

1-CHIP DEFLECTION SYSTEM

The KA2133 consists of a vertical system including an output function and a horizontal system including an AFC function. It is for use in small size color TVs, B/W TV receivers and monitors.

FUNCTIONS

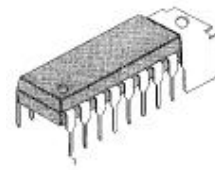
(Horizontal Section)

- SYNC separators
- Horizontal oscillators
- Horizontal predrivers
- Horizontal AFCs
- Shunt regulators (Typ: 6.7V)

(Vertical Section)

- Vertical oscillators
- Vertical predrivers
- Vertical output
- Flyback generators

16-DIPH-300

**ORDERING INFORMATION**

Device	Package	Operating Temperature
KA2133	16-DIHP-300	-20°C ~+75°C

FEATURES

- Low power consumption, direct deflection coil driving capability
(Flyback voltage is two times as high as supply voltage is supplied during flyback period)
- Variable circuit of vertical retrace time on chip.

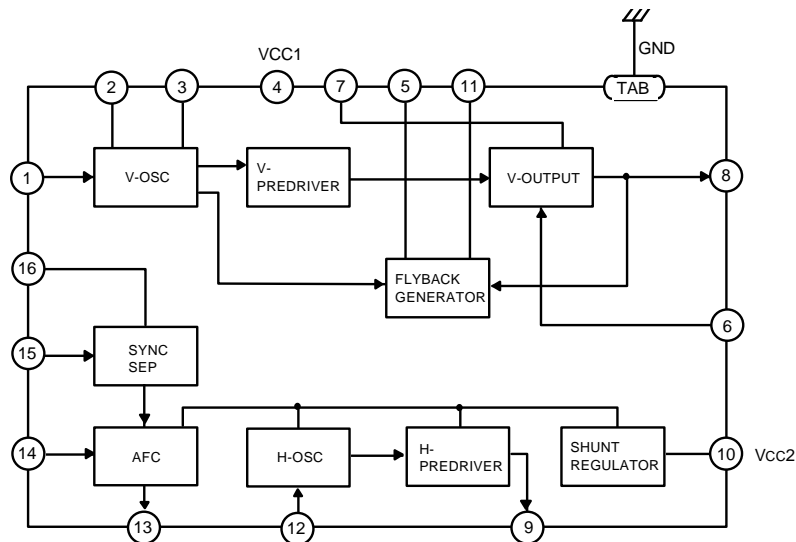
BLOCK DIAGRAM

Fig. 1

ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$)

Characteristic	Symbol	Value	Unit
Vertical Supply Voltage	V_{CC}	15	V
Horizontal Supply Current	I_{10}	30	mA
Vertical Output Current	I_8	-500 ~+500	mA peak
Horizontal Output Current (Pulse)	I_9	15 ~+5	mA
Flyback Generator Output Current	I_5	-500 ~+500	mA peak
Power Dissipation	P_D	1.3	W
Operating Temperature	T_{OPR}	-20 ~+75	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 ~+150	$^\circ\text{C}$

Characteristic	Symbol	Min	Typ	Max	Unit
Vertical Supply Voltage	V_{CC}	9.6	12.0	14.4	V
Horizontal Supply Current	I_{10}	6.5	12	18	mA

RECOMMENDED OPERATING CONDITIONS ($T_A=25^\circ\text{C}$)**ELECTRICAL CHARACTERISTICS ($V_{CC}=12\text{V}$, $I_{10}=12\text{mA}$, $T_A=25^\circ\text{C}$)**

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit	Test Fig
Vertical Supply Current	$I_{CC}(1)$	$SW_A=2$	-	85	100	mA	2
Vertical Supply Current	$I_{CC}(2)$	No Input Signal $SW_A=2$	6	12	20	mA	2
Vertical Free Running Frequency	f_{VO}	$SW_A=1$	55	60	65	Hz	2
Drift of Vertical Free-Running Frequency	$\Delta f_{VO}/V_{CC}$	$\Delta f_{VO}=1f_{VO}(14.4\text{V})-f_{VO}(9.6\text{V})$ $SW_A=2$	-	0.8	2	Hz	2
	$\Delta f_{VO}/T_A$	$\Delta f_{VO}=1f_{VO}(-20^\circ\text{C}) - f_{VO}(+70^\circ\text{C})$ $SW_A=2$	-	1.5	2	Hz	2
Vertical Output Center Voltage	V_{MID}	$SW_A=2$	5.3	5.8	6.3	V	2
Vertical Output Current	I_8	$SW_A=2$	450	500	550	mA _{P-P}	2
Horizontal Supply Pin Voltage	V_{10}	$SW_B=2$	6.2	6.7	7.2	V	2
Horizontal Free Running Frequency	f_{HO}	$I_{10}=12\text{mA}$ $SW_B=1$	15.0	15.75	16.5	KHz	2
Horizontal Output Pulse Width	t_{HPW}	$f_{HO}=15.75\text{KHz}$ $SW_B=2$	23	25	27	us	2
Horizontal Output Current	I_9	$SW_B=2$	0.8	1.3	2.0	mA	2

TEST CIRCUIT

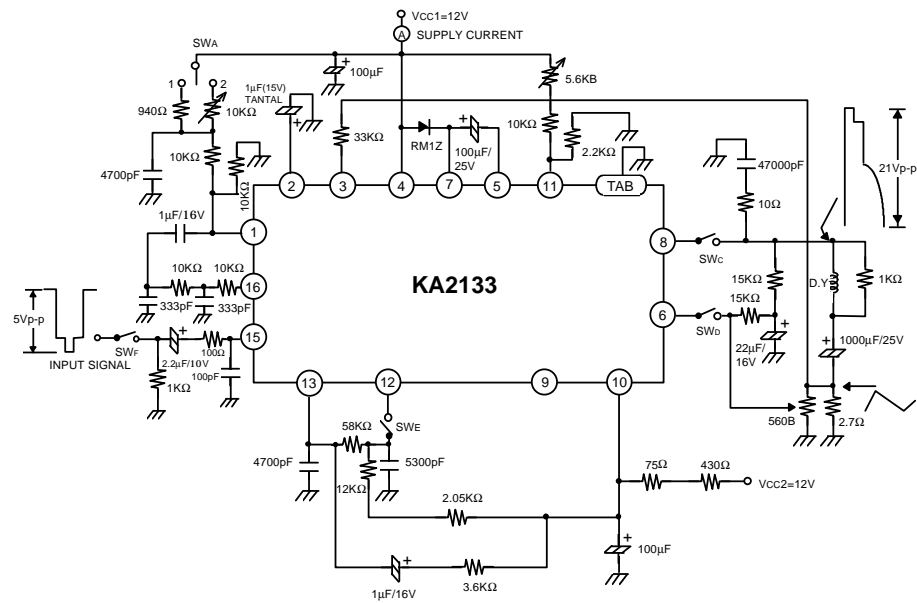


Fig. 2