SGS-THOMSON MICROELECTRONICS

TDA2320

PREAMPLIFIER FOR INFRARED REMOTE CONTROL SYSTEMS

DESCRIPTION

The TDA2320 is a monolithic integrated circuit in Minidip package specially designed to amplify the IR signal in remote controlled TV or radio sets. It directly interfaces with the digital control circuitry.

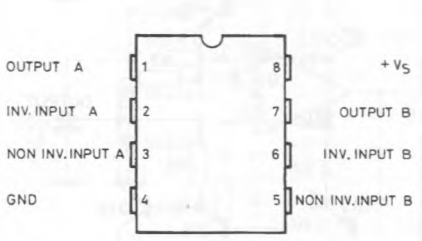
The TDA 2320 incorporates a two-stage amplifier with excellent sensitivity and high noise immunity. It can work with a single 5 V supply voltage and flash or carrier transmission modes as provided for example by the M709A/M710A/MOS transmitters.

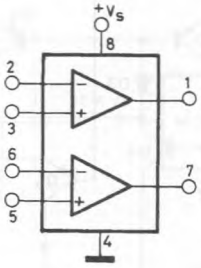
The TDA 2320 is particularly intended to be used in conjunction with the M104 and M206 + M3870 remote control receivers.

MINIDIP
(Plastic)

ORDER CODE : TDA2320

CONNECTION AND BLOCK DIAGRAM (top view)

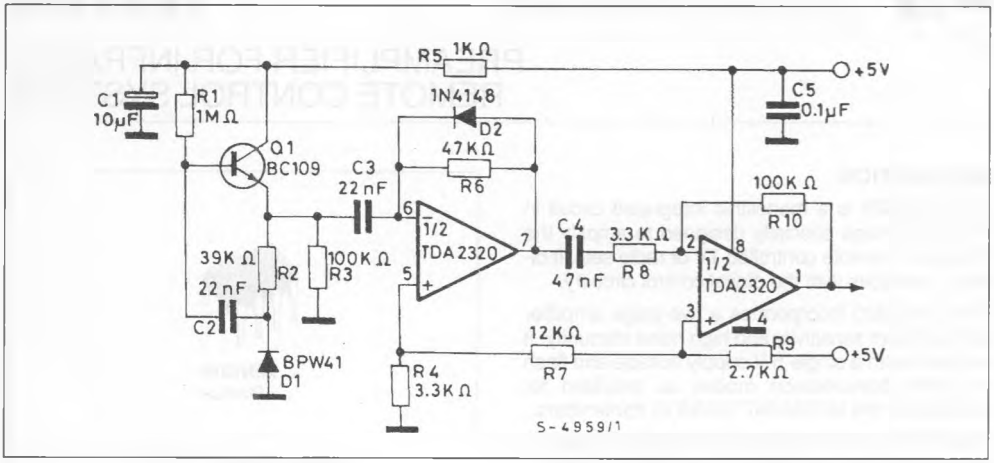




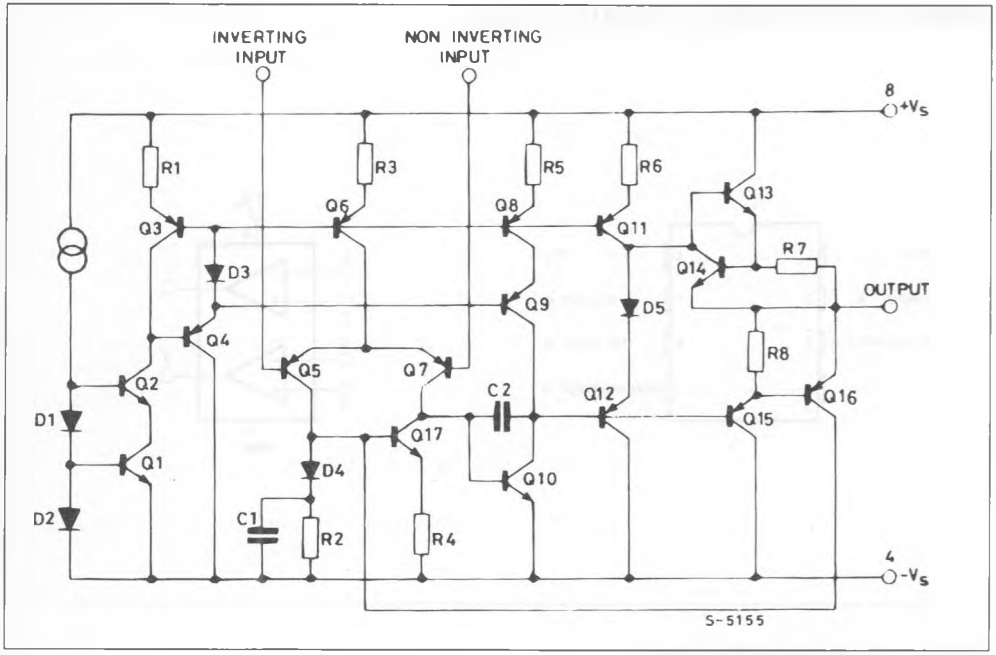
ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	20	V
T_{stg}, T_j	Storage and Junction Temperature	– 40 to 150	°C
P_{tot}	Total Power Dissipation at T_{amb} = 70 °C	400	mW

APPLICATION CIRCUIT (Flash Mode Preamplifier)



SCHEMATIC DIAGRAM (One Section)



THERMAL DATA

$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max 200	°C/W

ELECTRICAL CHARACTERISTICS (V_S = 5 V, T_{amb} = 25 °C, single amplifier, unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_S	Supply Voltage		4		20	V
I_S	Total Suppply Current	V_S = 20 V		0.8	2	mA
I_b	Input Bias Current			100	500	nA
V_{OS}	Input Offset Voltage	R_g < 10 KΩ		0.5		mV
I_{OS}	Input Offset Current			15		nA
G_V	Open Loop Voltage Gain	f = 1 KHz	64	70		dB
		f = 100 KHz		30		dB
B	Gain Bandwidth Product	f = 40 KHz	1.5	3		MHz
SR	Slew Rate	R_L = 2 KΩ		1.5		V/µs
e_N	Total Input Noise Voltage	f = 40 KHz R_g = 10 KΩ		20		nV/√Hz
V_o	DC Output Voltage Swing			2.5		Vpp
SVR	Supply Voltage Rejection	f = 100 Hz		80		dB

APPLICATION INFORMATION

Figure 1 : Application Circuit for Carrier Transmission Mode.

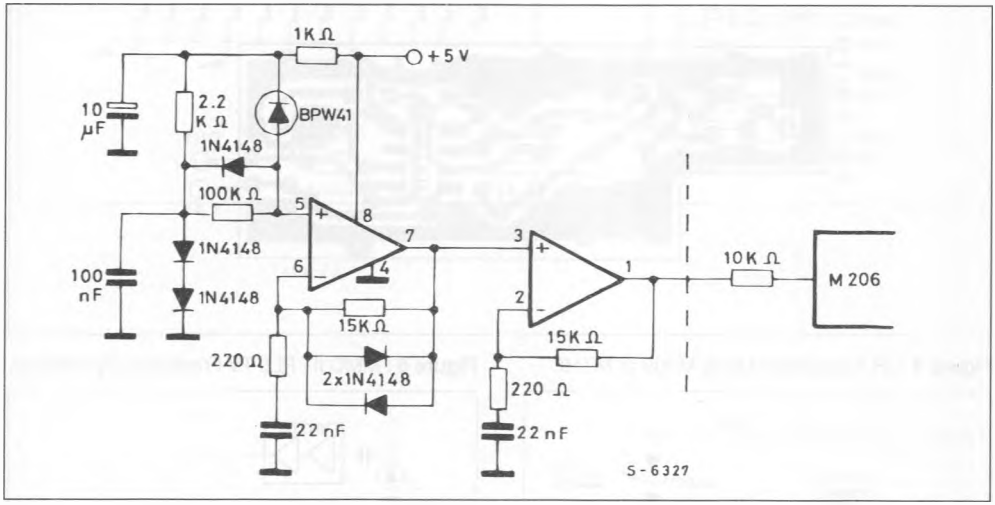


Figure 2 : Flash Mode Preamplifier.

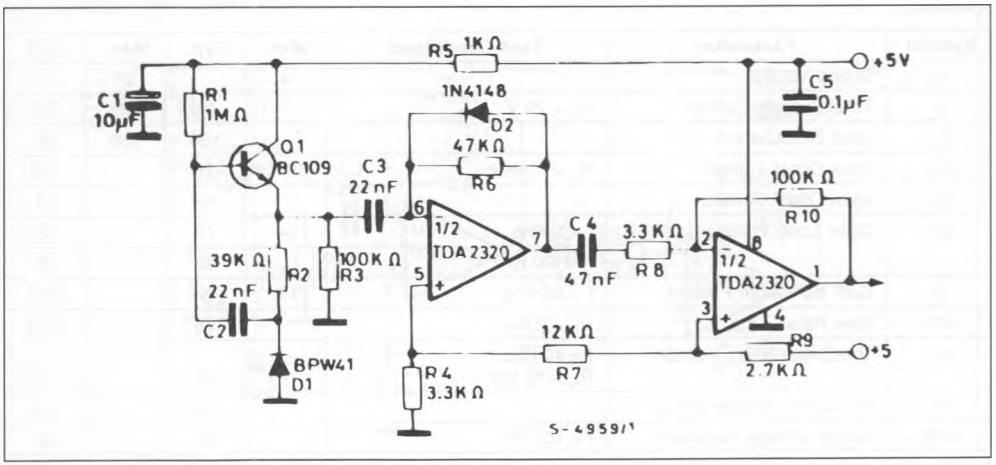


Figure 3 : P.C. and Components Layout of the Circuit of Figure 2 (1:1 scale).

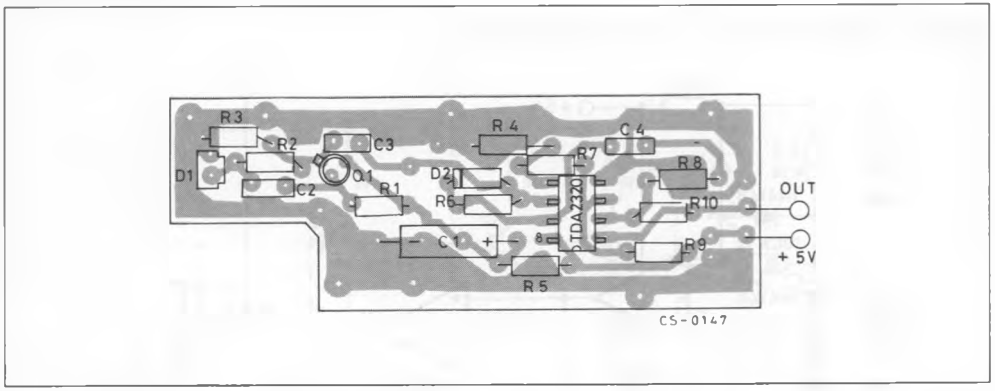


Figure 4 : IR Transmitter Using M709 or M710.

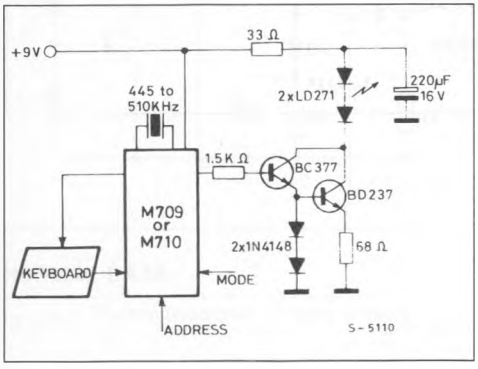


Figure 5 : MMC II - PLL TV Frequency Synthetizer.

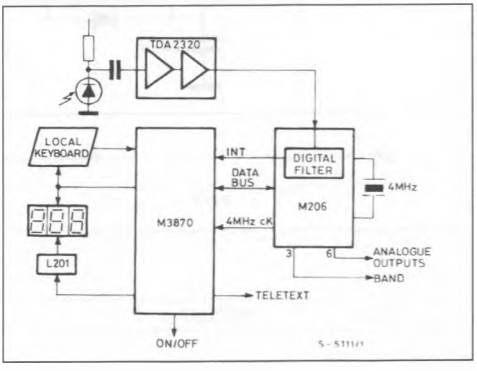


Figure 6 : IR Preamplifier and Remote Control Receiver for 32 Channel Voltage Synthetizer (EPM-M293).