

SECAM discriminator IC

BA7007

The BA7007 is a SECAM discriminator suitable for use in video cassette recorders. The BA7007 includes a pre-limiter circuit, detector, slicer-tuning amplifier and comparator. By adding a ceramic filter, and LC circuit for the $f_H/2$ oscillation frequency, and a few resistors and capacitors it is possible to construct an extremely sensitive SECAM discriminator using a simple circuit with low space requirements that will lead to lower costs, and better performance and reliability.

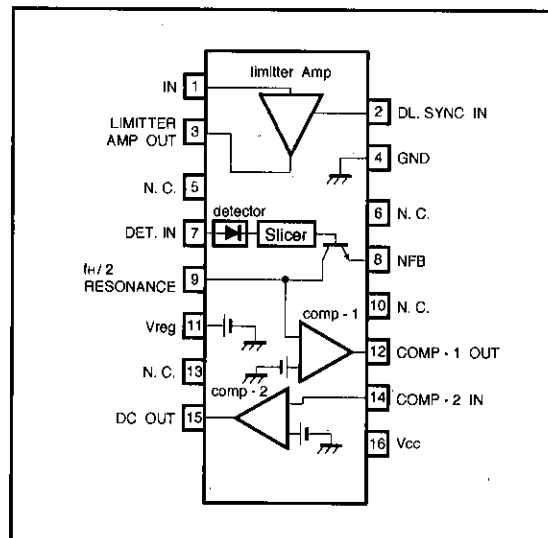
●Applications

SECAM discriminator for VCRs.

●Features

- 1)Extremely stable SECAM discrimination even with power supply and burst-signal input level fluctuations.
- 2)Digital conversion-type integration is used to ensure a large noise margin, and give high sensitivity.
- 3)Low variation in discriminator sensitivity means that adjustment is not necessary.
- 4)Few external components required.
- 5)Large current output capacity.

●Block diagram



● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	Vcc	15	V
Power dissipation	Pd	400 *	mW
Operating temperature	Topr	-25~75	°C
Storage temperature	Tstg	-55~125	°C

* Reduced by 4mW for each increase in Ta of 1°C over 25°C.

● Electrical characteristics (Unless otherwise specified Ta=25°C and Vcc=9V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	Measurement Circuit
Quiescent current	I _Q	—	10	15	mA	Limiter amplifier off, no output	Fig.1
Limiter amplifier gain	G _{V1-4}	11	15	19	dB	V _{IN} =0.1V _{P-P} ; f=10kHz, R _L =100kΩ	Fig.1
Limiter amplifier maximum gain	V _{O4}	0.9	1.25	1.6	V _{P-P}	V _{IN} =0.1V _{P-P} ; f=10kHz, R _L =100kΩ	Fig.1
Extracted pulse threshold	V _{TH}	—	0.6	—	V	Pin 2 voltage	Fig.1
Tuning amplifier output voltage	V _{O10}	0.2	1.35	2.5	V _{P-P}	V=0.2V _{P-P} ; f=10kHz	Fig.1
Tuning amplifier supply voltage	V ₁₀	—	4.3	—	V	R _L =10kΩ	Fig.1
DC output voltage	V _{15ON}	6.5	8.2	—	V	R _L =510Ω	Fig.1
DC output leakage voltage	V _{15OFF}	—	0.0	0.5	V	R _L =100kΩ	Fig.1

● Measurement circuit

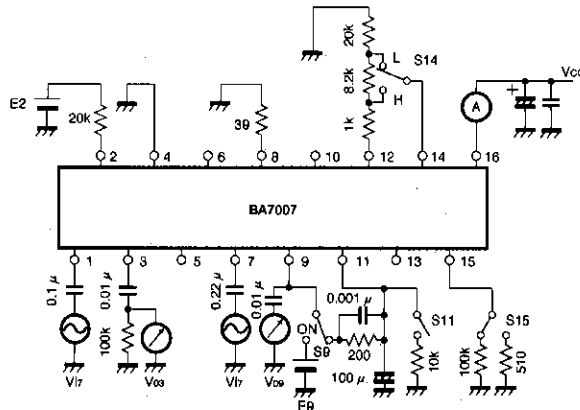


Fig.1

	E2	E9	S9	S11	S14	S15
I _{CC}	0	0	OFF	OPEN	L	100k
G _{V2-3} , V _{O3}	2.5V	0	OFF	OPEN	L	100k
V _{O9}	0	0	OFF	OPEN	L	100k
V ₁₁	0	0	OFF	CLOSE	L	100k
V _{15 ON}	0	6.5V	ON	OPEN	H	510
V _{15 OFF}	0	6.5V	ON	OPEN	L	100k

PAL/SECAM detector

VCR components

●Application example

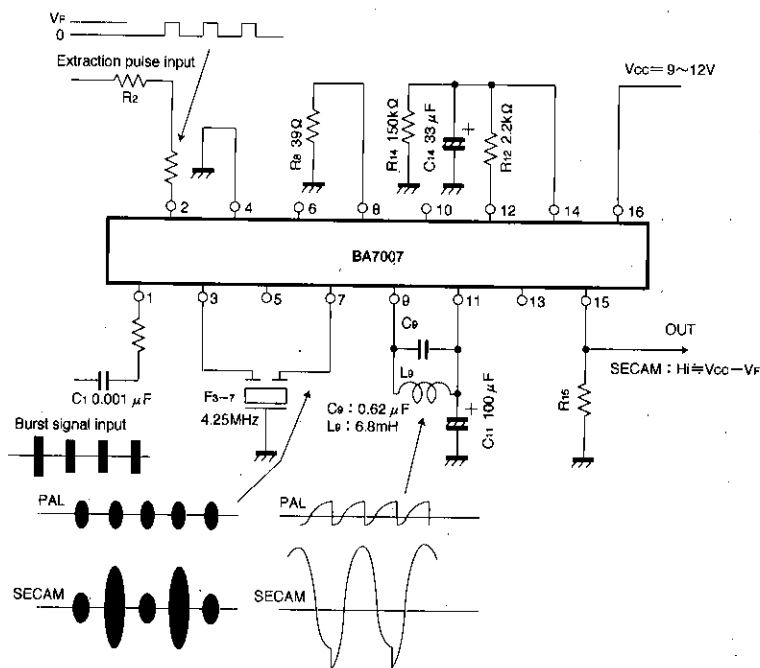
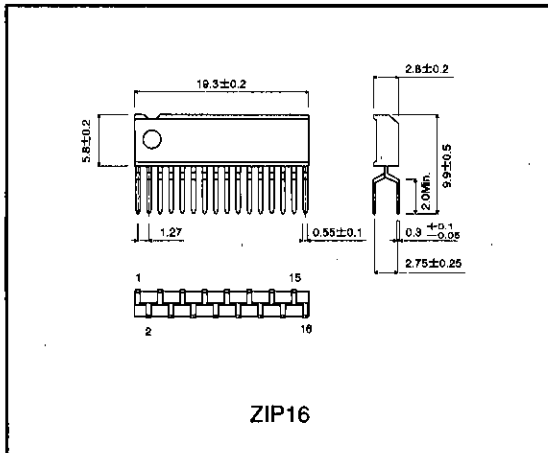


Fig 2

C ₁	Limiting amplifier input coupling capacitor
R ₂	Extraction pulse current limiting resistor
F ₃₋₇	4.25MHz band-pass filter (impedance: 1kΩ) (It is also possible to use a 4.4MHz filter, but there will be a slight drop in discrimination sensitivity). Input/output impedance: 1kΩ
R ₈	Resistor for adjusting the tuning amplifier output level
C ₉ L ₉	For f _{H/2} resonator circuit
C ₁₁	Ripple filter (for LC resonator circuit)
C ₁₂ C ₁₄	Components that determine the discrimination time (charge/discharge time constant)
C ₁₄	Charging time constant = R ₁₂ and C ₁₄
R ₁₄	Discharge time constant = R ₁₄ and C ₁₄
R ₁₅	Resistor for absorption of output leakage

●External dimensions (Units: mm)



PAL/SECAM detector

VCR components

This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.