



## 5 x 7 Dot Character x 20-Digit x 2-Line Display Controller/Driver with Character RAM

PT6301

### DESCRIPTION

The PT6301 is a 5 x 7 dot matrix type vacuum fluorescent display tube controller driver IC which displays characters, numerics and symbols of a maximum of 20 digits x 2 lines.

Dot matrix vacuum fluorescent display tube drive signals are generated by serial data sent from a micro-controller.

A display system is easily realized by internal ROM and RAM for character display.

PT6301 has low power consumption since it is made by CMOS process technology.

Custom codes are provided on customer's request.

### FEATURES

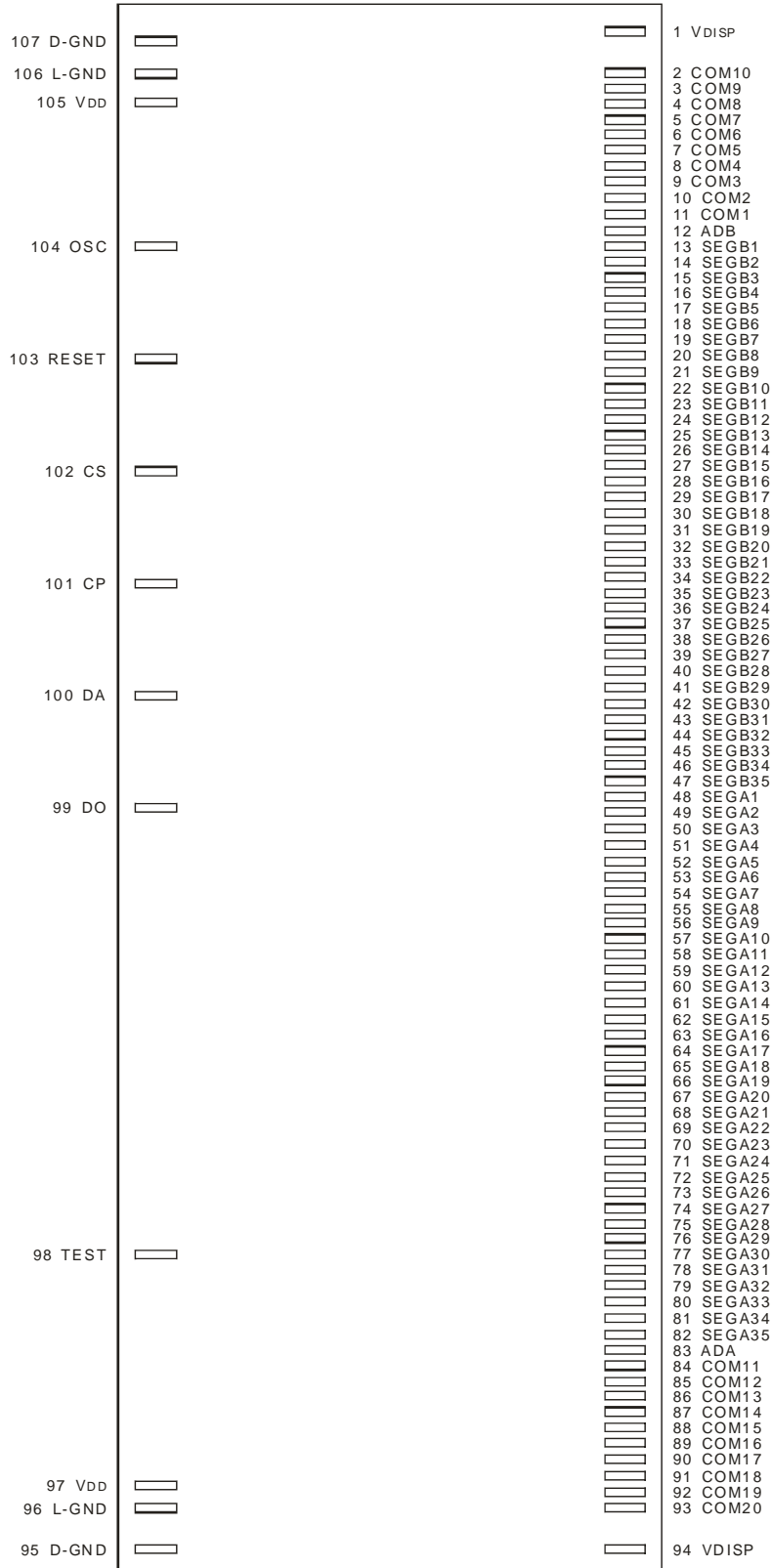
- Logic power supply ( $V_{DD}$ ): 3.3V±10% or 5.0V±10%
- VFD tube drive power supply ( $V_{DISP}$ ): 30 to 60V
- VFD driver output current  
(VFD driver output can be connected directly to the VFD tube. No pull-down resistor is required.)
  - Segment driver (SEGA1 to A35, SEGB1 to B35)  
Only one driver output is high: -5mA @  $V_{DISP}-4V$  ( $V_{DISP}=50V$ ,  $T_j=25^\circ C$ )  
All the driver outputs are high: -350mA @  $V_{DISP}-4V$  ( $V_{DISP}=50V$ ,  $T_j=25^\circ C$ )
  - Segment driver (ADA, ADB): -15mA @  $V_{DISP}-4V$  ( $V_{DISP}=50V$ ,  $T_j=25^\circ C$ )
  - Grid driver (COM1 to 20): -40mA @  $V_{DISP}-4V$  ( $V_{DISP}=50V$ ,  $T_j=25^\circ C$ )
- Content of display  
SEGA1 to SEGA35 and ADA
  - CGROM\_A 5 x 7 dots: 240 types (character data)
  - CGRAM\_A 5 x 7 dots: 16 types (character data)
  - ADRAM\_A 20 (display digit) x 1 bit (symbol data; can be used for a cursor.)
  - DCRAM\_A 20 (display digit) x 8 bits (register for character data display)SEGB1 to SEGB35 and ADB
  - CGROM\_B 5 x 7 dots: 240 types (character data)
  - CGRAM\_B 5 x 7 dots: 16 types (character data)
  - ADRAM\_B 20 (display digit) x 1 bit (symbol data; can be used for a cursor.)
  - DCRAM\_B 20 (display digit) x 8 bits (register for character data display)
- Display control function
  - Display digit: 1 to 20 digits
  - Display duty (brightness adjustment): 0/1024 to 960/1024 stages
  - All lights ON/OFF
- 4 interfaces with microcontroller : DA, CS, CP, and RESET
- Built-in oscillation circuit (external R & C)
- Standby function  
Inhibiting the oscillator circuit provides low power consumption.
- Built-in CIG testing circuit
- Available in CIG package type



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PIN CONFIGURATION

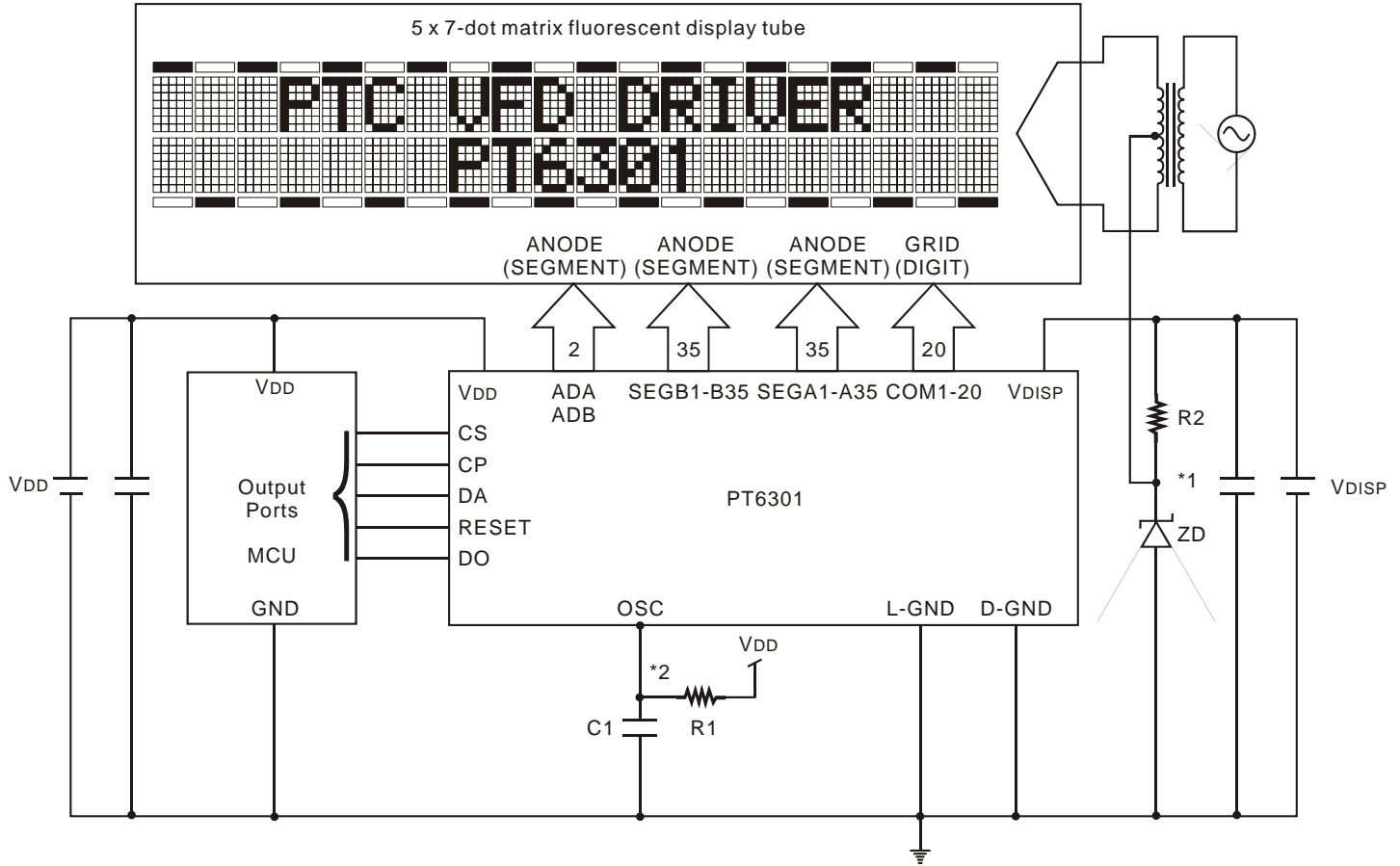




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APPLICATION CIRCUIT



Notes:

- \*1. The  $V_{DISP}$  voltage depends on the fluorescent display tube used. Adjust the value of the constants R2 and ZD to the  $V_{DISP}$  voltage used.
- \*2. The value of R1 & C1 depend on PT6301 IC chip Supply voltage of  $V_{DD}$  (R1=8.2K $\Omega$ , C1=39pF, when  $V_{DD}$ =5V; R1=6.2K $\Omega$ , C1=39pF, when  $V_{DD}$ =3.3V).



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## ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT6301	CIG	-