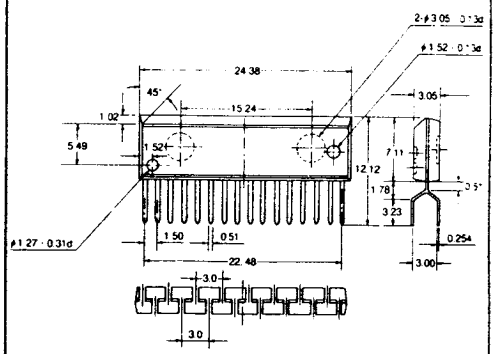
DBL 2036

PAL / SECAM DETECTOR FOR A VTR

16ZIP Unit: mm



The DBL 2036 is a monolithic integrated circuit designed for use the PAL / SECAM Signal Detector.

☐ FUNCTION

- ○ Burst Gate and Limit Amp.
- ○ F-V Converter
- ○ Master-Salve F/F
- ○ Level Shifter and Peak detector
- ○ Diff Amp and Comparator

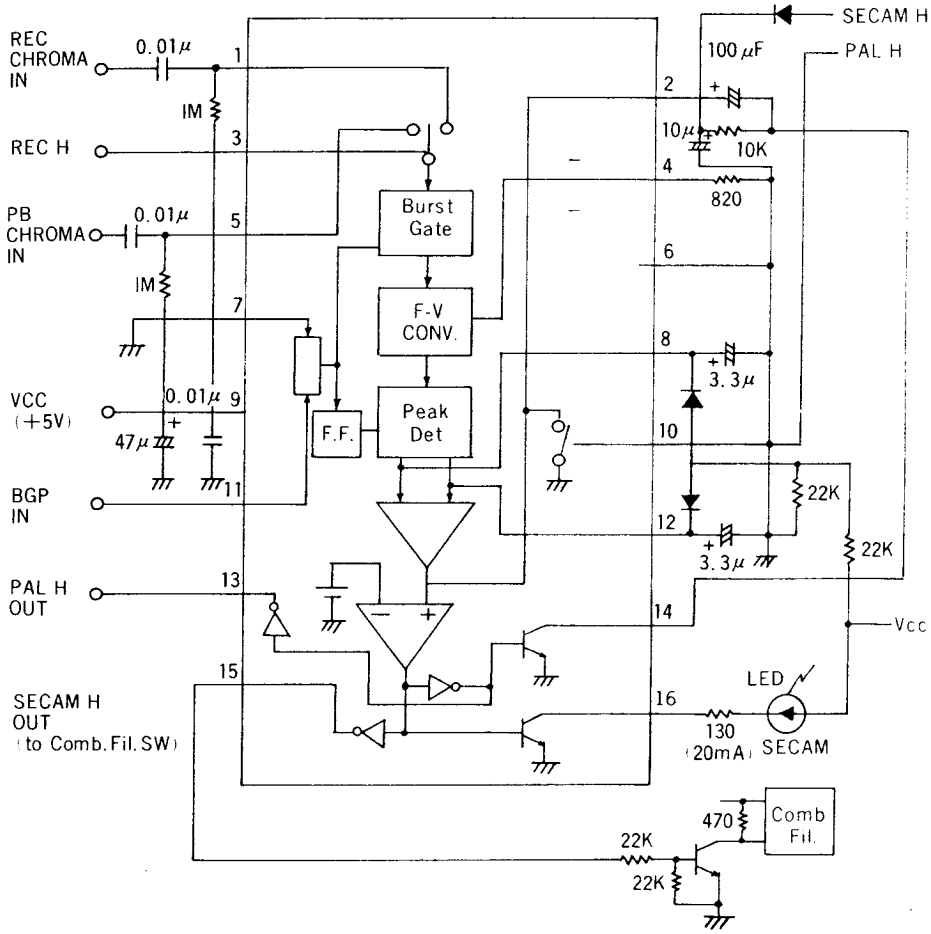
☐ FEATURES

- ○ Possible to detect high sensitivity for variation of noise and burst input level
- ○ Very few external Components
- ○ built-in display LED dirver.
- ○ Possible to use burst Gate Pulse of positive or negative charge
- ○ Operating Supply voltage Range(V_{cc}=4.5V~6.0V)

☐ MAXIMUM RATINGS(Ta=25℃)

Characteristic	Symbol	Rating	Linit
Maximum Supply Voltage	V_{cc}(max)	7.0	V
Allowable Power Dissipation	P_d(max)	130	mW
Operating Temperature	T_{opg}	−10~+70	℃
Storage Temperature	T_{stg}	−55~+150	℃

☐ BLOCK DIAGRAM AND APPLICATION CIRCUIT



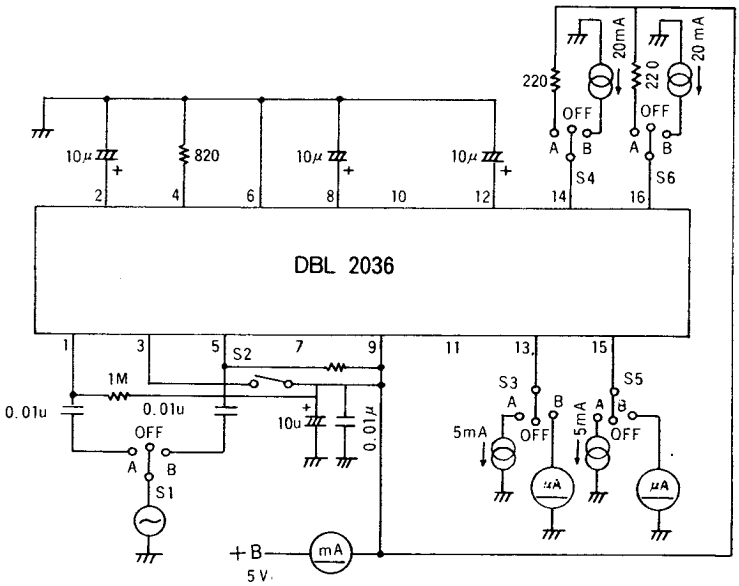
note 1 : Pin 7 → input, pin 11 → V_{CC} When BGP is Positive charge.

note 2 : Pin 10 open When pin 10 is not use.

ELECTRICAL CHARACTERISTICS(Ta=25℃, V_{CC}=5V)

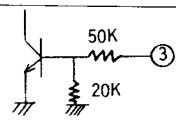
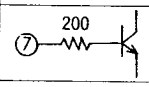
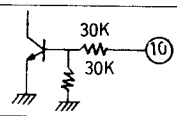
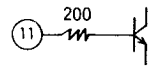
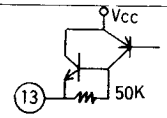
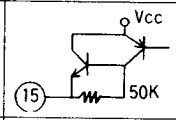
Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Dissipation Current	I_{CC}		6.7	9.6	12.4	mA
F-V Variable Gain(PB)	$\triangle V_P$	Difference between 4.4MHZ and 4.25MHz	75	105	135	mV
F-V Variable Gain(REC)	$\triangle V_R$	〃	75	105	135	mV
PAL→SECAM Difference of inverter voltage	$V_{\triangle 12}$		35	50	65	mV
R/P Convert Threshold Voltage	V_{TH}		2.0	2.35	2.7	V
BG Threshold Voltage Ⅰ	V_{TH}		1.5	1.7	1.9	V
〃 Ⅱ	V_{TH}		3.2	3.4	3.6	V
Forced PAL Threshold Voltage	V_{THPH}		1.3	1.7	2.2	V
Forced SECAM Threshold Voltage	V_{THS}		1.7	2.0	2.3	V
Detector Output Voltage Ⅰ	V_{13}	ID=5mA	4.0	4.2	4.4	V
〃 Ⅱ	V_{13}	ID=5mA	4.0	4.2	4.4	V
Detector output Leak Current Ⅰ	I_{13}(Leak)		–	0	5	μA
〃 Ⅱ	I_{13}(Leak)		–	0	5	μA
Pin 12 DC Voltage	V_{12}	4.43MHZ 100mV p-p input	2.1	2.6	3.1	V
Input Burst Level	V_{IN}		60	100	200	mVp-p
Drive Saturation Voltage Ⅰ	V_{14}	ID=20mA	–	170	400	mV
〃 Ⅱ	V_{16}	ID=20mA	–	170	400	mV

☐ TEST CIRCUIT



	S1	S2	S3	S4	S5	S6	Condition
I_{CC}	off	off	off	off	off	off	V_9=5V
V_P	B	↓	↓	↓	↓	↓	Input : 100mVp-p, 4.4MHz and 4.25MHz, Measure Voltage Difference of V_8(or V_{12})
V_R	A	on	↓	↓	↓	↓	the same as above
V_{8-12}	off	off	↓	A	↓	↓	V_7=0V, V_{11}=5V, V_8=1.9V, V_{12}=1.9V+α, V_{14}>4V, α(0V ↑)
V_{3TH}	↓	↓	↓	off	↓	↓	V_1=V_7=V_{11}=0V, V_8<0.1V, Measure V_3(0V ↑)
V_{7TH}	↓	↓	↓	↓	↓	↓	V_{11}=5V, V_8>1.0V, Measure V_7(0V ↑)
V_{11TH}	↓	↓	↓	↓	↓	↓	V_7=0V, V_8>1.0V, Measure V_{11}(5V ↓)
V_{10TH}	↓	↓	↓	↓	↓	A	V_7=V_{11}=0V, V_{16}>4V, Measure V_{10}(0V ↑)
V_{2TH}	↓	↓	↓	A	↓	off	V_8=V_{12}=3V, V_{14}>4V, Measure V_2(0V ↑)
V_{13}	↓	↓	A	off	↓	↓	Pin13 Voltage of V_2=0V, Drive Current 5mA
V_{15}	↓	↓	off	↓	A	↓	Pin15 Voltage of V_2=3V, Drive Current 5mA
I_{13}(leak)	↓	↓	B	↓	off	↓	Drive Current when V_2=3V, Pin 13=GND
I_{15}(leak)	↓	↓	off	↓	B	↓	Drive Current when V_2=0V, Pin 15=GND
V_{14}(sat)	↓	↓	↓	B	off	↓	V_2=0V, Measure Pin14 Voltage, Drive Current 20mA
V_{16}(sat)	↓	↓	↓	off	↓	B	V_2=3V, Measure Pin16 Voltage, Drive Current 20mA

☐ I/O FUNCTION

Pin	Function	I/O Impedance		DC voltage	Comment
1	REC Chroma in	10Kohm		4.1V	
2	SECAM Holder				SECAM>2.0V
3	R/P Control			0V (PB)	REC>2.4V
4	Current Source	Open Emitter		410mV	
5	PB Chroma In	10Kohm		4.1V	
6	GND			OV	
7	BGP In	Pulse			Burst Gate>1.7V
8	Peak Filter 1	Emitter follower			
9	V_{CC}			5V	
10	PAL high In			0V	Forced PAL>1.7V
11	$\overline{BGP}$ In	Pulse			Burst Gate>3.4V
12	Peak Filter 2	Emitter follower			
13	PAL high out			4.1V (PAL)	Until 5mA
14	PAL Drive	NPN Open Collector			Until 25mA
15	SECAM high out			4.1V (SECAM)	Until 5mA
16	SECAM Drive	NPN Open Collector			Until 25mA