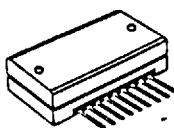


SANYO**VPA13**

FBET Hybrid IC
Video Pack (VPA Series)
Video Output Amplifiers for
High-Resolution CRT Displays

Overview

The VPA13 is Video Output Amplifier for a High-Resolution Monochrome or RGB CRT Display integrates a complete amplifier using high-precision FBET and LSBT transistor chips into a single IC, allowing high-output voltage wide-bandwidth video output amplifier circuits to be implemented with greatly reduced parts count.

The result is that cost reduction and saving board space can be realized. VPA13's 9-pin metal SIP package also minimizes EMI problems and simplifies circuit board design.

The 130MHz bandwidth makes the VPA13 ideally suited for use with 64~75kHz line frequency monitors. A supply voltage of 90V is typical.

The VPA13 is one of the devices in a series of Sanyo's IC that cover the complete range of video output amplifier applications - - from high-end CAD/CAM monitors, desk top publishing monitors to externally high-resolution graphics displays. Evaluation samples are available now.

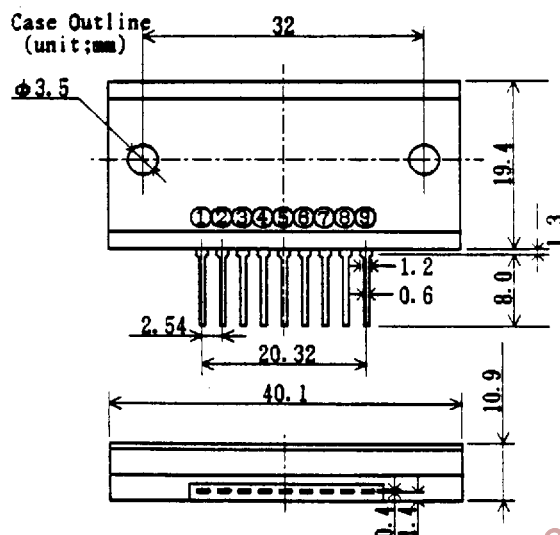
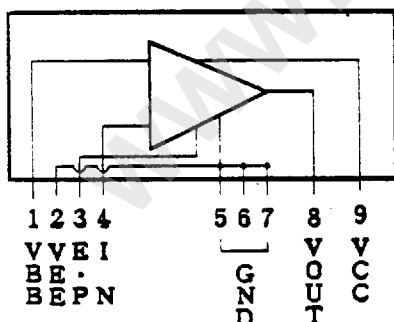
For others 64KHz line frequency monitor applications, refer to the VPA10/VPA12 (fV=100~120MHz bandwidth) Video Output Amplifier System data sheets.

Features

- High performance
- Up to 45Vp-p output voltage (VPA12 high swing version.)
- 130MHz typical bandwidth
- Simplifies circuit design
- Compact package
- Metal casing reduces EMI

Absolute Maximum Ratings at Ta=25°C

		unit
Maximum Supply Voltage	VCC	120 V
	VBB	15 V
Allowable Power Dissipation	PD (Ta=25°C)	3.5 W
	PD (Tc=25°C)	20 W
Junction Temperature	TJ	150 °C
Operating Temperature	Ta(op)	85 °C
Storage Temperature	Tstg	-20 to 110 °C

Connection and Outline

Specifications and information herein are subject to change without notice.

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VPA13(Video Pack)

Recommended Operating Conditions at $T_a=25^\circ\text{C}$

Condition			unit	
Condition 1	VCC	Vout -45Vp-p	90	V
	VBB	Vin(DC)=3.5V	10	V
Condition 2	VCC	Vout -50Vp-p	100	V
	VBB	Vin(DC)=3.8V	10	V

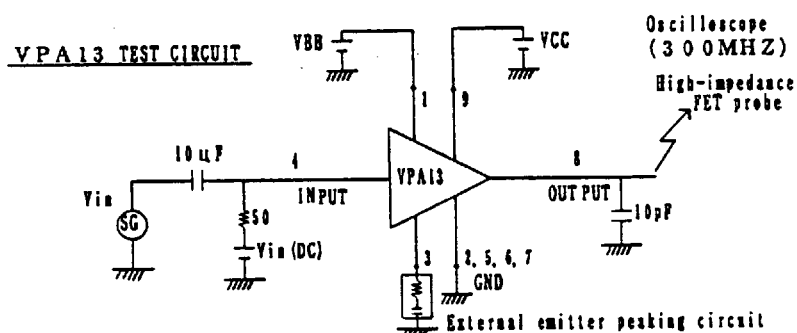
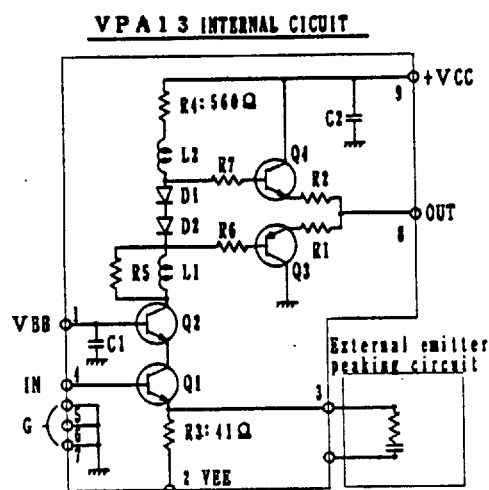
Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Frequency Bandwidth	fc(-3dB)	Condition 1	Vout=45Vp-p	130	135	MHz
		Condition 2	Vout=50Vp-p	120	130	MHz
Voltage Gain	VG(DC)		12	14	16	times
Current Dissipation	ICC(1)	Condition 1	f=10 MHz clock	88		mA
	ICC(2)	Condition 1	f=130MHz clock	133		mA
	ICC(3)	Condition 2	f=10 MHz clock	98		mA
	ICC(4)	Condition 2	f=130MHz clock	149		mA
Rise Time	Tr	Condition 2	10% to 90%	3.9		nS
Fall Time	Tf	Condition 2	10% to 90%	3.0		nS

(Note) Under Test Board Condition

- ☐ Emitter peaking: $R_e = 27\Omega$, $C_e = 100\text{PF}$, $C_e' = 20\text{PF}$
☐ Capacitive Load: 10PF

Equivalent Circuit



Precautions

- 1) Do not short the pins, or degradation may occur.
- 2) On heat sink design and test board condition, refer to the technical document "Sanyo Video Pack".
- 3) Case is connected to the internal GND.
- 4) The mounting torque should be in the range of 4 to 6Kg·cm

