

6 Digit Serial Controlled 7 Segment Display (CAT4016 from ON Semi.)

6 Digit serial display project has been designed around CAT4016 IC from ON semi. The CAT4016 is a 16 channel constant current driver for LED billboard and other general display applications. LED channel currents are programmed together via an external RSET resistor. Low output voltage operation on the LED channels as low as 0.4 V (for 2 to 100 mA LED current) allows for more power efficient designs. A high-speed 4-wire serial interface of up to 25 MHz clock frequency controls each individual channel using a shift register and latch configuration. A serial output data pin (SOUT) allows multiple devices to be cascaded and programmed via one serial interface. The device also includes a blanking control pin (BLANK) that can be used to disable all channels independently of the interface. Thermal shutdown protection is incorporated in the device to disable the LED outputs if the die temperature exceeds a set limit.

Features

- 6 Digit 1 inch 7Segment Display
- Supply Input 3V to 5.5V
- Serial interface up to 25 MHz clock frequency
- LED current 20mA (Range from 2 mA to 100)
- LED current set by external RSET resistor
- 300 mV LED dropout at 30 mA
- Thermal shutdown protection
- R1,R2,R3 Current Set Resistors

LED Current Set Formula

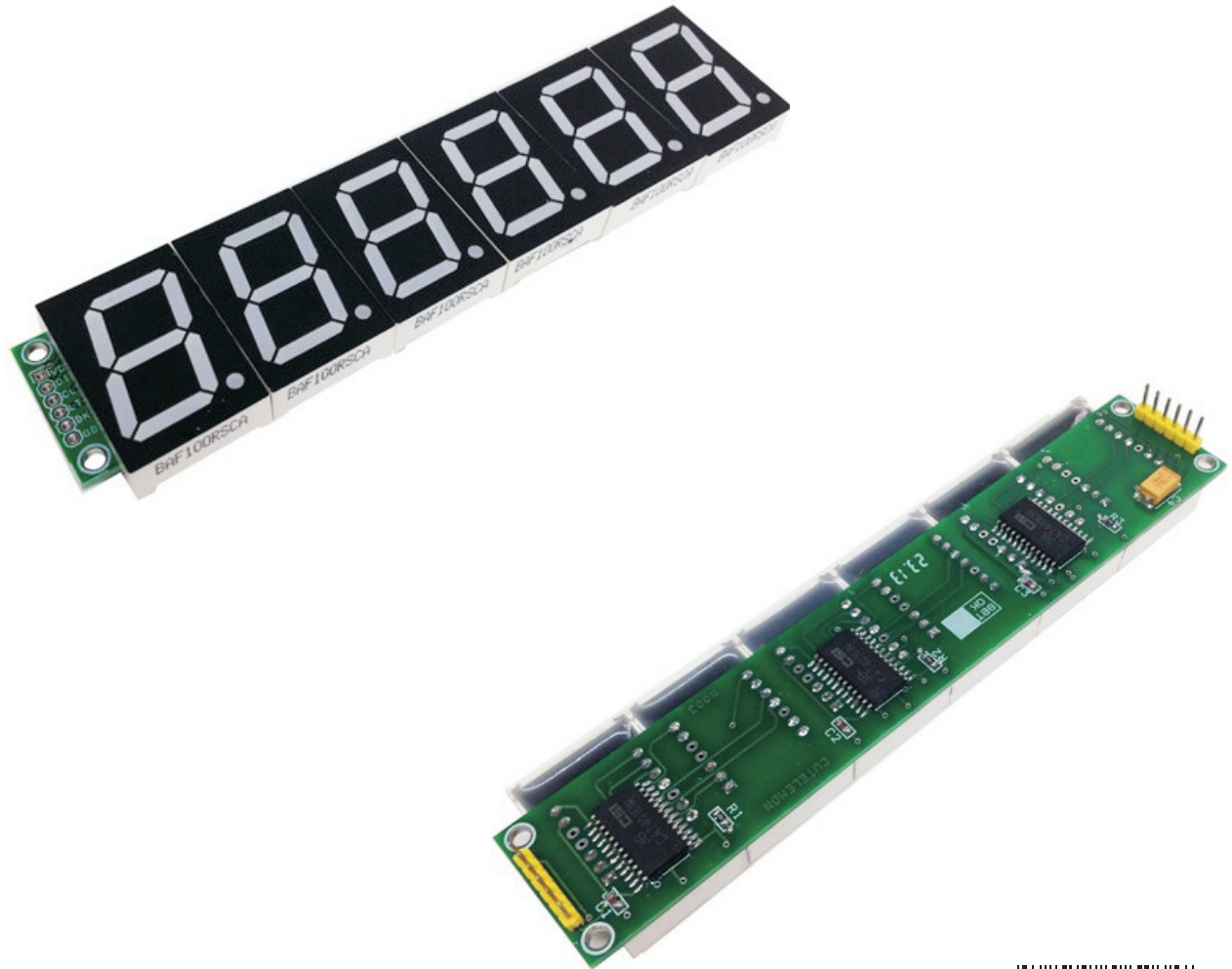
LED Current = $50 \times 1.2 / R_{set}$,
 $R_{set} = R1, R2, R3$

CN1 : Connector

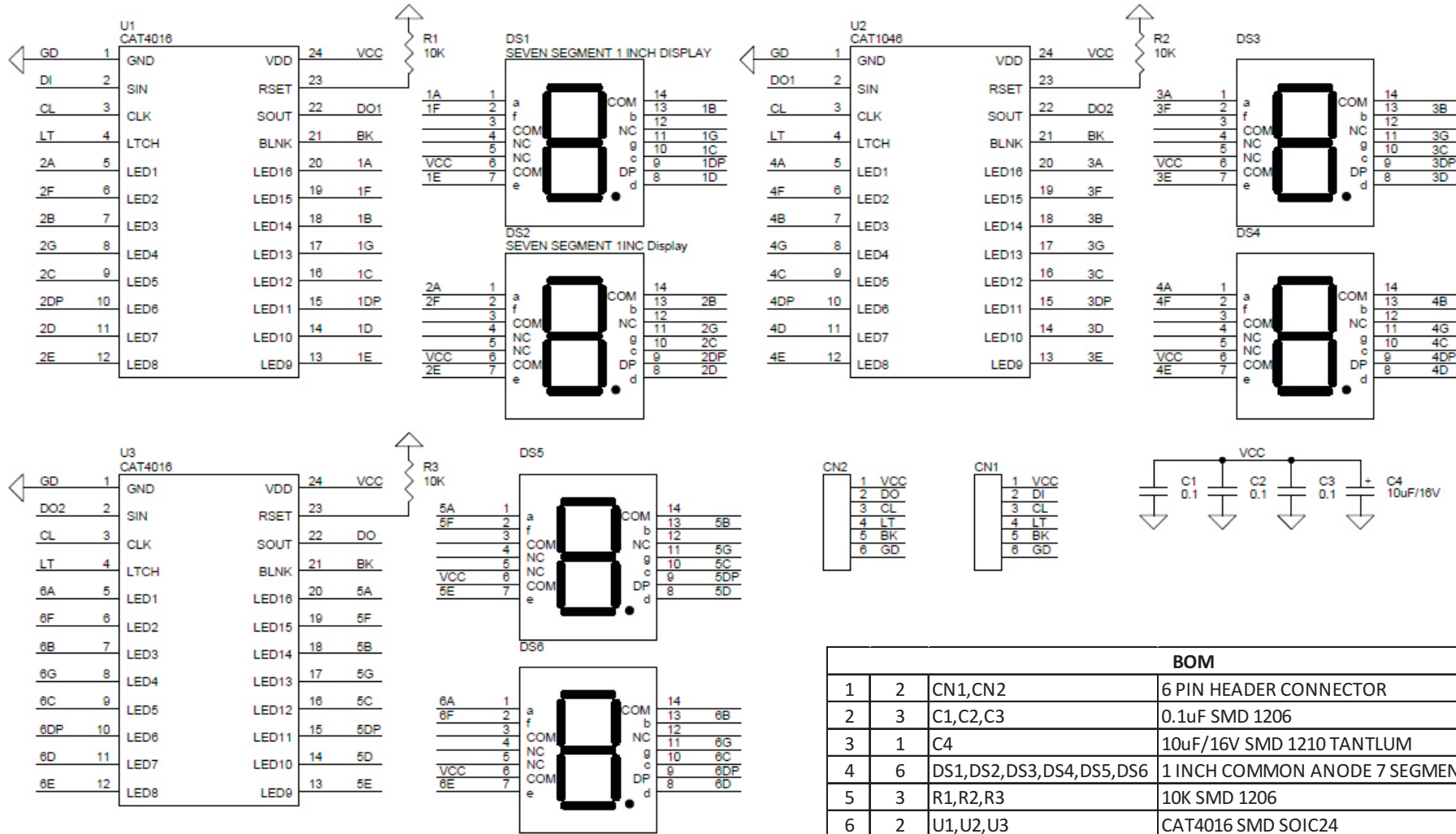
- PIN1 : 3V TO 5.5V (VCC)
- PIN2 : SIN (DI) Serial Data Input
- PIN3 : CLK (CL) Serial Clock Input
- PIN4 : Latch (LT) Latch Data Input
- PIN5 : Blank (BK) LED Channel enable disable input
- PIN6 : GND

CN2 : Serial Data Output

- PIN1 : 3V TO 5.5V (VCC)
- PIN2 : Sout (Do) Serial Data output
- PIN3 : CLK (CL) Serial Clock output
- PIN4 : Latch (LT) Latch Data output
- PIN5 : Blank (BK) LED Channel enable disable
- PIN6 : GND

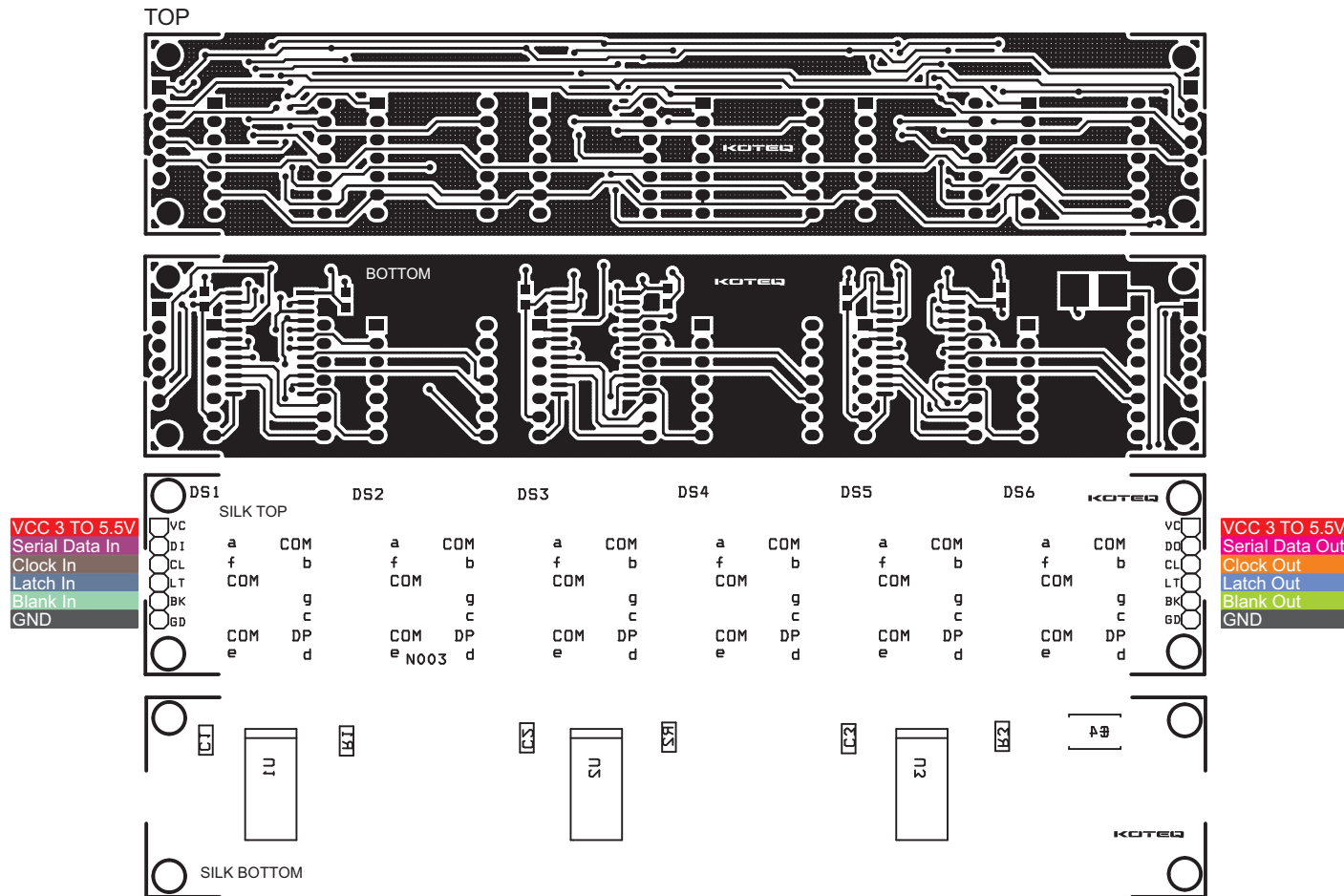


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