

DESCRIPTION

PT16581 is an LCD Driver IC which can drive up to 124 segments. It can be used for frequency display in microprocessor-controlled radio receiver and in other display applications. PT16581 supports both 1/3 duty, and 1/4 duty drive. Pin assignment and application circuit are optimized for easy PCB layout and cost saving advantages.

FEATURES

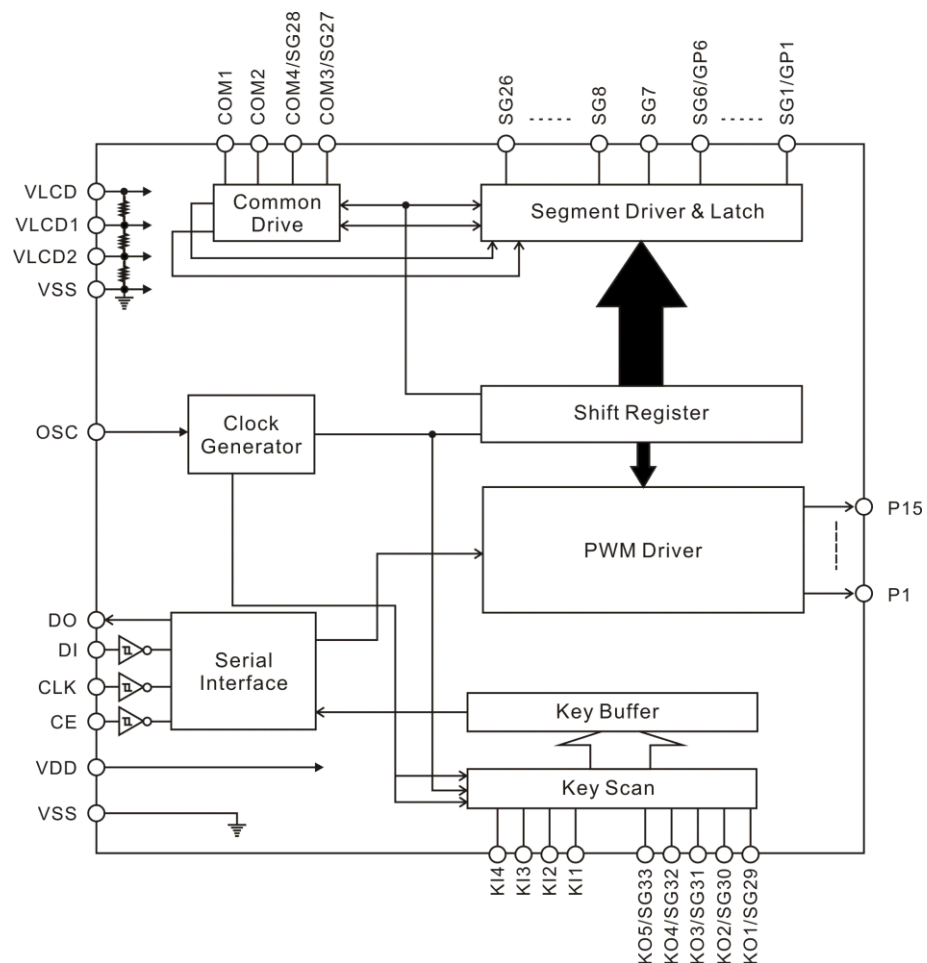
- CMOS technology
- Up to 66 segments for 1/2 duty - 96 segments for 1/3 duty - 124 segments for 1/4 duty drive can be displayed
- 1/2 duty - 1/2 Bias
- 1/3 duty - 1/2 Bias and 1/3 duty - 1/3 Bias drive techniques
- 1/4 duty - 1/2 Bias and 1/4 duty - 1/3 Bias drive techniques
- Power saving mode and all segments OFF function

- Direct display of display data without using a decoder
- RC oscillation circuit
- Power supply voltage: 4.5V to 6V
- CMOS/TTL compatible logic input pins
- LCD drive bias voltage can be provided internally or externally
- On-Chip voltage detection type reset circuit
- 15 programmable PWM signal output pins
- AEC-Q100 Grade1 Compliant for Automotive Applications
- Available in 64 pins LQFP

APPLICATION

- Electronic equipment with LCD display
- Car HVAC control panel

BLOCK DIAGRAM

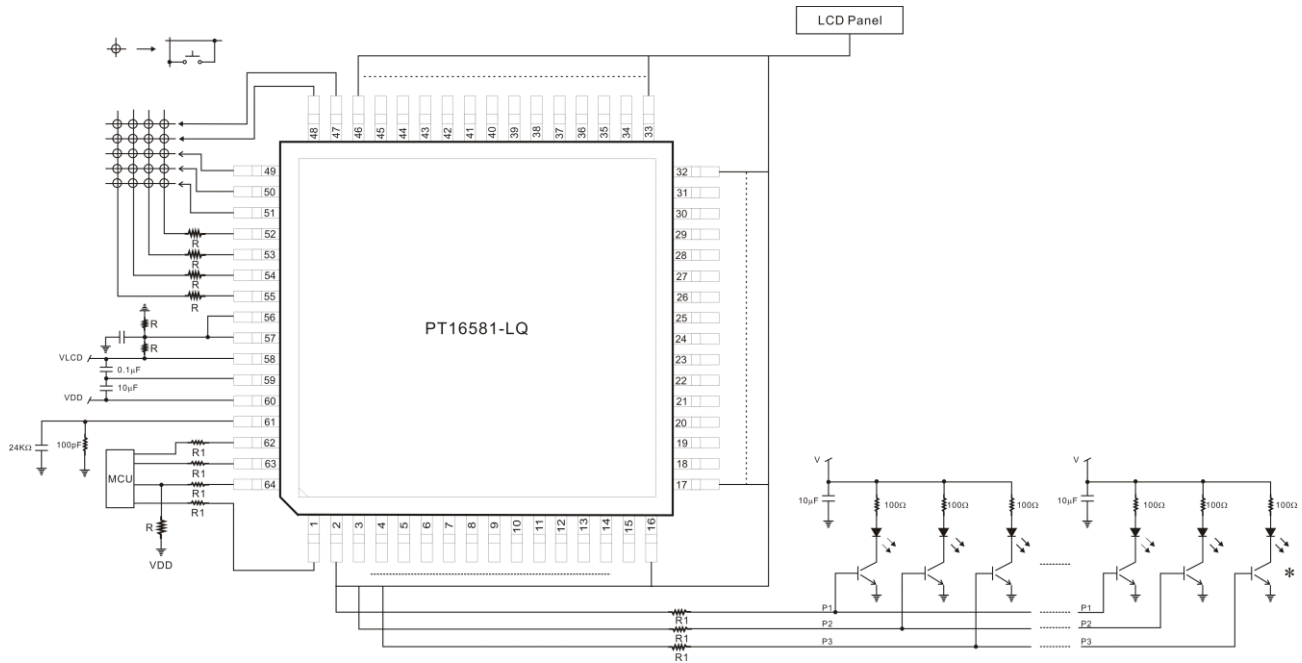


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1. APPLICATION CIRCUITS

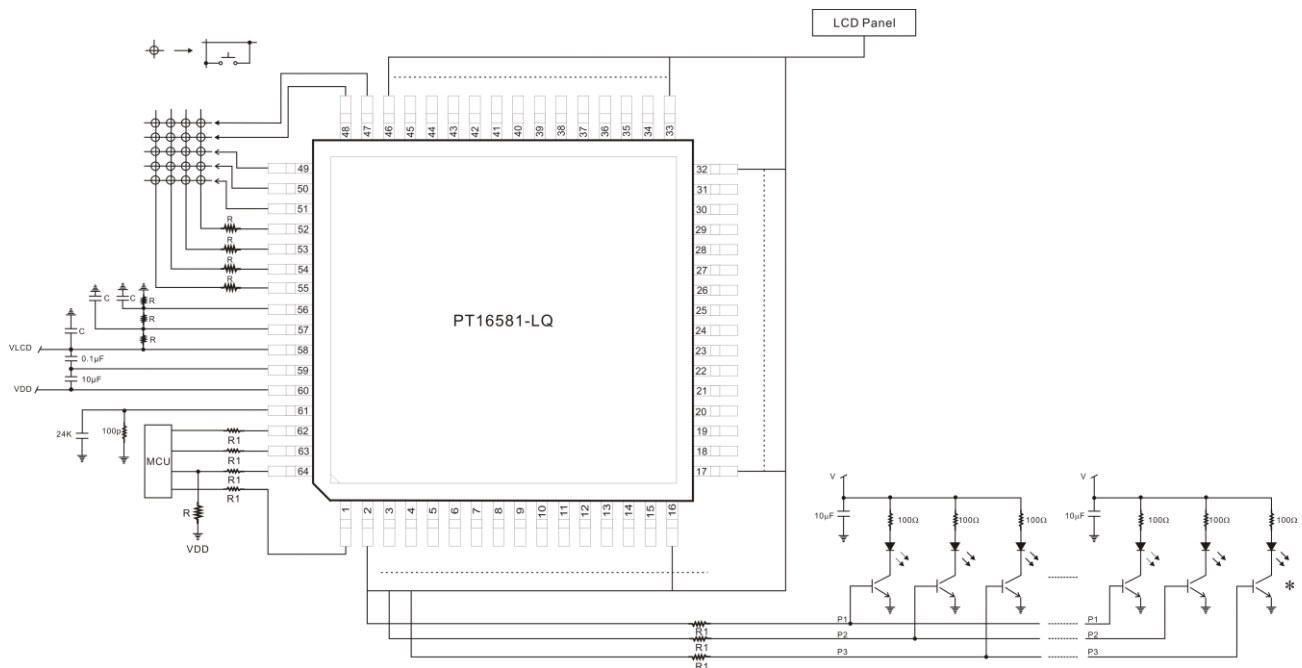
1/2 BIAS (FOR NORMAL PANEL)



Notes:

1. $10K\Omega \geq R \geq 1K\Omega$
2. *=Please select the suitable transistor
3. $1K\Omega \geq R1 \geq 100\Omega$

1/3 BIAS (FOR NORMAL PANELS)



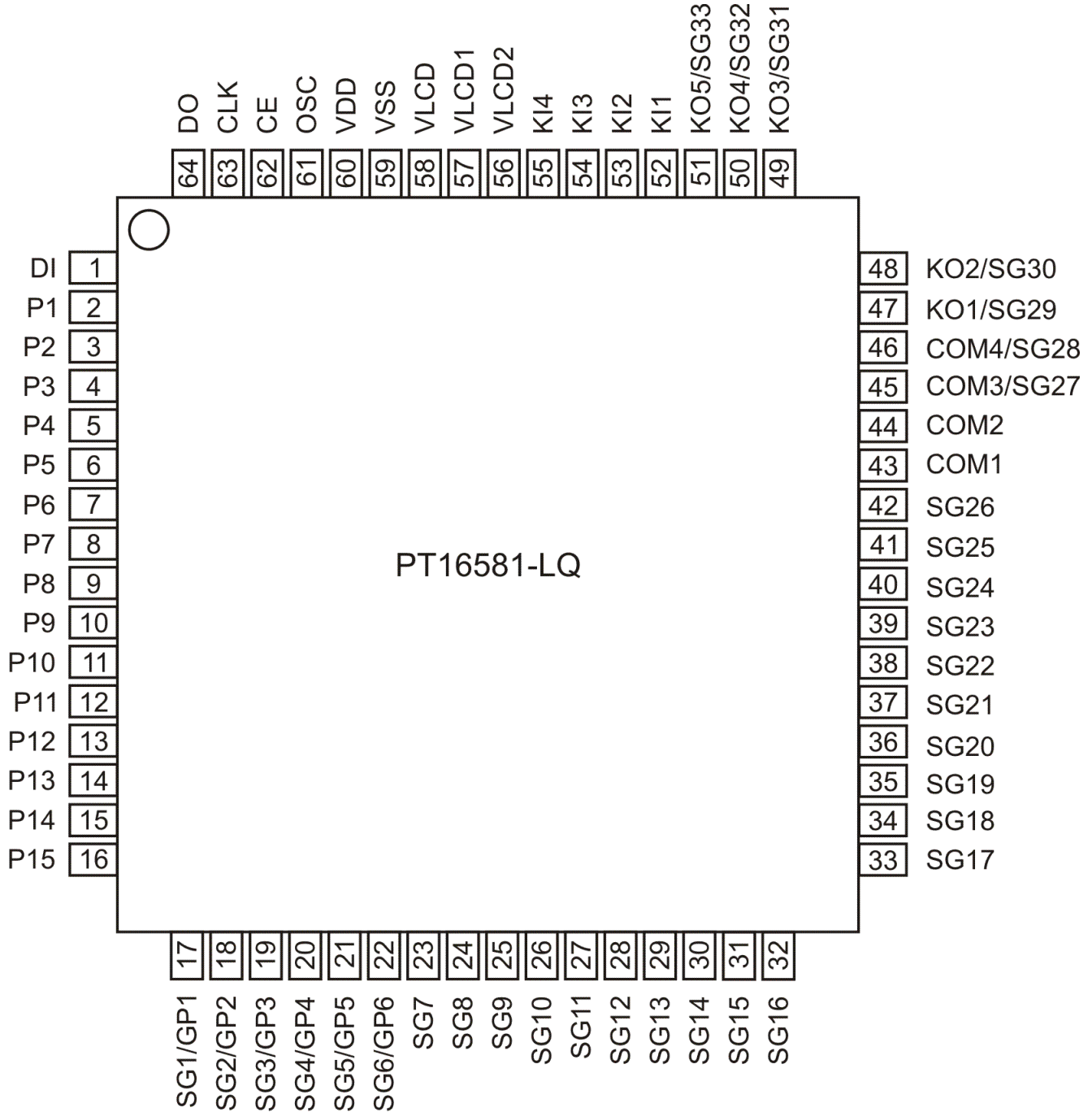
Notes:

1. $10K\Omega \geq R \geq 1K\Omega$
2. *=Please select the suitable transistor
3. $1K\Omega \geq R1 \geq 100\Omega$


2. ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT16581-LQ	64 Pins, LQFP	PT16581-LQ

3. PIN CONFIGURATION



4. PIN DESCRIPTION

Pin Name	I/O	Active	Description	Pin No.
DI	I	-	Transfer data pin	1
P1 ~ P15	O	H	PWM output pins	2 ~ 16
SG1/GP1 ~ SG6/GP6	O	-	Segment Output/General Purpose Output pins Under serial data control, these pins may be used as a General Purpose Output Ports.	17 ~ 22
SG7 ~ SG26	O	-	Segment output pin	23 ~ 42
COM3/SG27 COM4/SG28 COM2 ~ COM1	O	-	Common driver output pins The COM4/ SG28pin can be used as a segment output in 1/3 duty. The COM3/ SG27, COM4/ SG28pin can be used as a segment output in 1/2 duty.	43 ~ 46
KO1/SG29 ~ KO5/SG33	O	-	Key scan outputs Although normal key scan timing lines require diodes to be inserted in the timing lines to prevent shorts, since these outputs are unbalanced CMOS transistor outputs, these outputs will not be damaged by shorting when these outputs are used to form a key matrix. The KO1/SG29 and KO5/SG33 pins can be used as segment outputs when so specified by the control data	47 ~ 51
KI1 ~ KI4	I	H	Key scan inputs These pins have built-in pull-down resistors.	52 ~ 55
VLCD2	I	-	Used for the 1/3 Bias Voltage when the Bias Voltage is provided externally. Connect to VLCD1 when 1/2 Bias is used	56
VLCD1	I	-	Used for the 2/3 Bias Voltage when the Bias Voltage is provided externally. Connected to VLCD2 when 1/2 bias is used	57
VLCD			LCD driver block power supply connection. Provided a voltage of between VDD-0.5 and 6.0V.	58
VSS	-	-	Ground	59
VDD	-	-	Power supply Supply voltage in the range 4.5 to 6.0V	60
OSC	I/O	-	Oscillator input/output pin	61
CE	I	H	Chip enable pin	62
CLK	I		Synchronization clock pin	63
DO	O	-	Data output pin	64

IMPORTANT NOTICE

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