FM IF AMPLIFIER/ DISCRIMINATOR/AF AMPLIFIER

CA3013

Special-purpose amplifier used in if amplifier, AM and noise limiter, FM detector, and af preamplifier applications. 10-lead "TO-5" package; Outline No. 1. For schematic diagram and characteristics curves, see Figs. 254 through 260.

MAXIMUM RATINGS

Positive DC Supply Voltage	V_{CC}	+10	V
Recommended Minimum DC Supply Voltage (V_{CC})		5.5	V
Input Signal Voltage (Between terminals 1 and 2)		±3	V
Total Device Dissipation		300	mW
Temperature Range:			
Operating		−55 to 125	°C
Storage		−65 to 200	°C

TYPICAL CHARACTERISTICS (At ambient temperature = 25°C, V_{CC} = +7.5V)

Device Dissipation	P_T	120	mW
Voltage Gain:			
f = 1 MHz	A	70	dB
f = 4.5 MHz	A	67	dB

TYPICAL CHARACTERISTICS (continued)

f = 10.7 MHz	A	60	dB
Parallel Input Resistance (f = 4.5 MHz)	R_{in}	3	kΩ
Parallel Input Capacitance (f = 4.5 MHz)	C_{in}	7	pF
Parallel Output Resistance (f = 4.5 MHz)	R_{out}	31.5	kΩ
Parallel Output Capacitance (f = 4.5 MHz)	C_{out}	4.2	pF
Noise Figure (f = 4.5 MHz)	NF	8.7	dB
Input Limiting Voltage, Knee (f = 4.5 MHz)	V_i(lim)	300	μV
Recovered AF Voltage (f = 4.5 MHz)	V_o(af)	188	mV
Amplitude Modulation Rejection (f = 4.5 MHz)	AMF	50	dB
Discriminator Output Resistance (f = 4.5 MHz)	R_o(disc)	60	Ω
Useful Frequency Range	100 kHz to > 20 MHz		
Total Harmonic Distortion (f = 4.5 MHz)	THD	1.8	%