

AN5766K

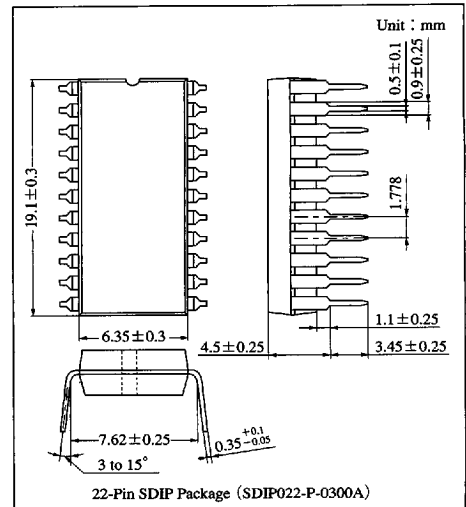
Pin-Cushion Distortion-Correction IC for CRT Monitor

Overview

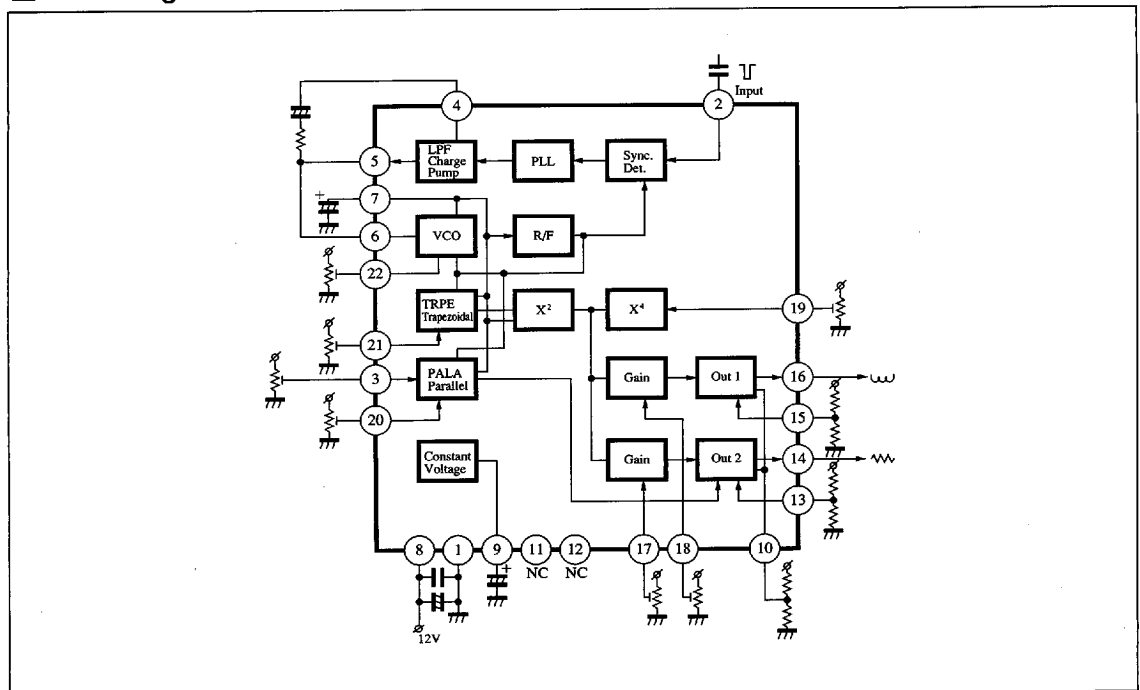
The AN5766K is a pin-cushion distortion-correction IC for CRT monitor. It can respond to 50 to 200Hz of vertical synchronous signal input. And also, it outputs E-W correction parabola-wave and saw-tooth wave.

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



Block Diagram



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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	°C
Storage temperature ^{Note 1)}	T_{stg}	-55 to +150	°C

Note 1) $T_a = 25^\circ\text{C}$ except operating ambient temperature and storage temperature.

Note 2) Allowable power dissipation of the package at $T_a = 70^\circ\text{C}$.

Recommended Operating Range ($T_a = 25^\circ\text{C}$)

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

Electrical Characteristics ($T_a = 25 \pm 2^\circ\text{C}$)

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

ICs for
TV

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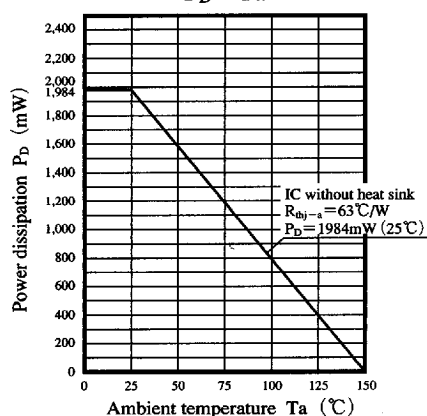
Pin Descriptions

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

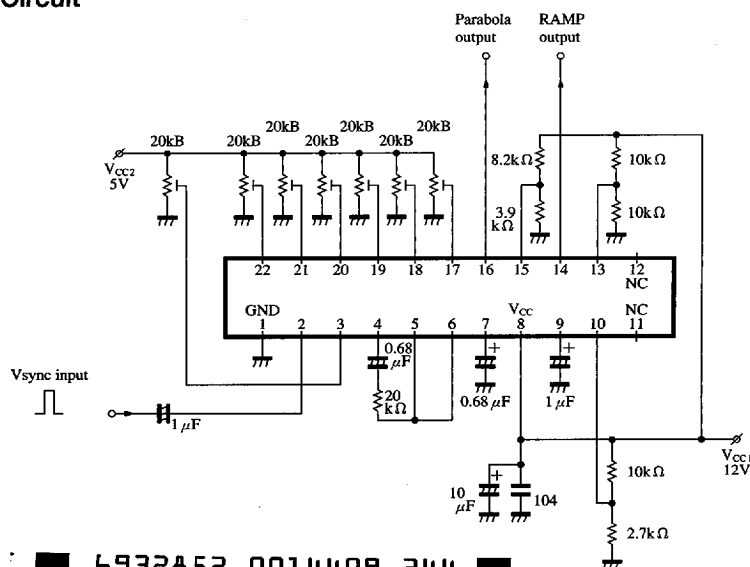
Reference

Power dissipation of package

$P_D - T_a$



Application Circuit



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