DESCRIPTION

The PT6951 is a compact LED driver for 90 single LEDs control. The device can be programmed via the I^2C or SPI compatible interface. Additionally each of the 90 LEDs can be dimmed individually with 8-bit allowing 256 steps of linear dimming. The high logic and low logic control threshold are specially designed for white goods and industry application.

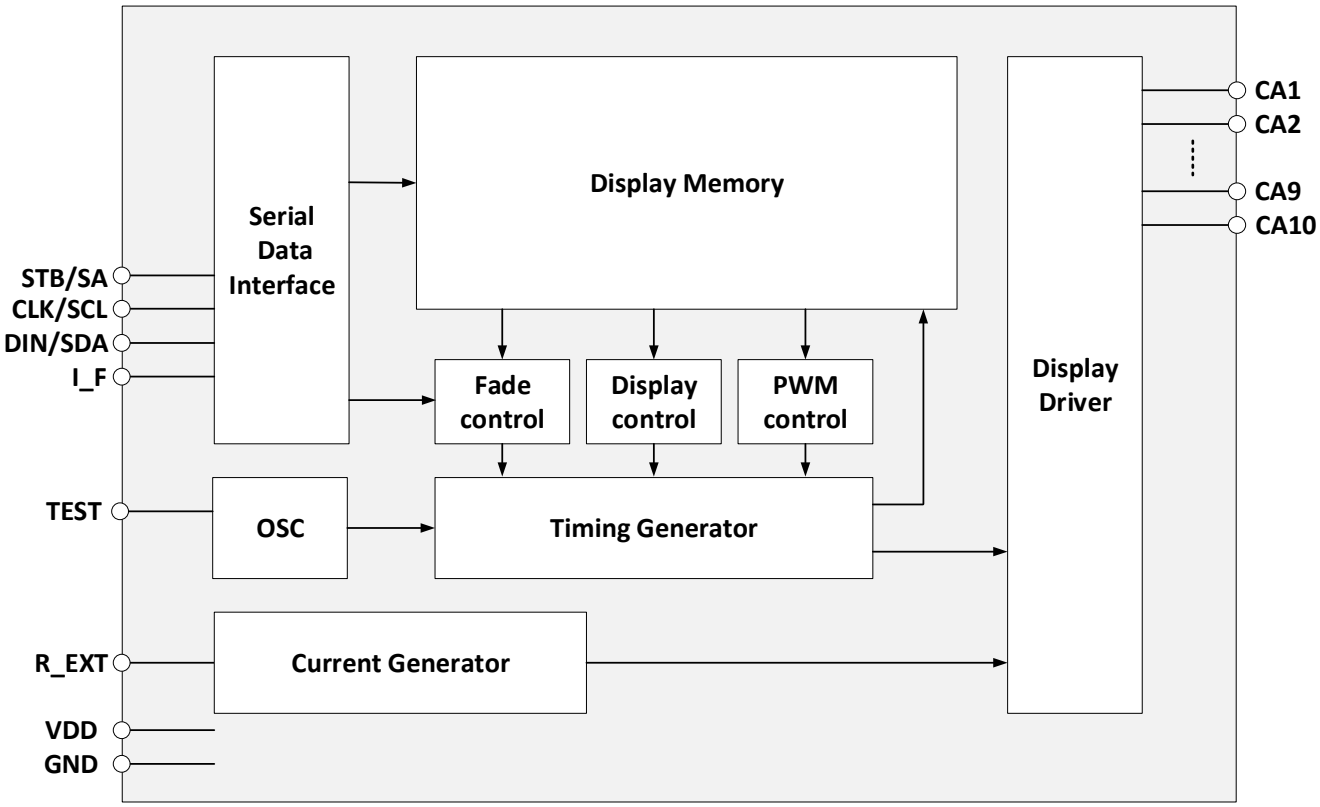
APPLICATIONS

- Micro-computer Peripheral Device

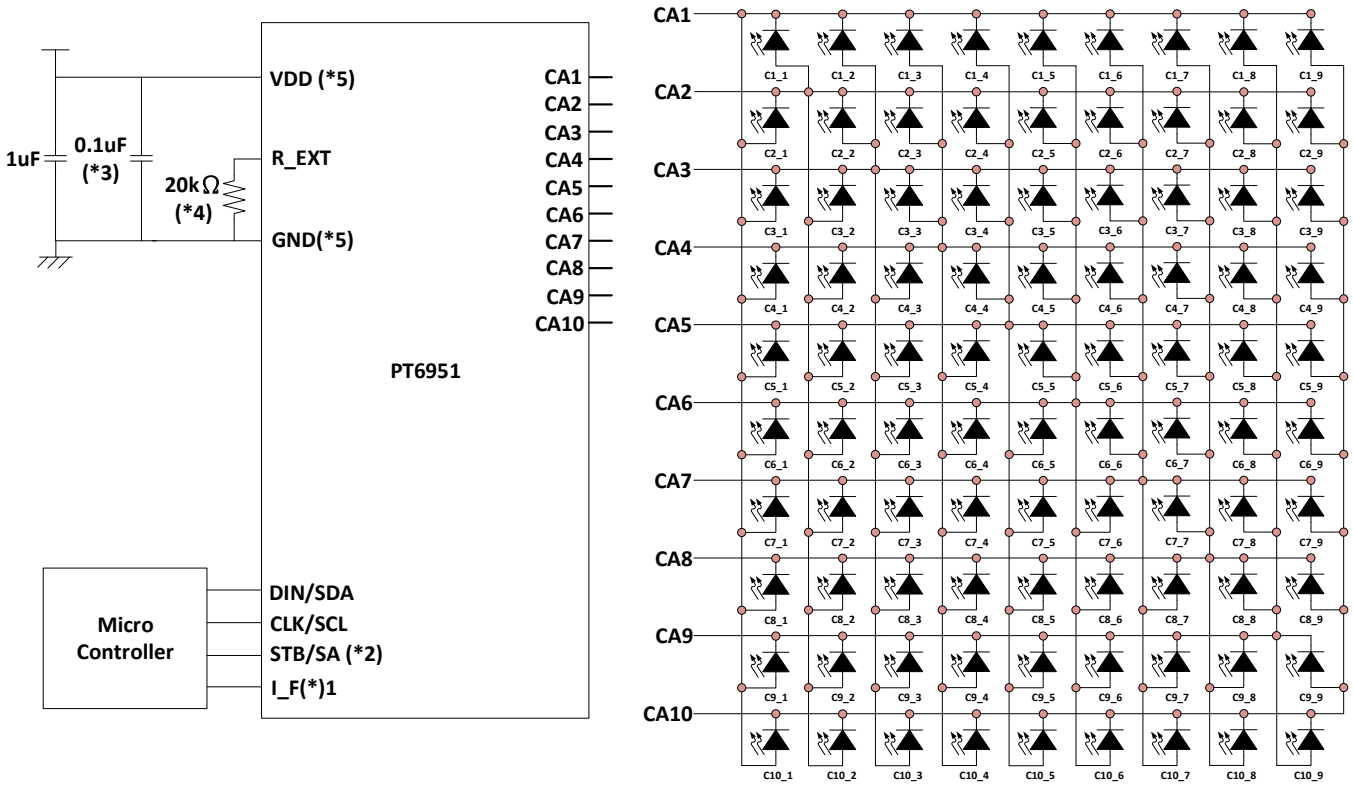
FEATURES

- CMOS technology
- Low power consumption
- 3-wire SPI-bus interface (DIN, CLK, STB)
- 2-wire I^2C interface (SCL, SDA)
- 90 LEDs in dot matrix
- 256-Step dimming setting for all individual LED
- Fading enable for all individual LED
- Constant-Current LED Segment Drive
- Serial interface for Clock, Data Input, Strobe Pins and low voltage operation ability when user's MCU power supply is 3.3V.
- Integrated Oscillator Circuit
- Available in 20-pin, TSSOP

BLOCK DIAGRAM



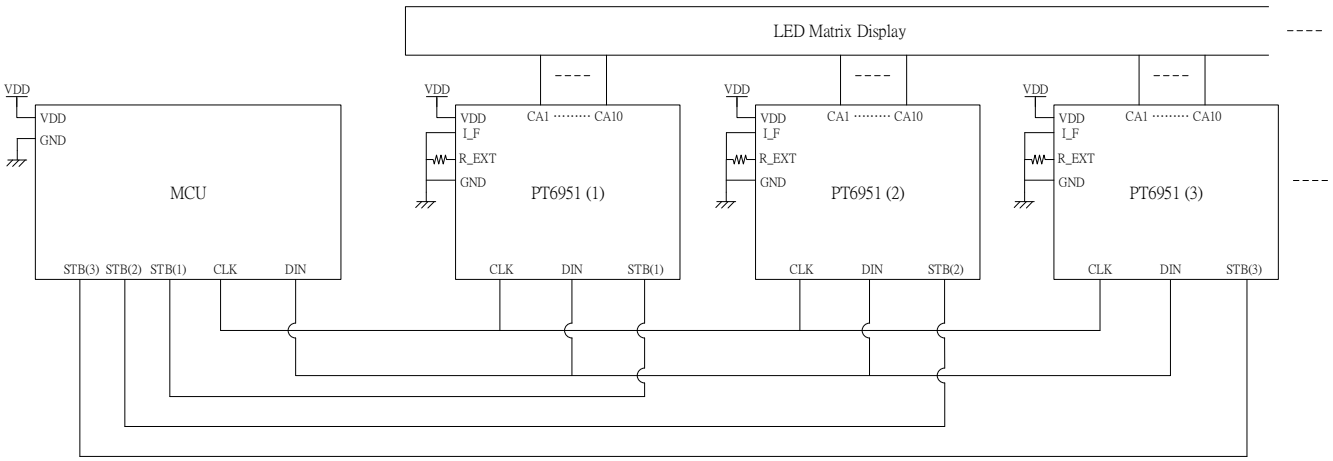
APPLICATION CIRCUIT



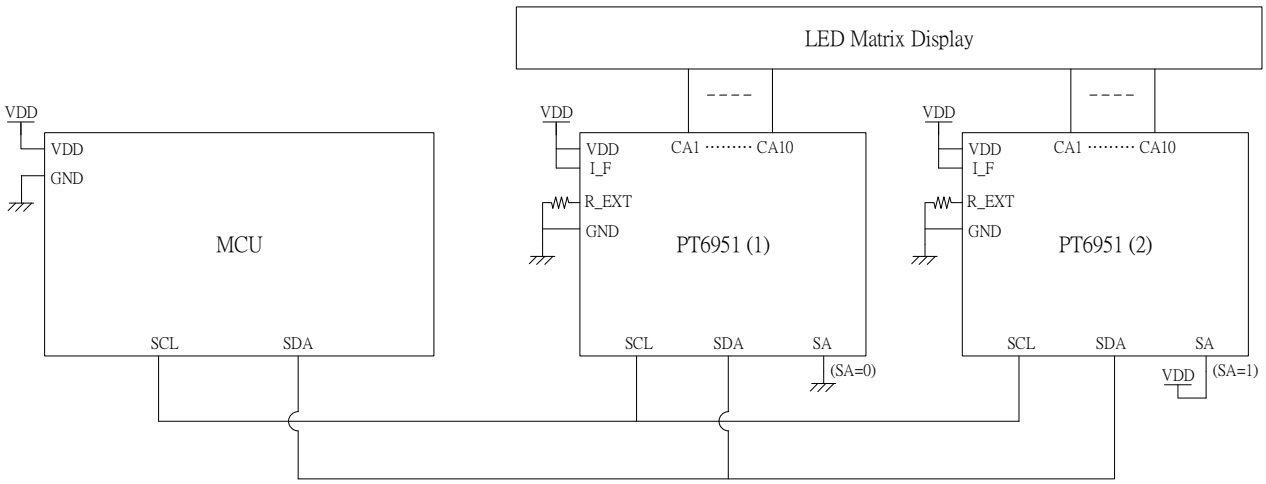
*Notes:
1. I_F pin is select 2-wire (I^2C) or 3-wire (SPI) interface, “H (connect with VDD)”=2 wire (I^2C) interface, “L(connect with GND)”=3-wire (SPI) interface.
2. When 2-wire (I^2C) interface be select (I_F pin=H), STB/SA pin is set slave address (connect with GND=70H, connect with VDD=72H), please refer the page 9 for detail.
3. The capacitor (0.1μF) connected between the GND and the VDD pins must be located as close as possible to the PT6951chip.
4. About the resistor value for R_EXT, please refer to the DRIVING CURRENT AND RESISTOR TABLE of page 3.
5. We strongly suggest user that please to connect all the power pins of PT6951 IC (2 VDDs: PIN7, 18; 2 GNDs: PIN5, 19) in their applications (Don’t to connect 1 VDD and 1 GND in their applications) to avoid abnormal operating.
6. The PT6951power supply is separate from the application system power supply.

MULTI-CHIPS (CASACDE) APPLICATIONS

SPI: (2 OR MORE THAN PT6951IC CHIPS)



I^2C: (2 PT6951IC CHIPS MAX.)



DRIVING CURRENT AND RESISTOR TABLE

About the relationship between driving current and resistor of R_EXT pin, please refer the table below.

Resistor of R_EXT pin	Driving Current (Approximate)
20KΩ	-33mA
22KΩ	-30mA
24KΩ	-27mA
27KΩ	-24mA
33KΩ	-20mA
47KΩ	-14mA
62KΩ	-10mA
100KΩ	-6mA

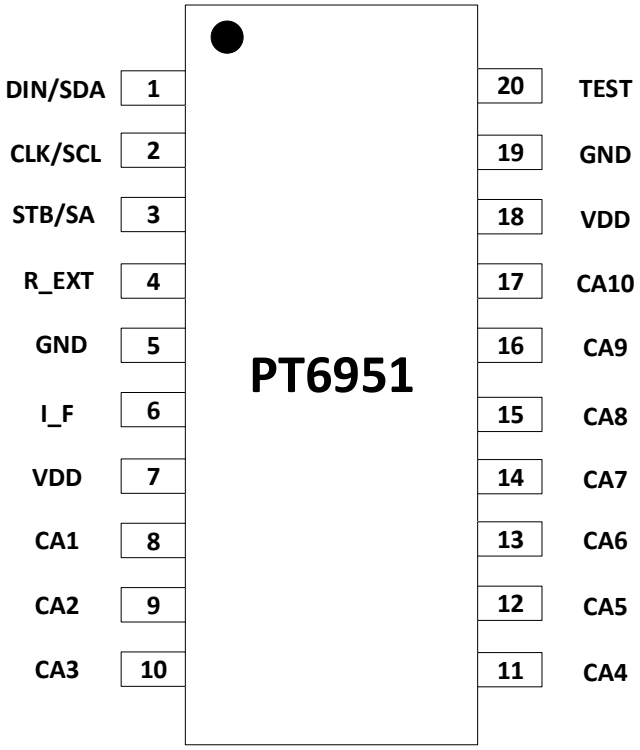
Note: Please do not use the resistance value higher or lower than the above table (Resistor range: 20KΩ~100KΩ).

ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT6951-TX	20 pins, TSSOP, 173mil (Tube)	PT6951-TX
PT6951-TX-TP	20 pins, TSSOP, 173mil (Tape & Reel)	PT6951-TX

PIN CONFIGURATION

TSSOP



PIN DESCRIPTION

Pin Name	I/O	Description	Pin No
			TSSOP-20
DIN/SDA	IO	SPI Serial data input I^2C Serial data input/output	1
CLK/SCL	I	SPI Serial data transfer clock I^2C Serial data transfer clock	2
STB/SA	I	SPI Serial interface strobe pin I^2C slave address setting input pin	3
R_EXT	A	LED Current Selection Pin Connect with resistance to confirm the LED current	4
GND	P	Ground Pin	5, 19
I_F	I(PL)	Interface select, “L”=SPI “H”=I^2C	6
VDD	P	Power Supply	7, 18
CA1 ~ CA10	I/O	LED matrix current output/input port	8~17
TEST	I	For PTC using only. (We suggested to connect this pin to ground in user’s applications)	20

IMPORTANT NOTICE

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