

<b>SANYO</b>	No.2786A	<b>VPA12</b>
		FBET Hybrid IC Video Pack Series <b>High-Precision CRT Display Video                  Output Amplifier</b>

**Overview**

The VPA12 High-Precision CRT Display Video Output Amplifier integrates a complete amplifier using high-precision FBET and LSBT transistor chips into a single compact hybrid IC, allowing high-output voltage, wide-bandwidth video output amplifier circuits to be implemented with greatly reduced parts count. The result is both savings in board space and cost. The VPA12's 9-pin metal SIP package also minimizes EMI problems and simplifies circuit board design.

The 120MHz bandwidth makes the VPA12 ideally suited for use in 64kHz line frequency monitors. A supply voltage of 70V is typical.

The VPA12 is one device in a series of Sanyo ICs that cover the complete range of video output amplifier applications - - from low-cost PC monitors through to externally high resolution graphics displays. Evaluation samples are available now.

**Features**

- High performance
- Up-to-75V output voltage
- 120MHz typical bandwidth
- Simplifies circuit design
- Compact package
- Metal casing reduces EMI

**Absolute Maximum Ratings at Ta = 25°C**

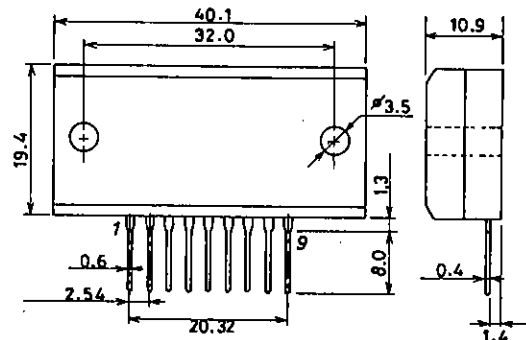
Maximum Supply Voltage	V <sub>CC</sub> max		80	V
	V <sub>BB</sub> max		15	V
Allowable Power Dissipation	Pd		3.5	W
	Pd	T <sub>c</sub> = 25°C	20	W
Operating Case Temperature	T <sub>c</sub>		- 10 to + 100	°C
Storage Temperature	T <sub>stg</sub>		- 20 to + 110	°C

**Recommended Operating Conditions at Ta = 25°C**

Supply Voltage	V <sub>CC</sub>		70	V
	V <sub>BB</sub>		12	V

**Package Dimensions**

(unit: mm) 2060



## VPA12

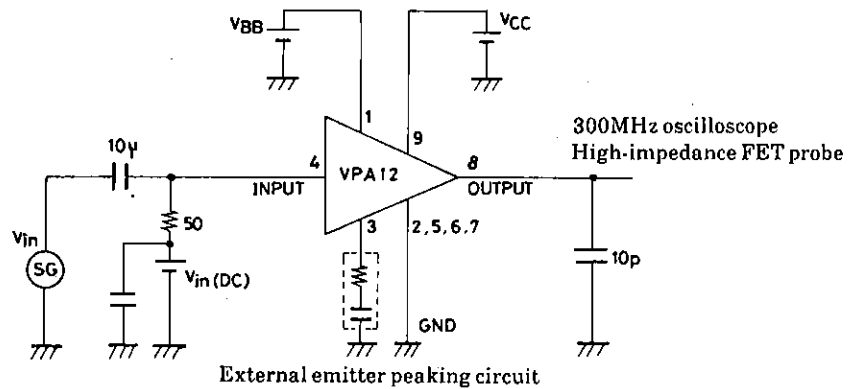
### Electrical Characteristics at $T_a = 25^\circ\text{C}$

			min	typ	max	unit
Maximum Frequency	$f_{\text{max}}$	$V_{\text{CC}} = 70\text{V}, V_{\text{BB}} = 12\text{V},$ $V_{\text{in}}(\text{DC}) = 2.7\text{V}, V_{\text{out}}(\text{p-p}) = 40\text{V}$		120	160	MHz
Voltage Gain	$V_{\text{G}}(\text{DC})$	$V_{\text{CC}} = 70\text{V}, V_{\text{BB}} = 12\text{V}, V_{\text{in}}(\text{DC}) = 2.7\text{V}$		14		times
Supply Voltage	$V_{\text{CC}}$			70	80	V
	$V_{\text{BB}}$		5	12	15	V
Current Dissipation (DC)	$I_{\text{CC}}$	$V_{\text{CC}} = 70\text{V}, V_{\text{BB}} = 12\text{V}, V_{\text{in}}(\text{DC}) = 2.7\text{V}$		50		mA
Input Voltage	$V_{\text{IN}}$				5	V
Input Current	$I_{\text{IN}}$				5	mA
Average Power Dissipation	$P_{\text{d}}(\text{ave})$			3		W
Peak Power Dissipation	$P_{\text{d}}(\text{max})$			5		W

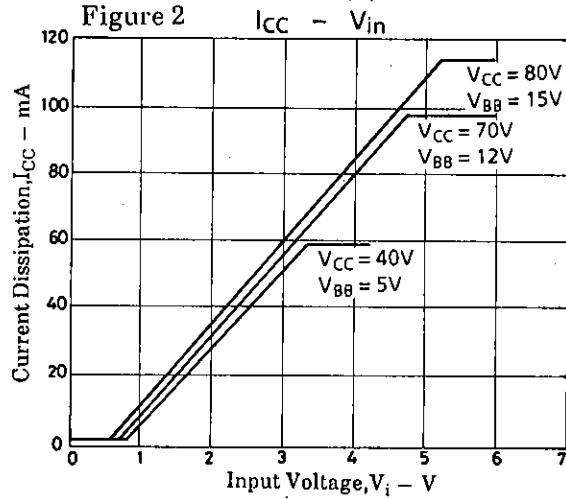
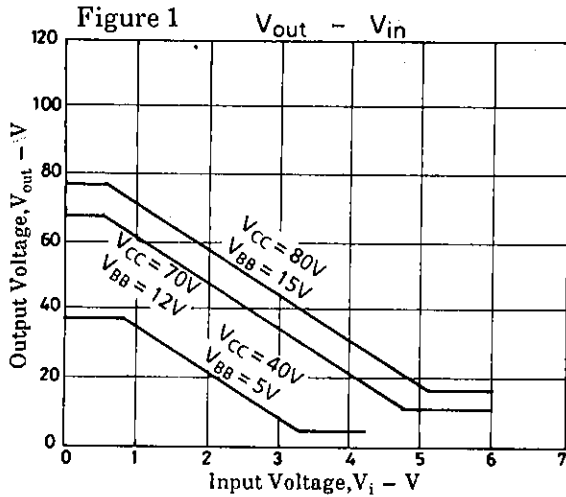
(Note) Emitter peaking : Optimum value

### Equivalent Circuit

### Test Circuit

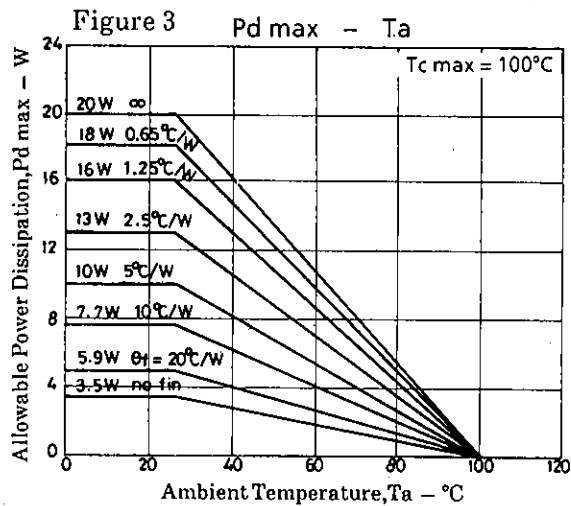


Unit (resistance:  $\Omega$ , capacitance: F)



**Performance Characteristics**

Figures 1 and 2 show the output voltage and supply current vs. input voltage characteristics. Figure 3 shows the allowed power dissipation for different heat sinks. Note that the device is connected internally to ground (pins 2, 5, 6, 7). A torque of 4 to 6kg/cm<sup>2</sup> should be used to fasten the case to a heat sink.



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