



LA7837, 7838

Vertical Deflection Circuit with TV/CRT Display Drive

Overview

The LA7837, 7838 are vertical deflection output ICs developed for use in high-grade TVs and displays. The interlace and crossover distortion responses, in particular, have been greatly improved, allowing excellent picture quality on large size televisions and high precision interlace mode displays.

Also, pulse signals can be used for input signals due to the on-chip sawtooth wave generating circuit and driver circuit. Further, the DC and AC feedback circuit can be formed with these ICs alone, simplifying pattern design of sets and ensuring stable performance. All of the functions in a color TV signal system can be processed by connecting these ICs with SANYO's single-chip IC LA7670 series (NTSC) and LA7680/85 series (PAL/NTSC) (VIF/SIF, video, chroma, deflection).

The LA7837 has a maximum deflection current of 1.8Ap-p, making it appropriate for use in portable to mid-size televisions.

The LA7838 has a maximum deflection current of 2.2Ap-p, so it can be used for large size sets, and can drive from 33 to 37 inches.

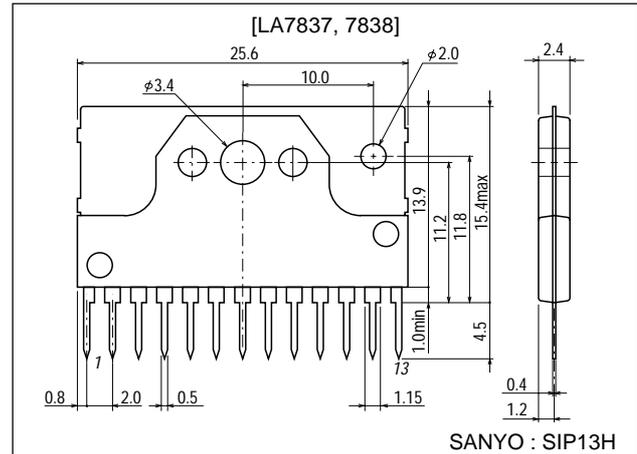
Features

- Low power dissipation due to on-chip pump-up circuit.
- On-chip 50/60Hz vertical size control circuit.
- On-chip sawtooth wave generating circuit.
- On-chip driver circuit.
- Vertical output circuit.
- On-chip thermal protection circuit.
- Excellent interlace response.
- Excellent crossover response.

Package Dimensions

unit:mm

3107-SIP13H



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Specifications

Maximum Ratings at $T_a = 25^\circ\text{C}$

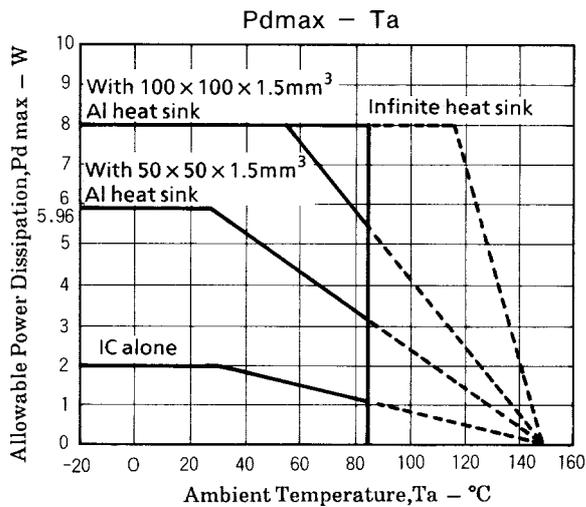
Parameter	Symbol	Conditions	Ratings	Unit
Driver supply voltage	$+V_{CC1}$ max		15	V
Pump-up supply voltage	$+V_{CC8}$ max		30	V
Output supply voltage	$+V_{CC13}$ max		62	V
Deflection output current	I_{DEF}		-1.5 to +1.5	Ap-o
Thermal resistance	θ_{j-c}		4	$^\circ\text{C/W}$
Allowable power dissipation	P_d max	With infinite heat sink	8	W
Operating temperature	T_{opr}		-20 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +150	$^\circ\text{C}$

Operating Conditions at $T_a = 25^\circ\text{C}$, parenthesis () indicates LA7838.

Parameter	Symbol	Conditions	Ratings	Unit
Recommended driver supply voltage	$+V_{CC1}$		12	V
Operating driver supply voltage	$+V_{CC1}$		8 to 14	V
Recommended pump-up supply voltage	$+V_{CC8}$		24	V
Operating pump-up supply voltage	$+V_{CC8}$		10 to 27	V
Deflection output current	I_{12p-p}		up to 1.8 (2.2)	Ap-p
Operating ramp waveform pulse height	V_{6p-p}		up to $\{(B1/3)-1.0\}$	Vp-p

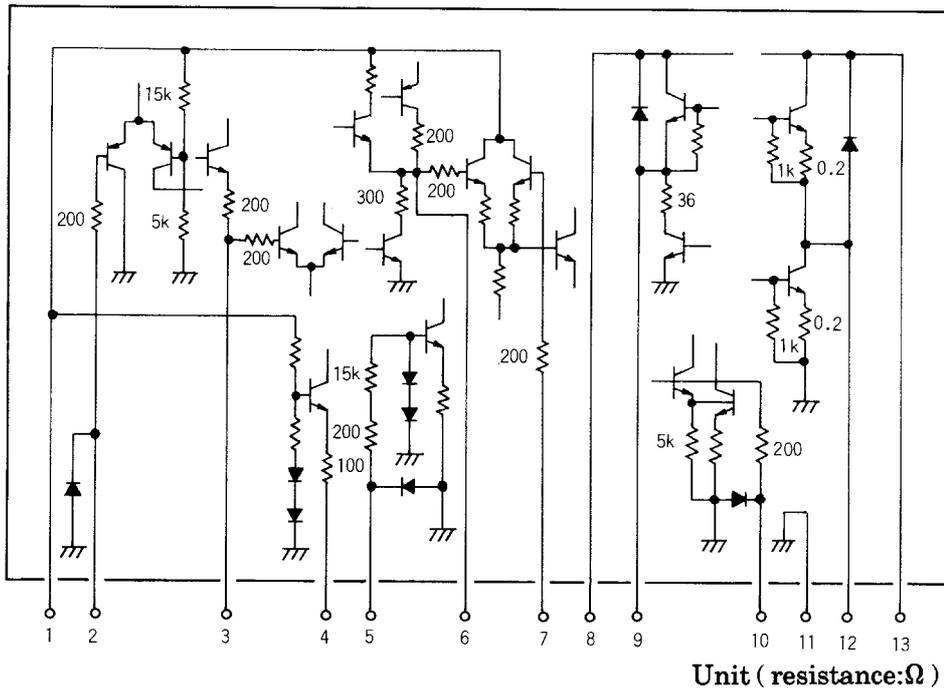
Operating Characteristics at $T_a = 25^\circ\text{C}$, $+V_{CC1}=12\text{V}$, $+V_{CC8}=24\text{V}$, parenthesis () indicate LA7838.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Driver supply current	I_{CC1}		5.6	6.7	7.8	mA
Trigger input threshold voltage	V_2		2.6	2.9	3.2	V
Vertical amplitude control pin voltage	V_4		5.9	6.1	6.3	V
Ramp waveform Generation start voltage	V_{RAMP}		4.6	4.9	5.2	V
Pump-up charge saturation voltage	V_{s9-11}	$I_9=20\text{mA}$			1.8	V
Pump-up discharge saturation voltage	V_{s8-9}	$I_9=0.9\text{A}$			3.0	V
		$(I_9=1.1\text{A})$			(3.2)	V
Deflection output saturation voltage (lower)	V_{s12-11}	$I_{12}=0.9\text{A}$			1.2	V
		$(I_{12}=1.1\text{A})$			(1.5)	V
Deflection output saturation voltage (upper)	V_{s13-12}	$I_{12}=0.9\text{A}$			3.2	V
		$(I_{12}=1.1\text{A})$			(3.5)	V
Idling current	I_{DL}		35		65	mA
Voltage gain				59		dB



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LA7837, 7838 Interface Circuit



LA7837, 7838 Pin Connection Diagram and Block Diagram

