AN5766K

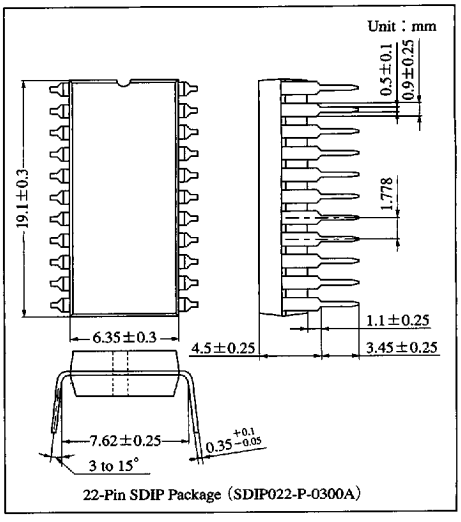
Pin-Cushion Distortion-Correction IC for CRT Monitor

■ Overview

The AN5766K is a pin-cushion distortion-correction IC for CRT monitor. It can respond to 50 to 200Hz of vertical synchronous signal input. And also, it outputs E-W correction parabola-wave and saw-tooth wave.

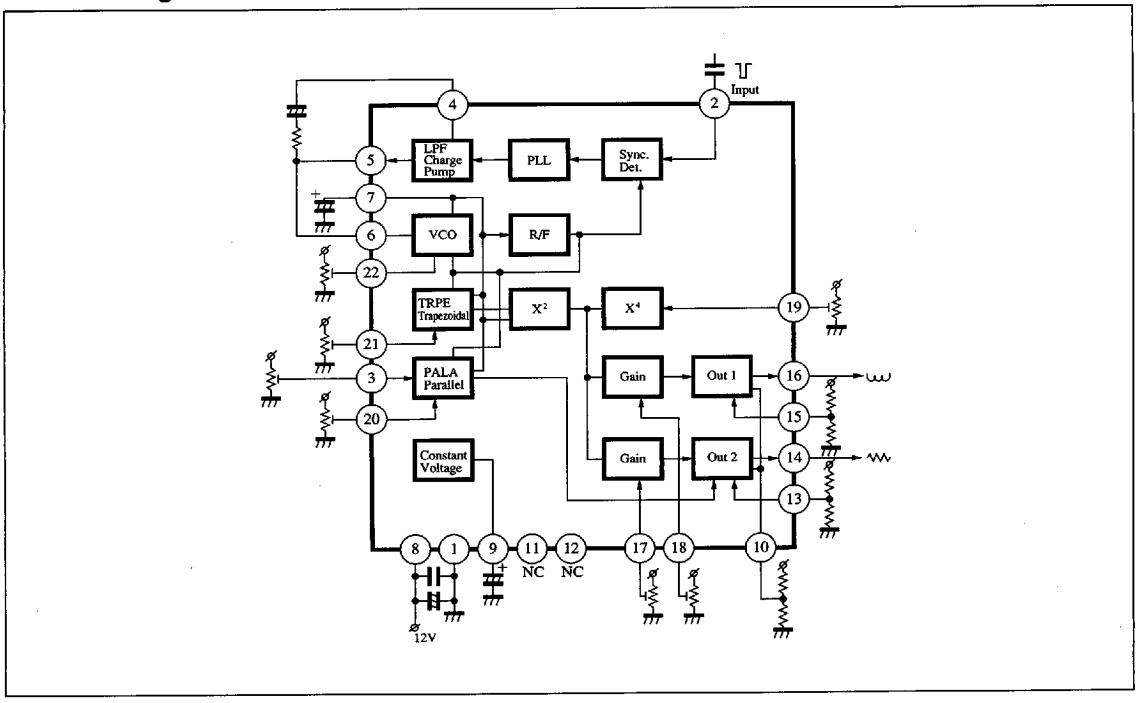
■ Features

- Vertical synchronous signal input range : f_V = 50 to 200Hz (for either polarity)
- Correction circuits for EW Pin-cushion, EW corner, and trapezoidal correction circuits.
- Correction circuits for parallelograms and EW balance



22-Pin SDIP Package (SDIP022-P-0300A)

■ Block Diagram



■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	13.4	V
Supply current	I_{CC}	20	mA
Power dissipation Note 2)	P_D	268	mW
Operating ambient temperature Note 1)	T_{opr}	−20 to +70	℃
Storage temperature Note 1)	T_{stg}	−55 to +150	℃

Note 1) Ta=25℃ except operating ambient temperature and storage temperature.
Note 2) Allowable power dissipation of the package at Ta=70℃.

■ Recommended Operating Range (Ta=25 ℃)

Parameter	Symbol	Range
Operating supply voltage range	V_{CC}	9.6V to 13.2V

■ Electrical Characteristics (Ta=25±2 ℃)

Parameter	Symbol	Condition	min	typ	max	Unit
Circuit current	I_{CC}		8	11	15	mA
Circuit voltage	V_{9-1}	V_{CC}=12V	5.3	6	6.7	V
	V_{17-1}		1.9	2.3	2.7	V
	V_{18-1}		1.9	2.3	2.7	V
	V_{19-1}		1.9	2.3	2.7	V
	V_{20-1}		1.9	2.3	2.7	V
	V_{21-1}		1.9	2.3	2.7	V
	V_{22-1}		1.9	2.3	2.7	V
Maximum parabola output amplitude	e_{MAX}	V_{CC}=12V At V_{18}=5V	2.9	4.0	5.1	V_{P-P}
Center position adjustment quantity	Δe_S	V_{CC}=12V At V_{22}=5V→0V change	0.4	0.8	1.2	V
Trapezoidal correction quantity	Δe_T	V_{22}=open, at V_{21}=5V→0V change	−2.7	−2.1	−1.5	V
Corner correction amount	Δe_C	V_{21}=open, at V_{19}=5V→0V change	1.9	2.5	3.1	V
Side Pin-cushion amplitude (min.)	e_{MIN}	V_{18}=0V, V_{15}=8V at negative polarity parabola output	2.9	4.0	5.1	V_{P-P}
Side Pin-cushion amplitude (typ.)	e_{TYP}	At V_{18}=0V, V_{15}=8V V_{18}=2.5V	—	0.3	0.5	V_{P-P}
Standard RAMP output	e_{R-TYP}	V_{CC}=12V At V_{17}, V_{20}, V_{21}=open	—	0.3	0.5	V_{P-P}
Parallelogram correction (max.)	e_{P1}	V_{CC}=12V At V_{20}=5V	2.9	4.0	5.1	V
Parallelogram correction (min.)	e_{P2}	V_{CC}=12V At V_{20}=0V	−3.8	−3.0	−2.2	V
Parallelogram amplitude (max.)	e_{G1}	V_{CC}=12V, V_{20}=open V_{17}=5V, At V_{13}=4V	3.1	4.2	5.3	V
Parallelogram amplitude (min.)	e_{G2}	V_{CC}=12V V_{17}=0V, At V_{13}=8V	−5.3	−4.2	−3.1	V
Ramp output trapezoidal correction	Δe_{RT}	V_{CC}=12V, V_{13}=8V At V_{21}=5V→0V change	−3.8	−3.0	−2.2	V
PLL synchronous input (min.)	f_{V1}	VCO frequency in Vsync 50Hz input	—	50	—	Hz
PLL synchronous input (max.)	f_{V2}	VCO frequency in Vsync 200Hz input	—	200	—	Hz
Input bias voltage	V_{2-1}	Open voltage at V_{CC}=12V	—	4.9	—	V

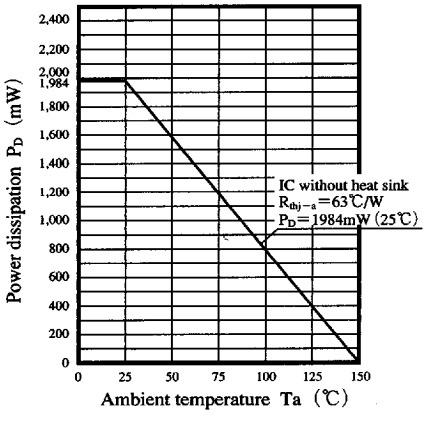
Pin Descriptions

Pin No.	Pin name	Pin No.	Pin name
1	GND	12	NC
2	Ver. sync. signal input	13	DC bias input for RAMP output
3	Cross-over distortion Adj. for RAMP output	14	RAMP output
4	LPF	15	DC Bias input for parabola output
5	Charge pump output	16	Parabola output
6	VCO control input	17	Parallelogram amplitude control
7	VCO capacitor	18	Side Pin-cushion amplitude control
8	V_{CC} (+12V)	19	Corner correction control
9	Bias output (6V)	20	Parallelogram correction control
10	DC offset	21	Trapezoid correction control
11	NC	22	Center position correction control

Reference

Power dissipation of package

$P_D - Ta$



Application Circuit