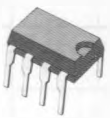
PREAMPLIFIER FOR INFRARED REMOTE CONTROL SYSTEMS

The TDA2320 is a monolithic integrated circuit in Minidip package specially designed to amplify the IR signal in remot controlled TV or radio sets. It directly interfaces with the digital control circuitry.
The TDA 2320 incorporates a two stages amplifier with excellent sensitivity and high noise immunity. It can work with a single 5V supply voltage and flash or carrier transmission modes as provided for example by the M709/M710C/ MOS transmitter.

The TDA2320 is particularly intended to be used in conjunction with the M104 and M206 + M3870 remote control receivers.



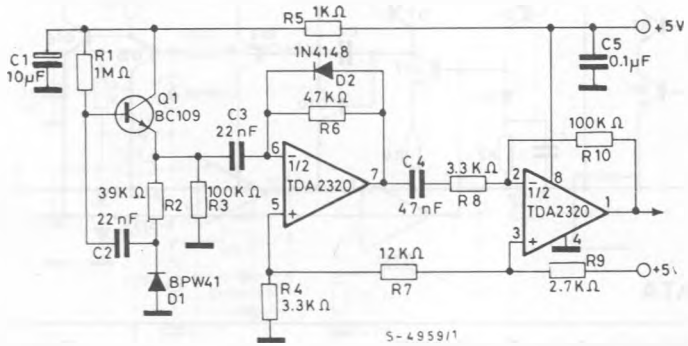
Minidip Plastic

ORDERING NUMBER: TDA2320

ABSOLUTE MAXIMUM RATINGS

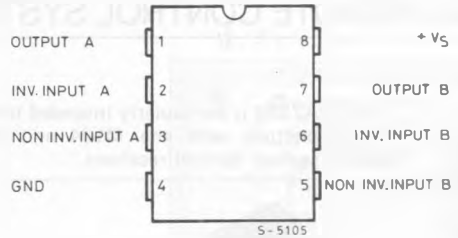
V_s	Supply voltage	20	V
$T_{stg,\ j}$	Storage and Junction temperature	-40 to 150	°C
P_{tot}	Total power dissipation at T_{amb} = 70°C	400	mW

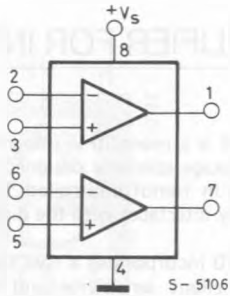
APPLICATION CIRCUIT (Flash mode preamplifier)



CONNECTION AND BLOCK DIAGRAM

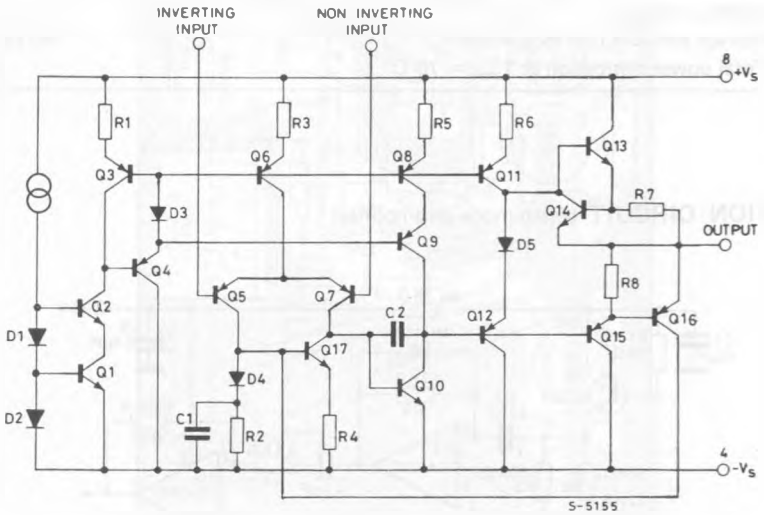
(top view)





SCHEMATIC DIAGRAM

(one section)



THERMAL DATA

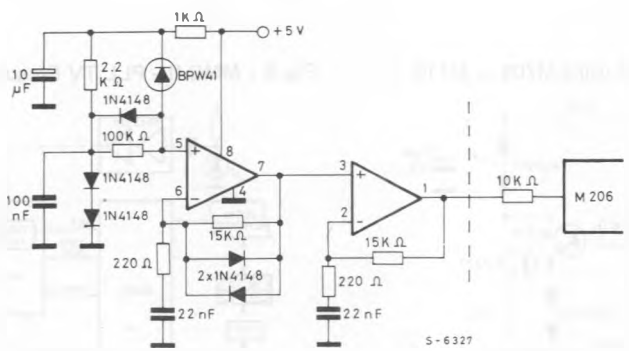
$R_{th\ j\text{-}amb}$	Thermal resistance junction-ambient	max	200	°C/W

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

Parameter		Test conditions	Min.	Typ.	Max.	Unit
V_s	Supply voltage		4		20	V
I_s	Total supply current	V_s = 20V		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 Rg= 10KΩ		20		$nV\sqrt{Hz}$
V_o.	DC output voltage swing			2.5		Vpp
SVR	Supply voltage rejection	f = 100 Hz		80		dB

APPLICATION INFORMATION

Fig. 1 - Application circuit for carrier transmission mode



APPLICATION INFORMATION (continued)

Fig. 2 - Flash mode preamplifier

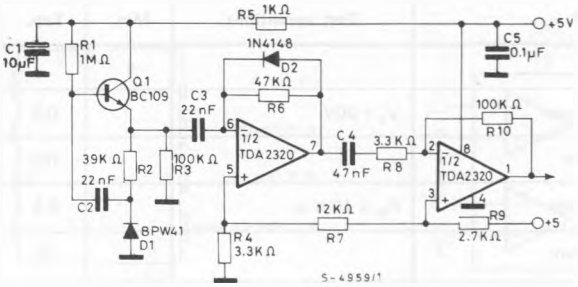


Fig. 3 - P.C. and components layout of the circuit of fig. 2 (1 : 1 scale)

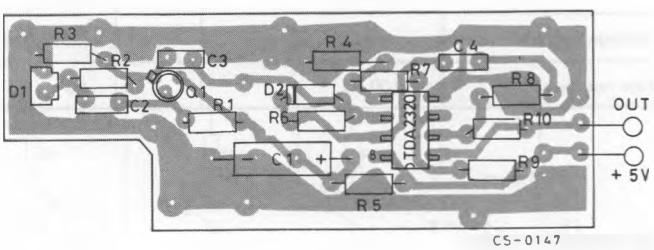


Fig. 4 - IR transmitter using M709 or M710

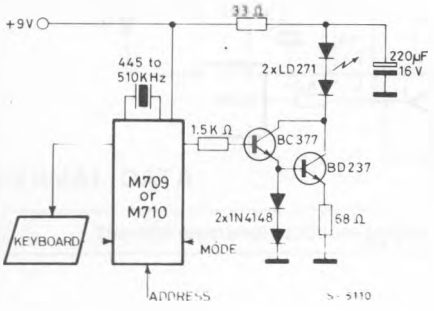
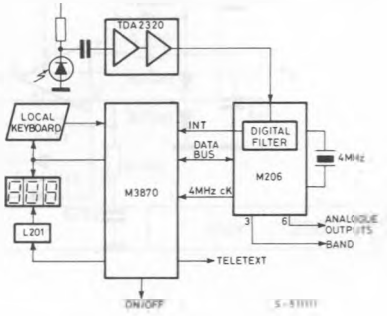


Fig. 5 - MMC II - PLL TV Frequency synthesizer



APPLICATION INFORMATION (continued)

Fig. 6 - IR Preamplifier and Remote Control receiver for 32 channel voltage synthesizer (EPM - M293)