



INV35MQ-SA1

Video Board

Features

- Used for TFT-LCD Display: 3.5" AND-TFT-35DM
- Accepts NTSC or PAL composite video input
- Requires only +12VDC input
- Includes inverter for CCFL backlight

The INV35MQ-SA1 is designed to work with the AND-TFT-35DM color TFT display. The INV35MQ-SA1 provides composite video decoding and DC voltages needed to power the display. It also includes an inverter circuit for the CCFL backlight of the display. It allows either NTSC or PAL video to be displayed.

Mechanical Characteristics

Item	Specification	Unit
Outline PCB Dimensions	3.35" (W) x 2.52" (H) x 0.71" (D)	mm

Absolute Maximum Rating

Item	Symbol	Conditions	Min.	Max.	Unit
Operating Temperature	Top	–	-10	60	°C
Storage Temperature	Tstg	–	-30	80	°C

Electrical Specification

Item	Symbol	Specifications			Units
		Min.	Typ.	Max.	
Input Voltage	V _{CC}	+10.8	+12.0	+13.2	V(DC)
Current Consumption	I _{CC}	–	300	350	mA
Output Voltage to CCFL (JB201)	V _{FL}	–	300	380	V _{rms}
Output Current to CCFL	I _{FL}	–	3.0	4.0	mA

Input Connector (DB15) - DDK 17LE-13150-28 (D74)

Pin No.	Symbol	Function
1	V _{DD}	+5V _D Output
2	COL	Color adjustment
3	BRI	Brightness adjustment
4	CNT	Contract adjustment
5	VIDEO	Composite video input
6	GND	Ground
7	GND	Ground
8	GND	Ground
9	V _{CC}	+12 VDC
10	V _{CC}	+12 VDC
11	NPC	NTSC/PAL Selection (NTSC=high, PAL=low)
12	GND	Ground
13	GND	Ground
14	GND	Ground
15	GND	Ground



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Interface Pin Assignment Output Connector (ELCO 6200-500-30-800)

Pin No.	Symbol	Function	Input/Output	Remark
1	V _{COM}	Common electrode voltage	Input	Should be adjusted accurately to get the best contrast ratio
2	V _{BBA}	Supply voltage for level shifter (low level)	Input	-5V (Typ.)
3	NC	No connection	—	
4	V _{BBC}	Supply voltage for panel	Input	-5V (Typ.)
5	V _{SS}	Ground for panel	Input	
6	V _{CC}	Supply voltage for level shifter (high level)	Input	+20V (Typ.)
7	V _{PIN}	Pulse high level for level shifter (high level)	Input	Must be more positive than V _{MIN} .
8	V _{MIN}	Pulse low level for level shifter (low level)	Input	Must be more positive than V _{MIN} .
9	FRP	Control signal for video inversion	Output	
10	V _{SY}	Vertical sync.	In/Out	
11	H _{SY}	Horizontal sync.	In/Out	
12	C _{SYNC}	Composite sync.	Input	
13	PD	Phase detector	Output	Output (0~5V range) from phase detector loop which is included in source driver
14	OSC	Clock input for LC oscillator	Input	Output (0~5V range) from phase detector loop which is included in source driver
15	V _{DD}	Supply voltage for logic circuit	Input	+5V (Typ.)
16	CKC	Control Pin for select I/O signal	Input	Pin 16 (CKC) can select the function for Pin 11 (H _{SY}) and Pin 10 (V _{SY}).
17	UD	Up/Down control	Input	Up/Down shift
18	LR	Left/Right shift control	Input	Left/Right shift
19	NP	NTSC/PAL selector	Input	Hi (+5V) for NTSC; Low (0V) for PAL
20	V _B	Video Input B	Input	
21	V _G	Video Input G	Input	
22	V _R	Video Input R	Input	
23	GND	Ground for high voltage logic	Input	
24	GND	Ground for logic	Input	
25	DV _{EE}	Voltage supply for source driver high logic	Input	Equal to +14V
26	C _{COM}	Reference for sample and hold	Input	+5V (Typ.)
27	AV _{EE}	Voltage supply for sample and hold	Input	Equal to +14V
28	GND	Ground	Input	
29	OV _{EE}	Voltage supply for operation amplifier	Input	Equal to +14V
30	VP+	Pre-charge high level	Input	Equal to +14V

Output Connector for CCFL Backlight (JST SM02 (8.0)B-BHS-1-TB)

Pin No.	Symbol	Function
1	V _{L1}	High Voltage (300 Vrms)
2	V _{L2}	Ground

Dimensional Outline

