Description

The GL3917 has been designed to recover data from composite video type signals in KBPS VCR. As well as receiving data. the GL3917 will resynchronize a clock output to the data stream and also provide a composite sync output.

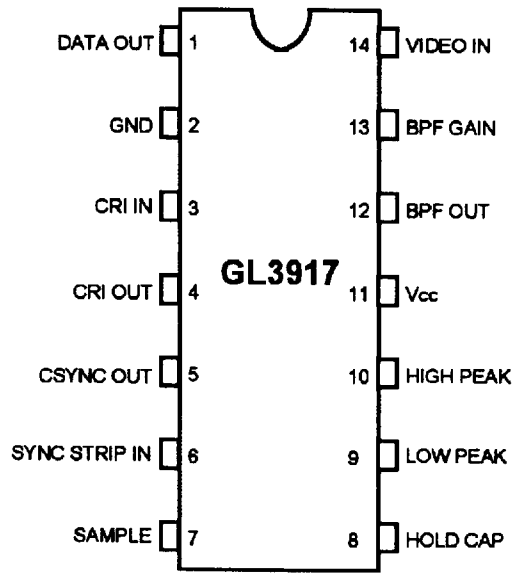
Features

- No Adjustments Required
- Open Collector Output for Up to 12V (TTL Compatible Output)
- Signal Level Insensitivity (Edge Detection)

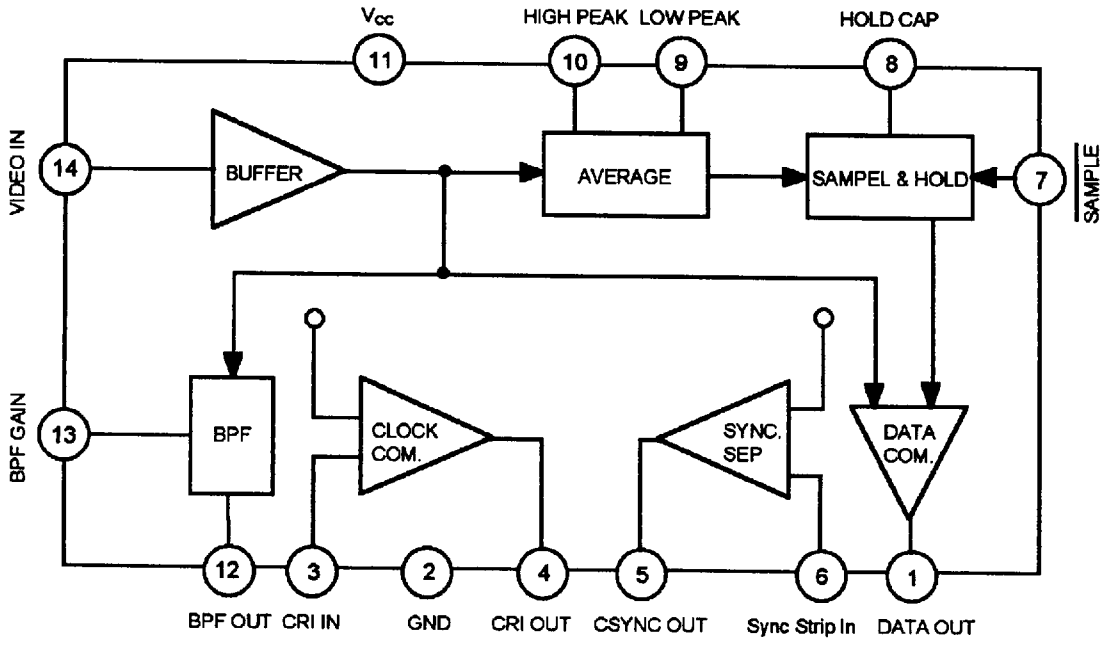
Absolute Maximum Ratings (T_A=25℃)

Supply Voltage	Vcc	15	V
Power Dissipation	P_D	660	mW
Operationg Temperature	T_{OPR}	-20 to 70	℃
Storage Temperature	T_{STG}	-35 to 135	℃

Pin Configuration



Block Diagram



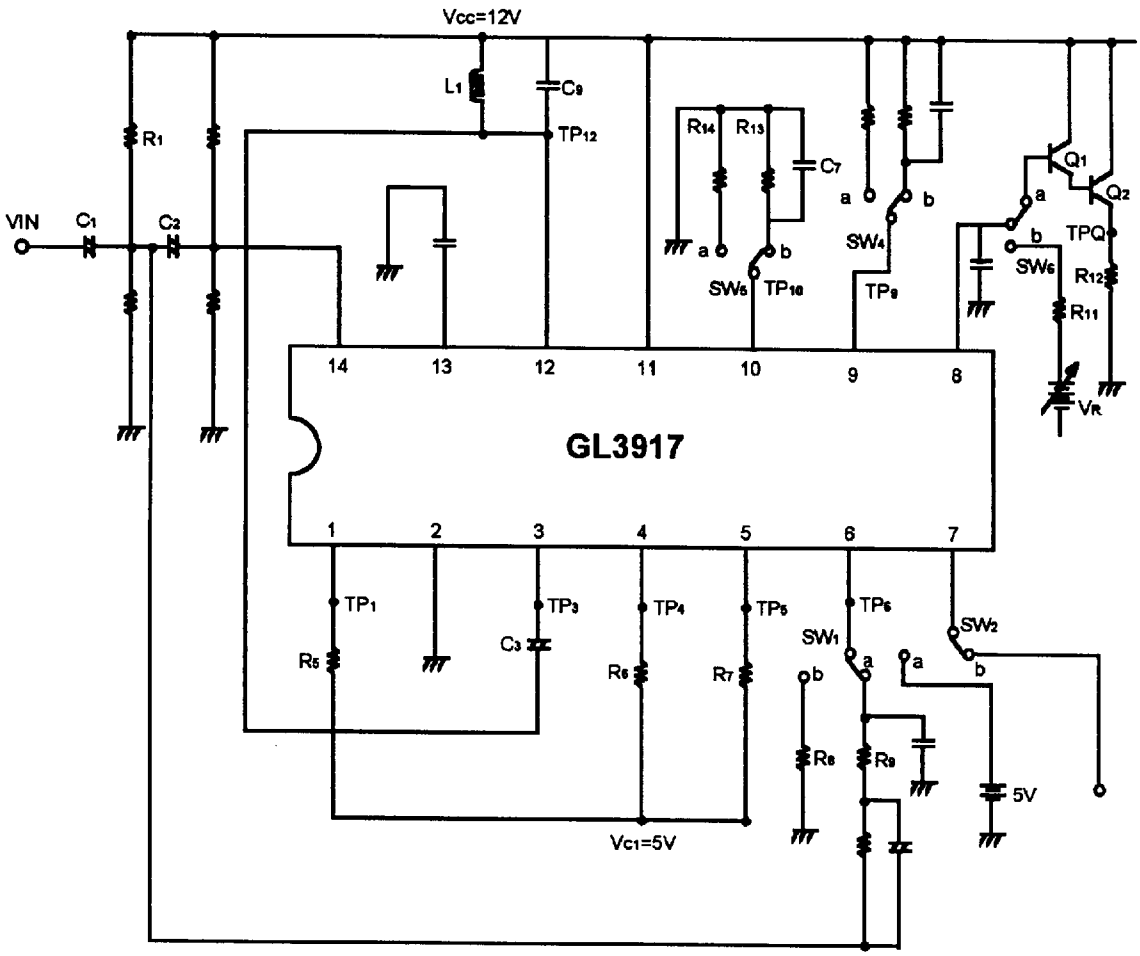
Electrical Characteristics (T_A=25℃, V_{CC}=12V)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	No Signal	10.8	12	13.2	V
Quiescent Current	I_{CC}	No Signal	13	19	25	mA
Pin 3 DC Voltage	V_{P3}	V_{CC} = 12V No Signal	2.6	2.8	3.0	V
Pin 6 DC Voltage	V_{P6}	V_{CC} = 12V No Signal	8.2	8.8	9.4	V
Pin 8 DC Voltage	V_{P8}	V_{CC} = 12V No Signal	5.6	6.3	6.9	V
Pin 9 DC Voltage	V_{P9}	V_{CC} = 12V No Signal	6.6	7.3	7.9	V
Pin 10 DC Voltage	V_{P10}	V_{CC} = 12V No Signal	4.0	4.6	5.2	V
Pin 13 DC Voltage	V_{P13}	V_{CC} = 12V No Signal	4.2	4.6	5.0	V
Pin 14 DC Voltage	V_{P14}	V_{CC} = 12V $1V_{P-P}$, f_{IN}=503KHz, Sinewave	5.7	6	6.3	V
CRI Output Low Level	$V_{L, CRI}$	V_{CC} = 12V 40mVrms, f_{IN}=503KHz, Sinewave	—	0.2	0.6	V
CRI Output High Level	$V_{H, CRI}$	V_{CC} = 12V 40mVrms, f_{IN}=503KHz, Sinewave	4	5	—	V
CRI Output Rising Time	$t_{r, CRI}$	V_{CC} = 12V 40mVrms, f_{IN}=503KHz, Sinewave	—	200	500	ns
CRI Output Falling Time	$t_{f, CRI}$	V_{CC} = 12V 40mVrms, f_{IN}=503KHz, Sinewave	—	250	500	ns
High Peak Attack Time	HPat	V_{CC} = 12V $1V_{P-P}$, f_{IN}=20KHz, Squarewave	—	200	700	ns
High peak Decay Time	HPdt	V_{CC} = 12V $1V_{P-P}$, f_{IN}=20KHz, Squarewave	3.5	10.5	—	μs
Low peak Attack Time	LPat	V_{CC} = 12V $1V_{P-P}$, f_{IN}=20KHz, Squarewave	3.5	10.5	—	μs
Low peak Decay Time	LPdt	V_{CC} = 12V $1V_{P-P}$, f_{IN}=20KHz, Squarewave	—	200	700	ns
S/H Slew rate	$S_{R, S/H}$	V_{CC} = 12V $1V_{P-P}$, f_{IN}=20KHz, Squarewave	1.6	2.3	—	V/μs
Data Output Low Level	$V_{L, data}$	V_{CC} = 12V 354mVrms, f_{IN}=503KHz, Sinewave	—	0.2	0.6	V
Data Output High Level	$V_{H, data}$	V_{CC} = 12V 354mVrms, f_{IN}=503KHz, Sinewave	4.0	5.0	—	V
Data Output Pulse Width	$P_{W, data}$	V_{CC} = 12V 88mVrms, f_{IN}=503KHz, Sinewave	0.9	0.994	1.1	μs
Data Output Rising Time	$t_{r, data}$	V_{CC} = 12V 354mVrms, f_{IN}=503KHz, Sinewave	—	50	100	ns
Data Output Falling Time	$t_{f, data}$	V_{CC} = 12V 354mVrms, f_{IN}=503KHz, Sinewave	—	50	100	ns
Data Output Duty Time	$P_{d, data}$	V_{CC} = 12V 354mVrms, f_{IN}=503KHz, Sinewave	0.9	0.994	1.1	μs

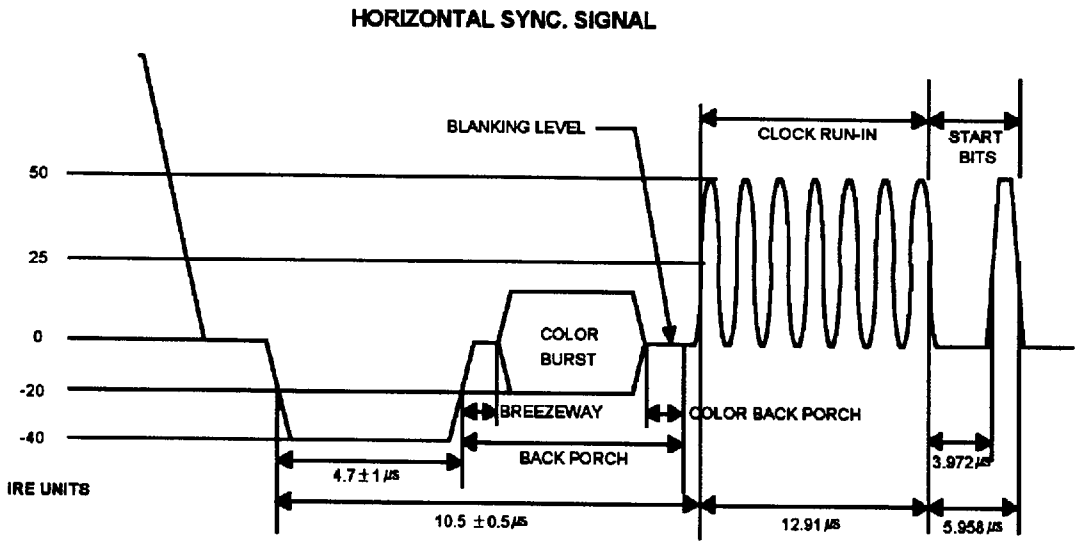
Pin Description

No.	Item	Explanation	No.	Item	Explanation
1	Data Out	Data slice output	8	Hold Cap.	Data Slice Level Molding
2	GND	Ground	9	Low Peak	Low Peak Detection
3	CRI In	Clock Run In Input	10	High Peak	High Peak Detection
4	CRI Out	Clock Run In Slice Output	11	Vcc	Power Supply
5	Csync. Out	Composite Sync Slice Output (Composite Video Signal)	12	BPF Out	Extraction of CRI from Composite Video
6	Sync. Strip In	Composite Sync Slice Input (Composite Video Signal)	13	BPF Gain	Adjust Gain of BPF
7	SAMPLE	Sample and Hold Control Pulse Input	14	Video In	Composite Video Signal Input

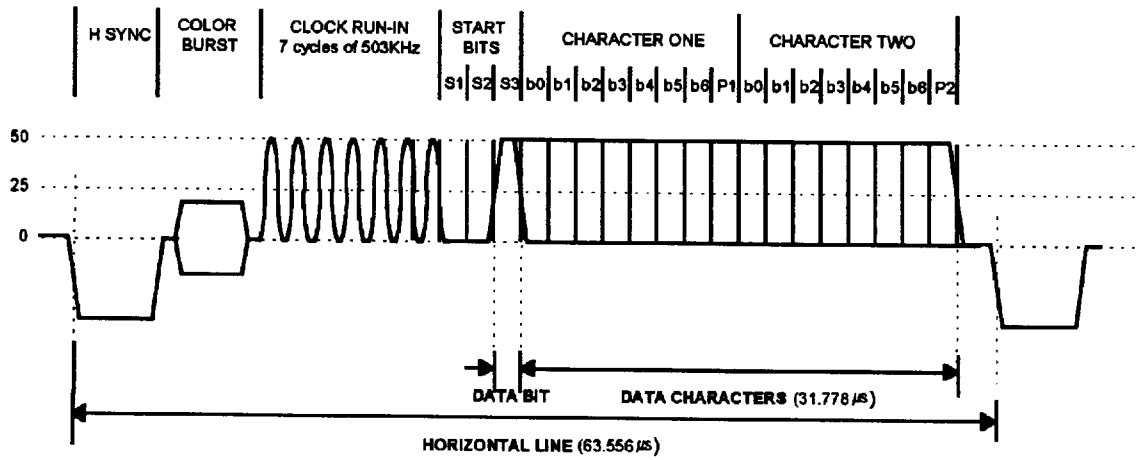
AC Test Circuit



Data Timing



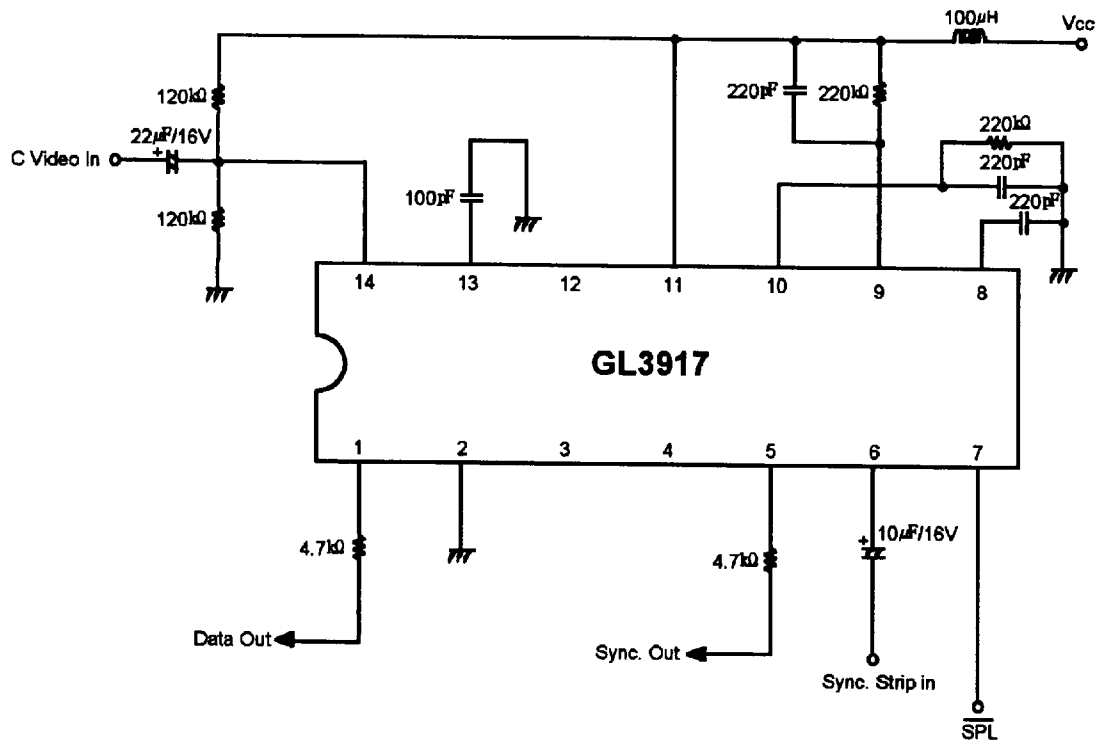
Data Signal format



NOTES :

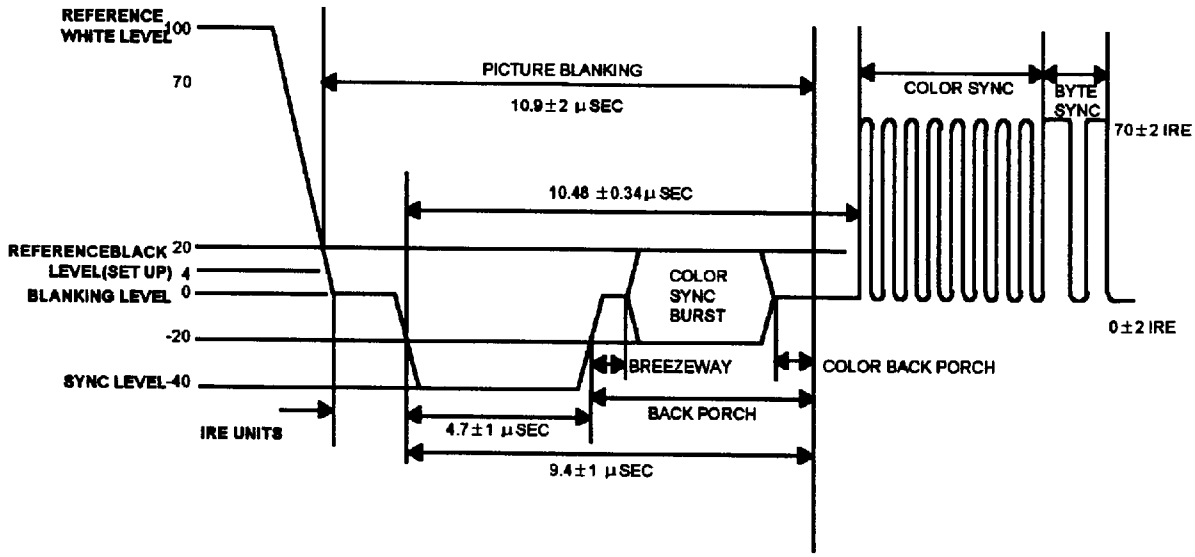
1) The Horizontal line frequency f_H is nominally 15734.26 Hz ± 0.05 Hz. Interval D shall be adjusted to D=1/(f_HX32) for the instantaneous f_H at line 21.
2) The Clock Run In signal consist of 7.0 cycles of a 0.5034965 MHz(1/D) sinewave when measured from the leading to trailing 0 IRE point. The sinewave is to be symmetrical about the 25 IRE level.
3) The negative going midpoints (half amplitude)of the Clock Run In shall be coherent with the midpoints(half amplitude) of the Start and Data bit transitions.
4) These values have been chosen to accomodate signals generated by some existing encoders.
5) Two characters, each consisting of 7 Data bits and 1 Odd Parity bit.

Application Circuit

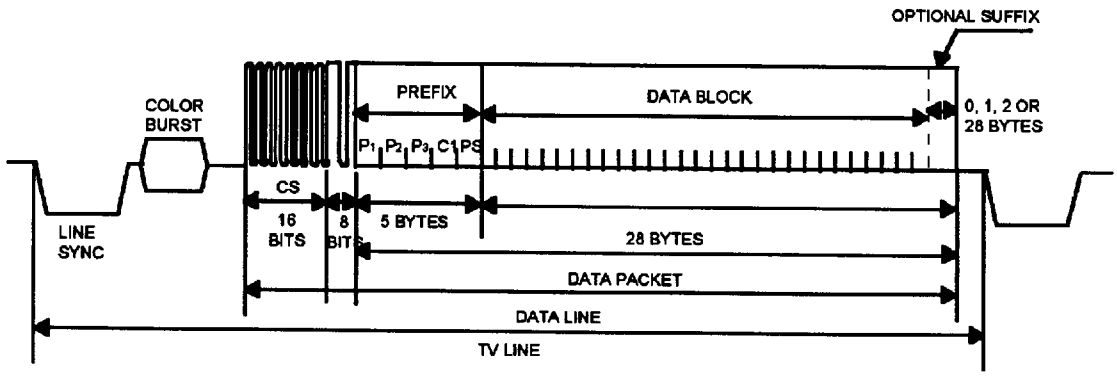


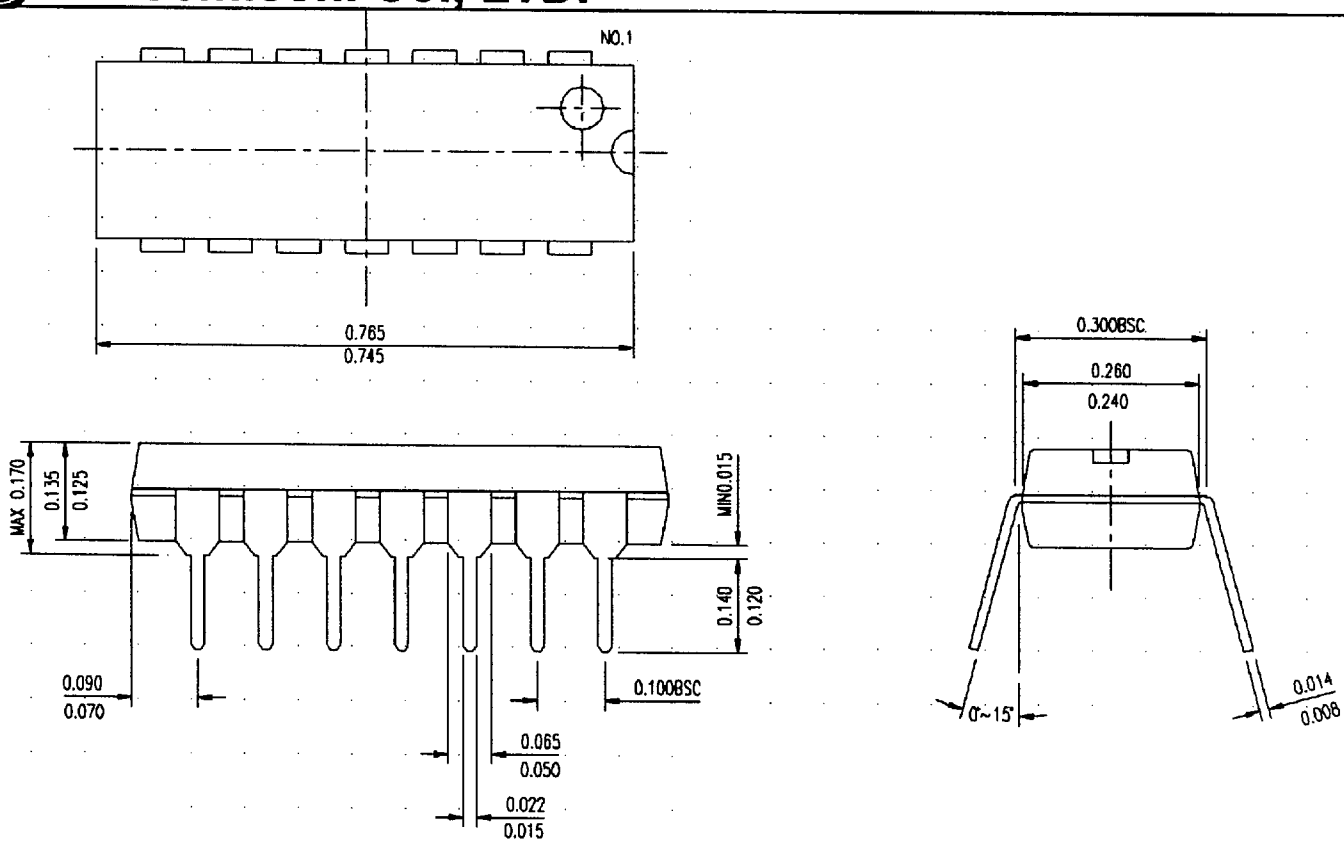
Data Timing

HORIZONTAL SYNC & BLANKING



Data Line Structure




NO.1
0.765
0.745
MAX 0.170
0.135
0.125
MIN0.015
0.140
0.120
0.090
0.070
0.100BSC
0.065
0.050
0.022
0.015
0.300BSC
0.260
0.240
0~15°
0.014
0.008