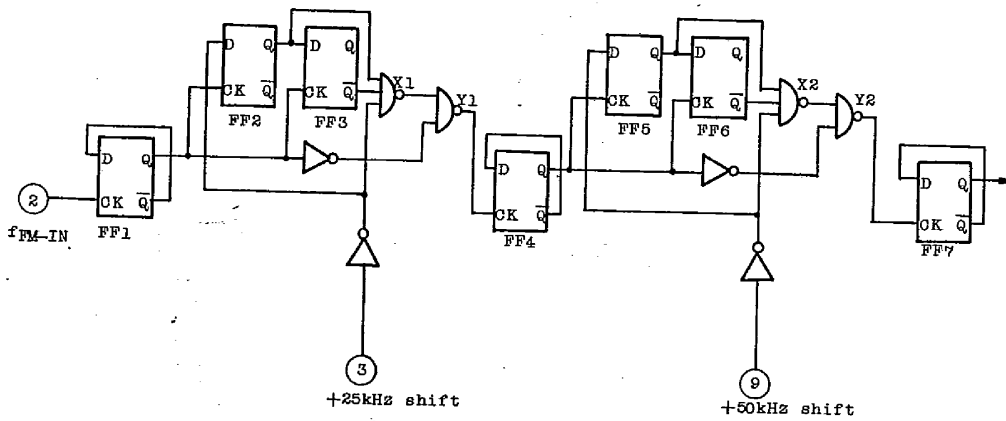


AUDIO DIGITAL IC

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BEHAVIOUR OF 25kHz SHIFT AND 50kHz SHIFT CIRCUITS

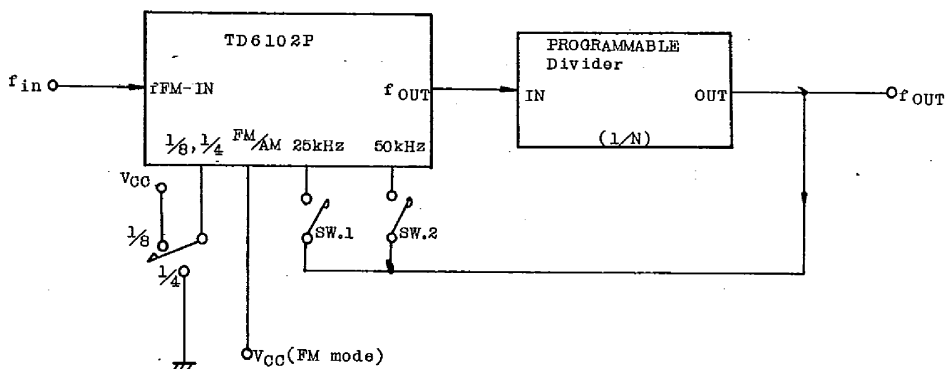


TIMING CHART

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When shift pulses are applied to 25kHz and 50kHz shift terminals, two input pulses and four input pulses are taken away, respectively. When this function is applied to such a system as shown below, frequency dividing ratio can be changed.



MODE	25kHz SW.1	50kHz SW.2	DIVIDING RATIO (f _{IN} /f _{OUT})	REMARKS
FM mode	off	off	8N	
1/8 mode	on	off	8N + 2	Corresponds to draw-out of two pulses.
	off	on	8N + 4	Corresponds to draw-out of four pulses.
	on	on	8N + 6	Corresponds to draw-out of six pulses.
FM mode	off	off	4N	
1/4 mode *	on	off	4N + 2	Corresponds to draw-out of two pulses.

* Under 1/4 mode, 50kHz shift does not operate.

