



Announcing VGA port Companion

CM2006 for Display Monitors





Overview

- What are we announcing?
- Product Key Features & Benefits
- Pricing & Availability



What are we announcing?

- Port protection ASIP™ for TVs and LCD monitors
 - VGA ports
 - DVI-I analog ports
- Integrated protection and signal integrity
 - Robust ESD protection
 - Backdrive protection
 - Sync signal buffering
 - DDC voltage level shifters
- Integrates 22 discrete components for best layout and lowest cost



CM2006 Key Features (1 of 2)

- Robust Protection:
 - 8KV/15KV (contact/air) ESD protection on all 7 lines (RGB inputs, DDC inputs, and SYNC inputs)
 - Integrated zener diode for improved clamping voltage and better ESD performance
 - Backdrive protection on all lines
- Low capacitance diodes optimized for video signal integrity
 - Low capacitance: 3pF diodes for minimized signal attenuation

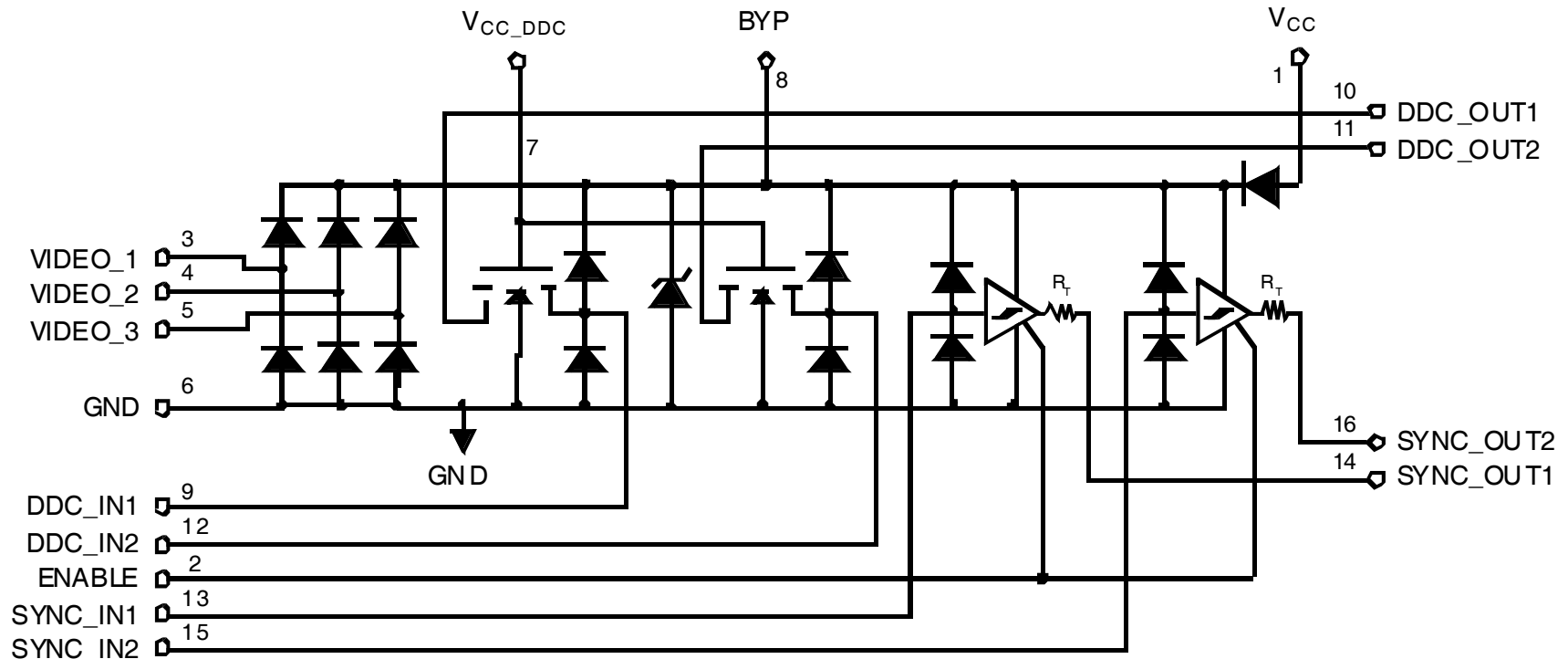


CM2006 Key Features (2 of 2)

- Schmitt-triggered non-inverting buffers on HSYNC and VSYNC lines
 - Accept VESA VSIS compliant TTL input signals and convert them to CMOS output levels
 - Schmitt-trigger provides fast ramp on signal to ensure good synchronization between video source and TV/monitor
- Bi-directional level shifting N-Channel FETs for DDC clock and data lines
 - Provide the level shifting function required when the DDC controller or EDID EEPROM is operated at a lower supply voltage than the monitor
- Small 16-pin QSOP package

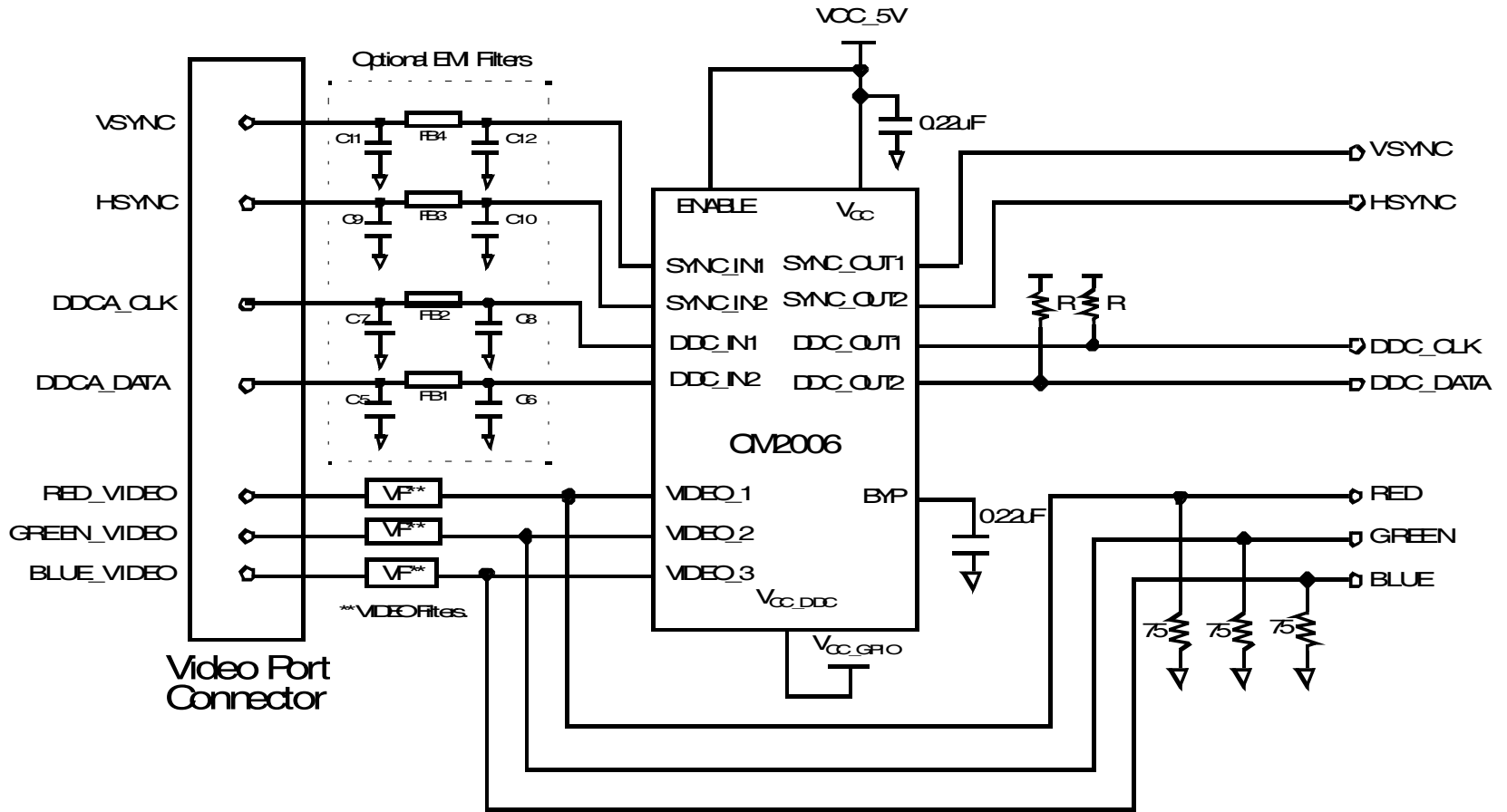


Internal Circuitry of Display-side VGA ASIP CM2006





Simple Layout





CM2006 Advantages

- Improved overall performance
- 55% space savings
- Lower cost

Discrete vs. CM2006 - Cost & Board Space Estimation								
	QTY	P/N	Package	Size (mm)	Total size (m ²)	CM2006 (QSOP -16)	Discrete Price	CM2006
							1K	1K
Dual N-channel MOSFET use for 2 level shifters	1	Fairchild NDC7002N	SOT-6	3 x 2	6		0.188	
Blocking Diode for backdrive protection	1	OnSemi DAP222	SC-75	1.75 x 1.8	3.15		0.04	
Zener Diode (3.3V, 1W)	1	Fairchild 1N4728A	DO-41	3.9x1.8	7.02		0.031	
IC Buffer Dual Schmitt Trigger	1	TI SN74LVC2G17D BVR	SOT23-6	2.9 x 2.8	8.12		0.11	
ESD rated 8kV Protection Diode to protect 7 lines	1	CMD CM1213-08MR	MSOP-10L	3.1 x 5	15.5		0.55	
Estimated extra spacing between discrete components and routing					6			
Size (mm)						4.9 x 6		
Total	5				45.79	29.4	0.92	0.60



Pricing and Availability

- CM2006 is currently sampling
- Production in Q1 CY2006
- CM2006 is \$0.60 at 1KU



Summary of CM2006 Benefits

CM2006 Features	Key Benefits
8 KV contact ESD protection	Robust Level 4 ESD protection
Schmitt-Triggered input buffers	Provided fast ramp-up signal on HSYNS and VSYNC lines to avoid any signal distortion
Backdrive protection on all lines	Built-in protection against damage from incorrect connections and backdrive when device is powered down
Built-in level shifting circuits	Eliminates external components
Single-chip solution (16 pin QSOP)	30% layout savings vs. discrete components

Best performance, best signal integrity, highest integration!



Other VGA Family Members

VGA Family:	Application	ESD Channels	SYNC Buffers	SYNC series resistors	DDC level shifting & back drive	75 Ohm termination	ESD for external EMI filter	pull-up resistors	Package
CM2006	TV, Monitor	7	Schmitt-triggered	15 Ohm	Yes	-	-	-	QSOP-16
PACVGA105	PC, STB	7	Yes	65 Ohm	-	-	-	Yes	QSOP-16
PACVGA201	PC, STB	7	Yes	65 Ohm	-	-	Yes	-	QSOP-16
CM2009-00	PC, STB	7	Yes	65 Ohm	Yes	-	-	-	QSOP-16
CM2009-01	PC, STB	7	Yes	55 Ohm	Yes	-	-	-	QSOP-16
CM2009-02	PC, STB	7	Yes	15 Ohm	Yes	-	-	-	QSOP-16
PACVGA200	PC, STB	7	Yes	65 Ohm	Yes	Yes	Yes	-	QSOP-24
PACVGA203	PC, STB	7	Yes	15 Ohm	Yes	Yes	Yes	-	QSOP-24