



ECG1132
TV SUB-CARRIER GENERATOR

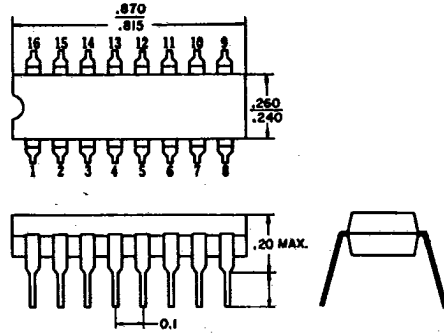
T-77-07-05

● TV Sub-Carrier Generator

(Function)

- 3.58 MHz Voltage Controlled Oscillator
- APC Phase Detector
- Killer Detector
- Burst Amplifier
- Gate Pulse Amplifier

- Excellent Performance with APC System
- Excellent Temperature Stability
- Including a Regulated Voltage Supply
- High Lock In Sensitivity



MAXIMUM VOLTAGE & MAXIMUM CURRENT RATINGS (T_a = 25°C)

Terminal No.	V _{Min} (V)	V _{Max} (V)	I _{IN} (mA)	I _{OUT} (mA)
1	0	V _{CC}	1	--
2	0	V _{CC}	1	--
3	0	V _{CC}	1	--
4	0	V _{CC}	1	--
5	--	--	--	--
6	--	--	--	--
7 (V _{CC})	0	18	30	--
8	--	--	--	--
9	-5	1.5	5	--
10 (GND)	--	--	--	30
11	--	--	--	--
12	--	--	--	--
13	--	--	--	--
14	--	--	--	--
15	--	--	--	--
16	--	--	--	6

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STATIC CHARACTERISTICS (cont'd)

Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Terminal 13 Voltage	V ₁₃	1	SW ₁ OFF SW ₂ OFF	--	3.32	--	V
Terminal 14 and 15 Voltage	V _{14, V15}	1	SW ₁ OFF SW ₂ ON	--	14.55	--	V
Supply Current	I _{cc} (I7)	1	SW ₁ ON SW ₂ OFF	18.0	23.7	29.0	mA
		1	SW ₁ OFF SW ₂ ON	19.0	24.7	30.0	mA

DYNAMIC CHARACTERISTICS

(V_{cc} = 15 V, f = 3.58 MHz, Gate Pulse Width 4 μs, T_a = 25°C, unless otherwise specified)

Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Operating Supply Voltage	V _{cc}	--	--	13.5	15.0	16.5	V
Burst Gate Amplifier Gain	G _{BU}	2	f = 3.58 MHz	18.0	21.0	22.5	dB
Burst Amplifier Input Voltage	V _B	2	--	250	--	--	mV _{p-p}
Burst Amplifier Input Impedance	Parallel Input Resistance	r _{ip} (8)	--	--	1	--	k Ohm
	Parallel Input Capacitance	c _{ip} (8)	--	--	8	--	pF
Burst Amplifier Output Impedance	Parallel Output Resistance	r _{op} (6)	--	--	70	--	Ohm
	Parallel Output Capacitance	c _{op} (6)	--	--	5	--	pF
Input Impedance	Parallel Input Resistance	r _{ip} (5)	--	--	1	--	k Ohm
	Parallel Input Capacitance	c _{ip} (5)	--	--	10	--	pF
Terminal 9 Input Resistance	R ₉ (ON)	--	Terminal 9 = 1.0 V	--	80	--	Ohm
	R ₉ (OFF)	--	Terminal 9 = 0	100	--	--	k Ohm
Killer Detector Sensitivity	μK	3	V ₁ -V ₂ /V _{5p-p}	17	20	--	
Killer Detector Saturation Input Voltage	V _{R(sat)}	3	Terminal 5 = Input Level	300	500	--	mV _{p-p}
Killer Detector Offset Voltage	V ₁ -V ₂	1	--	--	--	±0.4	V
APC Detector Sensitivity	μPL	4	V ₄ -V ₃ /deg	20	24	--	mV/deg
APC Detector Saturation Input Voltage	V _{PL(sat)}	4	Terminal 6 = Output Level	--	--	500	mV _{p-p}
APC Detector Offset Voltage	V ₃ -V ₄	4	--	--	--	±0.4	V
Killer Amplifier SW Characteristic	V _L	4	--	--	--	1	V

DYNAMIC CHARACTERISTICS (Cont.)

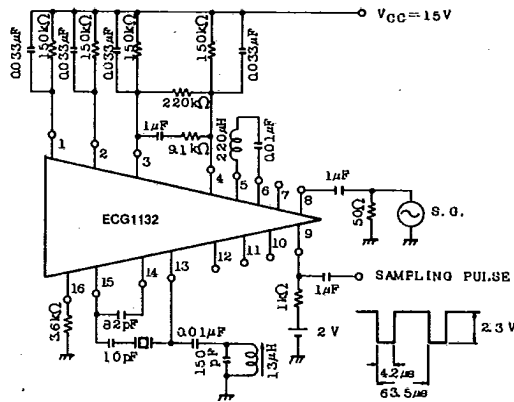
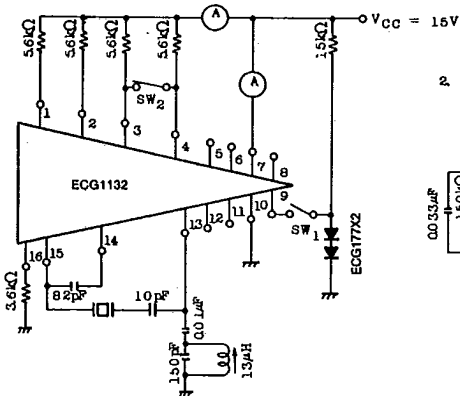
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Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Killer Amplifier SW Characteristic	V_H	3	--	10	--	--	V
Killer Amplifier SW Characteristic	V_1	3	--	--	--	140	mV
Killer Amplifier SW Characteristic	V_2	1	--	--	--	100	mV
Control Sensitivity (OSC)	β	2	--	1400	1800	--	Hz/V
3.58 MHz Carrier Output Voltage	V_{11}	2	--	1.8	2.5	--	Vp-p
OSC Frequency Range	Δf_{OSC}	2	--	± 300	--	--	Hz
Output Resistance	R_{11}	--	--	--	70	--	Ohm
Pull - In Range	Δf_{PULL}	2	--	± 300	--	--	Hz
Hold - In Range	Δf_{HOLD}	2	--	± 400	--	--	Hz
OSC Frequency Temperature Drift	Δf_{TEMP}	1	SW ₁ OFF, SW ₂ ON	--	10	--	Hz/ $^{\circ}$ C
APC Detector Offset Temperature Drift	$\Delta V_{3-4(T)}$	1	SW ₁ , SW ₂ OFF	--	± 0.2	--	mV/ $^{\circ}$ C
Killer Detector Offset Temperature Drift	$\Delta V_{1-2(T)}$	1	SW ₁ , SW ₂ OFF	--	± 0.2	--	mV/ $^{\circ}$ C

TEST CIRCUIT
STATIC CHARACTERISTICS

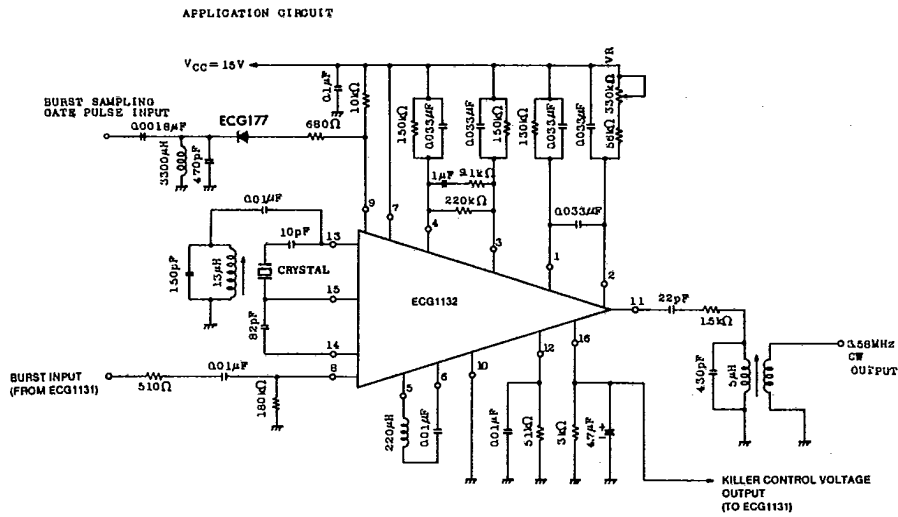
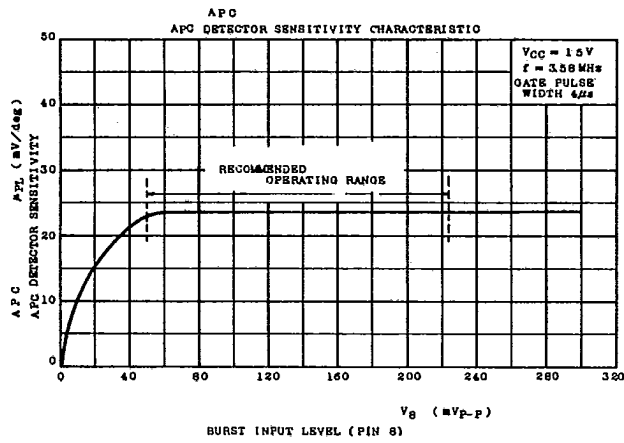
V_1 - V_2 , V_2 , Δf_{TEMP} , $\Delta V_{3-4(T)}$, $\Delta V_{1-2(T)}$

α_B , V_B , β , V_{11} , Δf_{OSC} , Δf_{PULL} , Δf_{HOLD}



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