

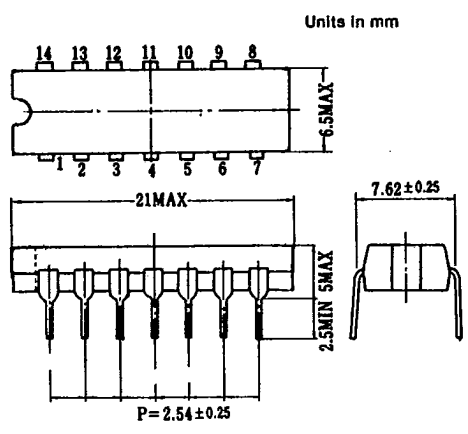
T-77-07-05



ECG1109

LO-LEVEL VIDEO DETECTOR

- For TV PIF Final Stage, Low Level Detector
- High Conversion Gain : 34 dB (Typ.)
- Good Linearity and Detector Frequency Characteristic : <1.0 dB (0~6 MHz)
- High Gain: $3.0 V_{p-p}(\hat{V}_{IN} = 36 mV_{rms})$
- High Video Output: $7.5 V_{p-p}$ (Typ.)
- Double Balance Detector
- High Rejection of Carrier
- Low Radiation of Spurious Frequencies



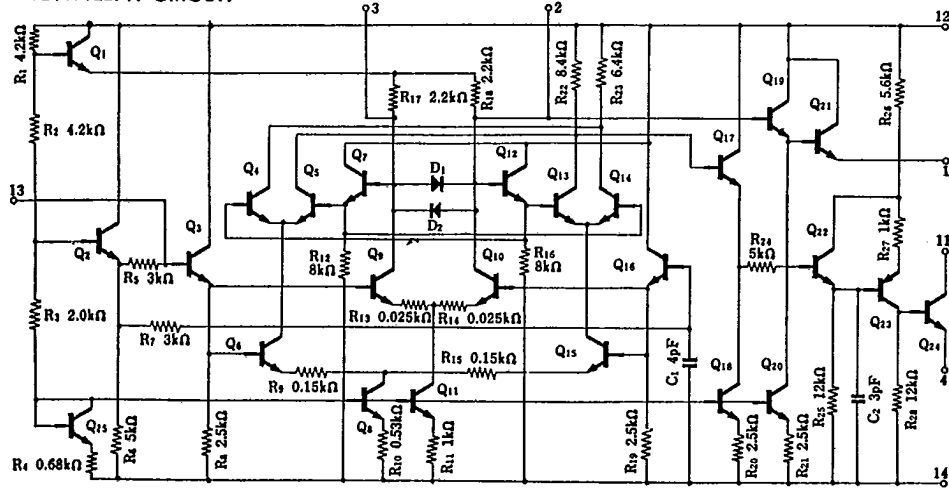
MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Supply Voltage	V_{cc}	2.4	V
Input Voltage	V_{IN}	1.0	V_{rms}
Operating Voltage Range (Pin 12)	--	12~24	V
Supply Current	I_{cc}	26	mA
Power Dissipation (Note 1)	P_D	625	mW
Minimum Load Resistance (Pin 4)	R_L	2.2	k Ohms
Operating Temperature	T_{opr}	-20~75	°C
Storage Temperature	T_{stg}	-55~150	°C

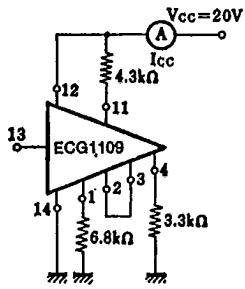
(Note 1) Derated above Ta = 25°C in the proportion of 5.0 mW/°C.

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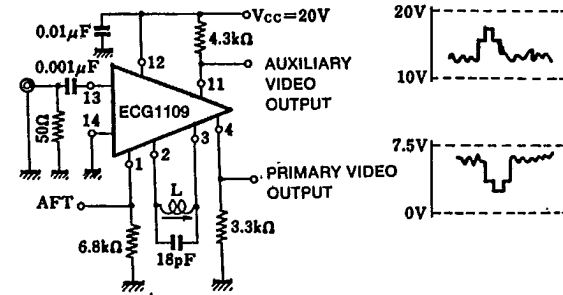
EQUIVALENT CIRCUIT



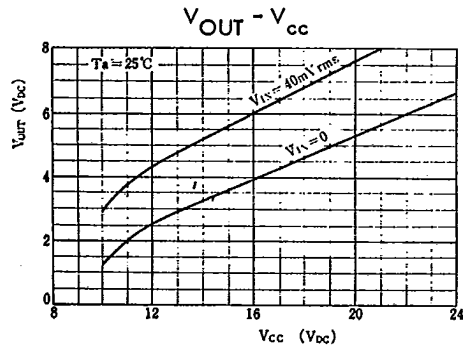
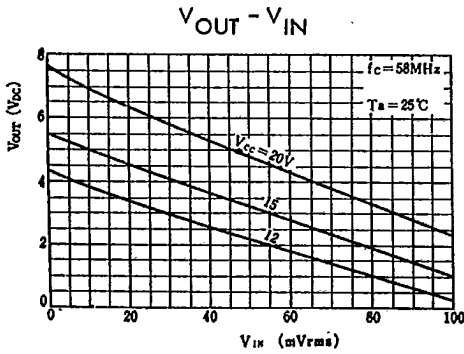
1. I_{CC} TEST CIRCUIT



2. V_{OUT} , $V_{OD(Max)}$, V_{IN} , CARRIER ATTENUATION, CARRIER OUTPUT VOLTAGE, BW_{IF} , BW_{VIDEO} , $V_{O(AFT)}$, V_1



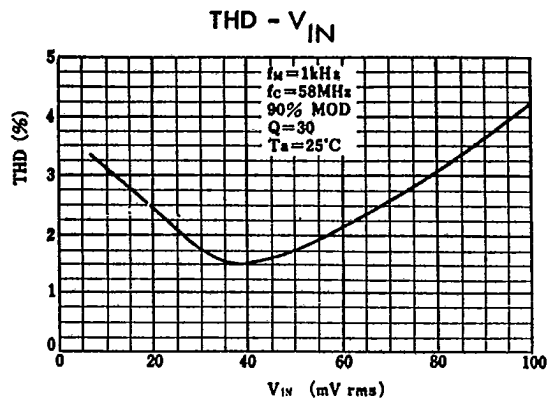
L: 0.4 mm ϕ SILK WOUND COPPER WIRE 7 TURNS
COIL FORM OUTSIDE DIAMETER 5.5 mm ϕ



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ELECTRICAL CHARACTERISTICS ($V_{CC} = 20\text{ V}$, $f_c = 58\text{ MHz}$, $Q = 30$, $T_a = 25^\circ\text{C}$)

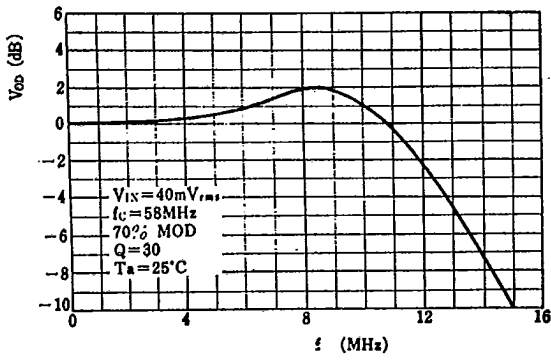
Characteristic	Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Supply Current	I_{CC}	1	--	--	15	20	mA
Zero Signal DC Output Voltage	V_{OUT}	2	--	6.5	7.5	8.5	V
Maximum Detector Output Voltage	$V_{OD(Max)}$	2	--	--	7.5	--	V_{p-p}
Input Voltage (Sensitivity)	V_{IN}	2	$V_{OUT} = 3.0\text{ V}_{p-p}$ 90% AM Modulation	--	36	--	mV_{rms}
Carrier Attenuation (Pin 4)	--	2	--	50	60	--	dB
Carrier Output Voltage	--	2	$V_{OUT} = 3.0\text{ V}_{p-p}$ $f = f_c$	--	1.0	--	mV_{rms}
		2	$V_{OUT} = 3.0\text{ V}_{p-p}$ $f = 2 f_c$	--	3.0	--	
3 dB Band Width of IF Carrier	BW_{IF}	2	--	--	80	--	MHz
3 dB Band Width of Video Output	BW_{VIDEO}	2	--	--	12.3	--	MHz
Input Impedance	Parallel Input Resistance	r_{ip}	-- $f = 58\text{ MHz}$	--	3.5	--	k Ohms
	Parallel Input Capacitance	c_{ip}		--	3.0	--	pF
Output Impedance	z_o	--	$f = 1\text{ kHz}$	--	180	--	Ohms
Internal Impedance	Parallel Internal Resistance	r_{it}	-- $f = 58\text{ MHz}$	--	4.4	--	k Ohms
	Parallel Internal Capacitance	c_{it}		--	1.0	--	pF
A F T Output Voltage	$V_O(AFT)$	2	$f = 58\text{ MHz}$	--	350	--	mV_{p-p}
A F T DC Voltage	V_1	2	--	--	8.5	--	V



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810

$V_{OD} - f$



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THD, $V_{OUT} - f$

