

High performance guaranteed: Reduction of turnaround time and EMI-free systems

# Video Packs

Hybrid intergrated circuits/with FBET/LSBT process chips/Wide bandwidth video output ICs

Year by year, there is an ever-increasing for higher-resolution CRT displays and a corresponding demand for wider bandwidth video output circuits for these displays.

Up till now, however, it has been difficult to design these circuits efficiently because component technology peculiar to designing high frequency circuits has been unavailable.

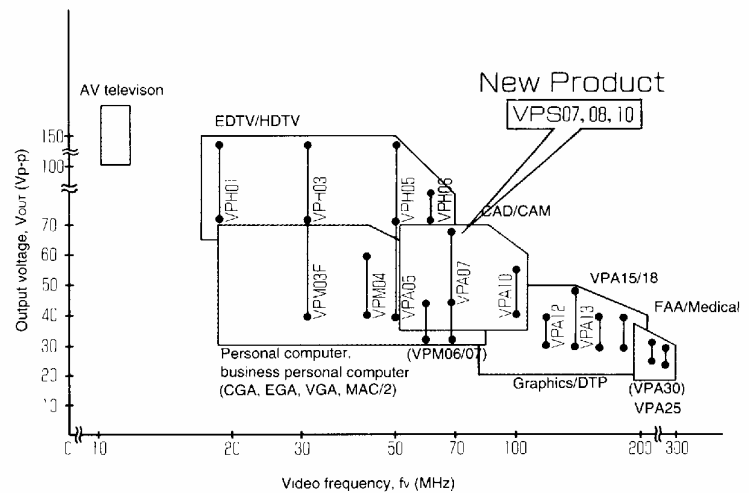
Sanyo has solved this problem with the introduction of the VPA series "Video Pack products." VPA series products comprise bare-chip video output transistors, developed using Sanyo's FBET/LSBT process technology, and feature bandwidths up to 180 MHz.

Recently, there has been an increasing demand in audiovisual systems for larger screens with higher resolution. These all require large amplitude characteristics over a wide frequency bandwidth.

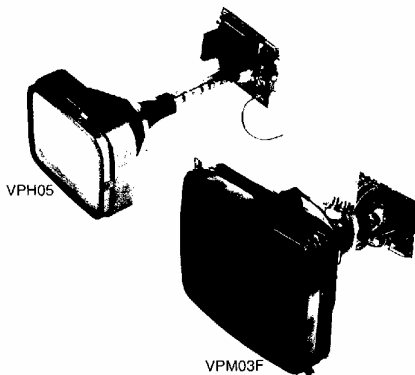
Sanyo has developed high output products (VPH series) to meet these needs in applications from AV television to high-vision. We have also added another series of products to our product line-up which feature high-density mounting for use in personal computer displays. These products, the "VPM series with heatsink", have three high-output channels per pack.

The Sanyo product line-up reduces turnaround time and ensures good repeatability.

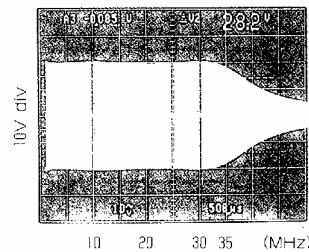
## Video Pack application map



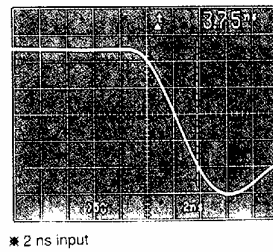
### Video Pack mounting example



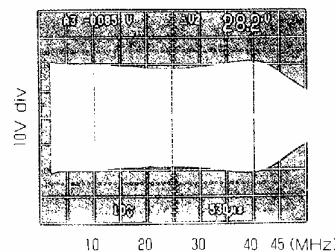
VPM03/03F (Ch. 1)  
Sweep output waveform



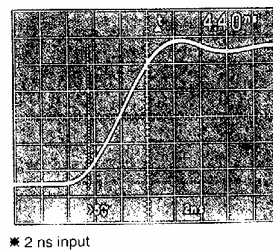
VPA12  
Output pulse response ( $t_f$ )

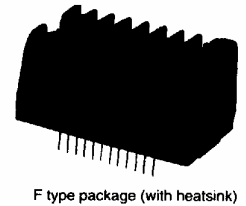
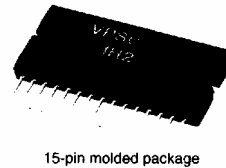
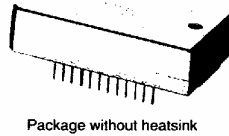
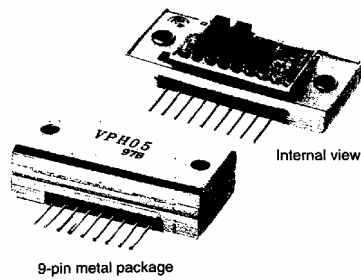


VPM04/04F (Ch. 1)  
Sweep output waveform



VPA12  
Output pulse response ( $t_r$ )





● Recommended Video Pack line-up for CRT displays

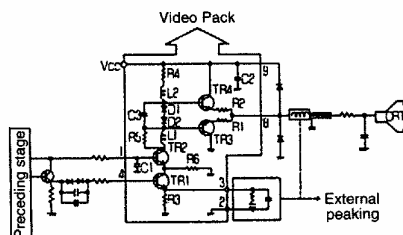
\* Under development

Application field (horizontal deflection frequency)	Type No.	Maximum supply voltage V <sub>cc</sub> max (V)	Video frequency			Gain (D·C)	No. of channels	Package type
			f <sub>v</sub> (typ -3dB)					
			(MHz)	V <sub>out</sub> (V <sub>p-p</sub> )	V <sub>cc</sub> (V)			
Personal computers	VPM03	160	30	60	100	26	F: Heatsink provided No indicator: Without heatsink	
	VPM03F	120	30	50	90	26		
Business computers (up to 48 kHz)	VPM04	120	45	50	90	19		
	VPM04F	120	45	40	80	19		
	VPM05	120	50	40	80	19		
CAD/CAM (48 to 56 kHz)	VPM06	120	60	40	80	19		15-pin molded package
	VPM07	120	70	40	90	19		
	VPS07	120	70	50	90	22		
	VPS08	120	80	50	90	20		
	9-pin metal package	VPA05	120	50	60	100		29
		VPA07	120	70	50	90	29	
Graphics DTP (64 to 85 kHz)	VPS10	120	100	50	90	20	3	15-pin molded package
	VPA10	100	100	45	100	14	1	9-pin metal package
	VPA12	90	120	40	80	14		
	VPA13	120	130	45	80	14		
VPA15	90	150	40	80	14			
FAA Medical (up to 130 kHz)	VPA18	90	180	40	80	14	1	9-pin metal package
	VPA25	80	230	30	70	14		
	VPA30*	Being planned						

● Recommended Video Pack line-up for ED/HDTV applications

EDTV	VPH01	230	18	100	150	29	1	9-pin metal package
HDTV	VPH03	230	30	100	170	29		
	VPH05	230	50	100	170	29		
	VPH06	230	65	100	170	29		

● Video Pack circuit configuration



● Peripheral circuit for VPA series

