



DESCRIPTION

PT6324 is a Vacuum Fluorescent Display (VFD) Controller driven on a 1/8 to 1/16 duty factor housed in 52-pin plastic QFP/LQFP. 24 segment output lines, 16 grid output lines, one display memory, control circuit, key scan circuit are all incorporated into a single chip to build a highly reliable peripheral device for a single chip micro computer. Serial data is fed to PT6324 via a three-line serial interface.

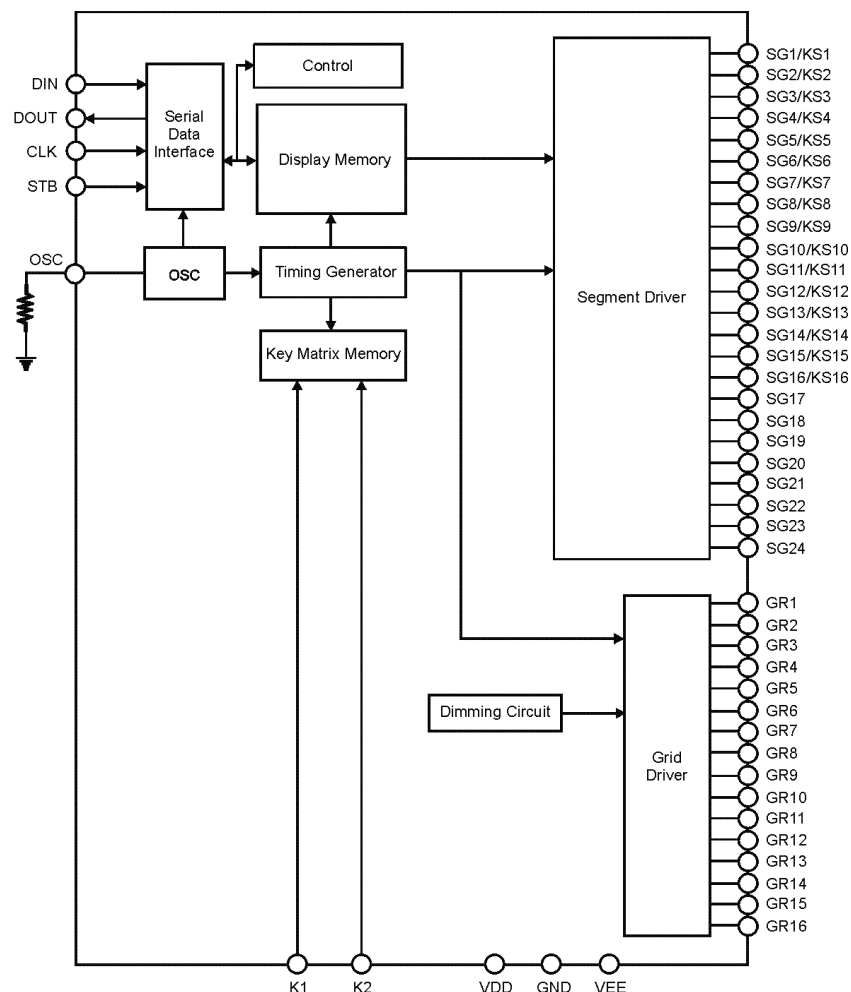
APPLICATIONS

- Microcomputer peripheral devices
- Digital Audio/Video system: CD/MD/VCD/DVD players
- Car audio
- VCR
- Electric scale meter
- P.O.S.
- Electronic equipment with instructional display

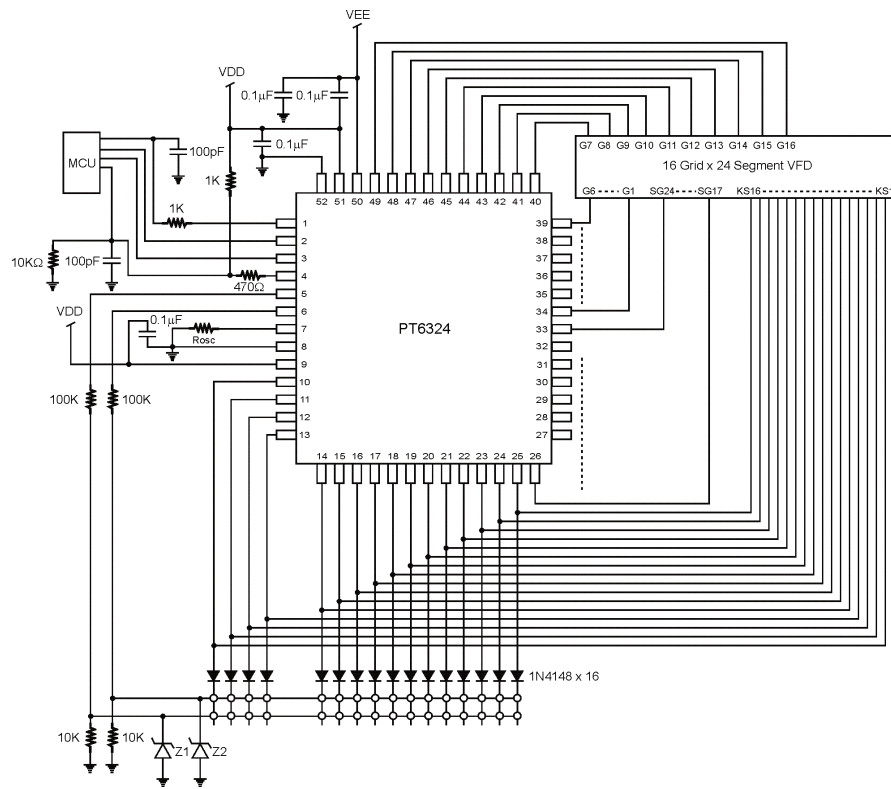
FEATURES

- CMOS technology
- Low power consumption
- Wide operating voltage $VDD=2.7V\sim5.5V$
- Key scanning (16 x 2 matrix)
- Display modes: (24 segments, 8 digits to 24 segments, 16 digits)
- 8-Step dimming circuitry
- Serial interface for Clock, Data Input, Data Output, Strobe pins
- No external resistors needed for driver outputs

BLOCK DIAGRAM

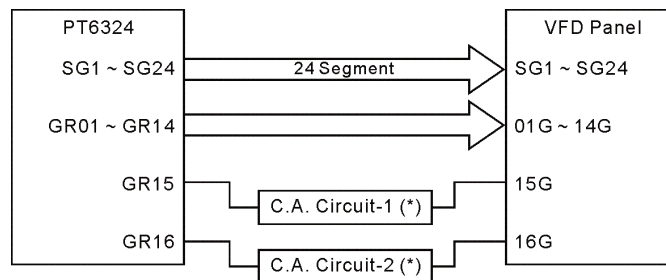


16-GRID X 24-SEGMENT VFD APPLICATION CIRCUIT



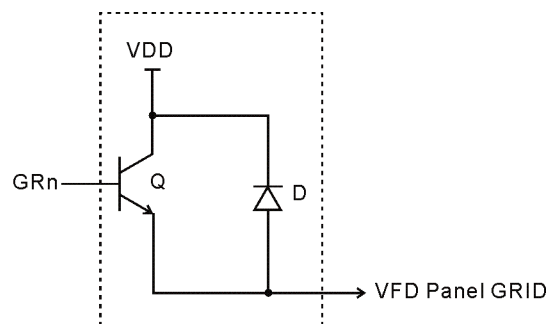
Notes:

1. The value of R_{osc} is depend on PT6324 IC chip supply voltage of V_{DD} ($R_{osc}=82K\Omega$, when $V_{DD}=5V$; $R_{osc}=100K\Omega$, when $V_{DD}=3.3V$).
2. Z1, Z2=Zener diode 5.1V
3. Please adding the current amplifying circuit as following figure when $I_{OHGR}>15mA$ on VFD panel for high brightness issue.



*=C.A. Circuit=Current amplifying circuit

C.A. Circuit-1 & C.A. Circuit-2 Ex.:



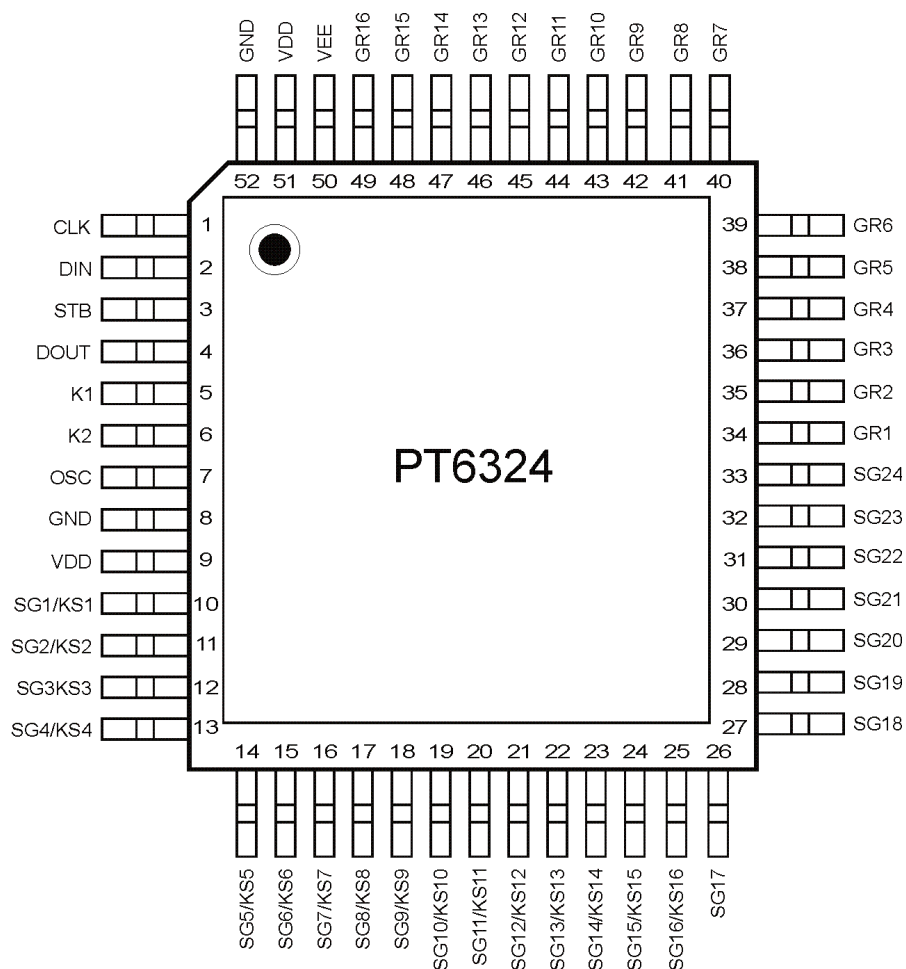
Parts recommended:

- Q=SAMSUNG-KSR1105 (General fast switching transistor)
- D=HITACHI-HSM221C (General fast recovery diode)

ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT6324-Q	52-Pin, QFP	PT6324-Q
PT6324-LQ	52-Pin, LQFP	PT6324-LQ

PIN CONFIGURATION





PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.
CLK	I	Clock input pin This pin reads serial data at the rising edge and outputs data at the falling edge.	1
DIN	I	Data input pin When this pin acts as input pin, serial data is inputted at the rising edge of the shift clock (starting from the lower bit)	2
STB	I	Serial interface strobe pin The data input after the STB has fallen is processed as a command. When this is "HIGH", CLK is ignored.	3
DOUT	O	Data output pin (N-channel, Open-drain) When this pin acts as output pin, serial data is outputted at the falling edge of the shift clock (starting from the lower bit)	4
K1 to K2	I	Key data input pins The data inputted to these pins is latched at the end of the display cycle.	5, 6
OSC	I	Oscillator input pin A resistor is connected to this pin to determine the oscillation frequency.	7
GND	-	Ground pin	8, 52
VDD	-	Logic power supply	9, 51
SG1/KS1 to SG16/KS16	O	High-voltage segment output pins Also acts as the key source	10 to 25
SG17 to SG24	O	High-voltage segment output pins	26 to 33
GR1 to GR16	O	High-voltage grid output pins	34 to 49
VEE	-	Pull-down level	50