

Introduction

The TC62D749CFG is a constant-current driver for LED and LED display lighting applications.

The output current from each of the 16 outputs is programmable via a single external resistor.

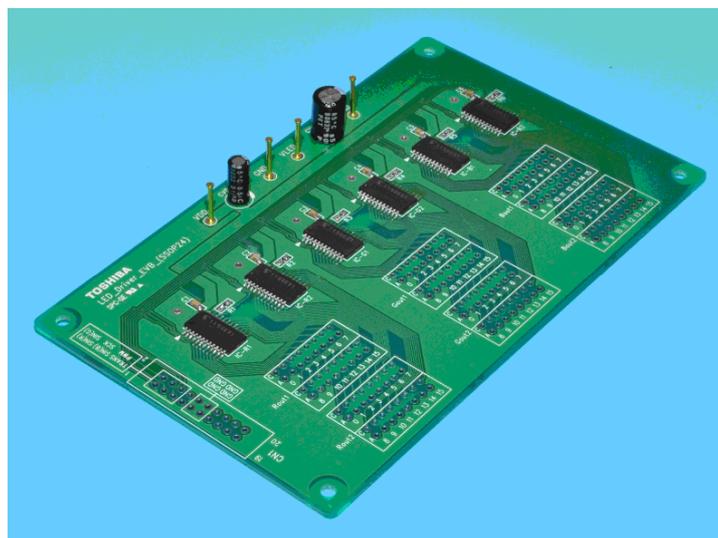
The TC62D749CFG contains a 16-channel shift register, a 16-channel latch, a 16-channel AND gate and a 16-channel constant-current output.

Fabricated with a CMOS process, the TC62D749CFG allows high-speed data transfer.

It operates with a 3.3- or 5-V power supply.

Features

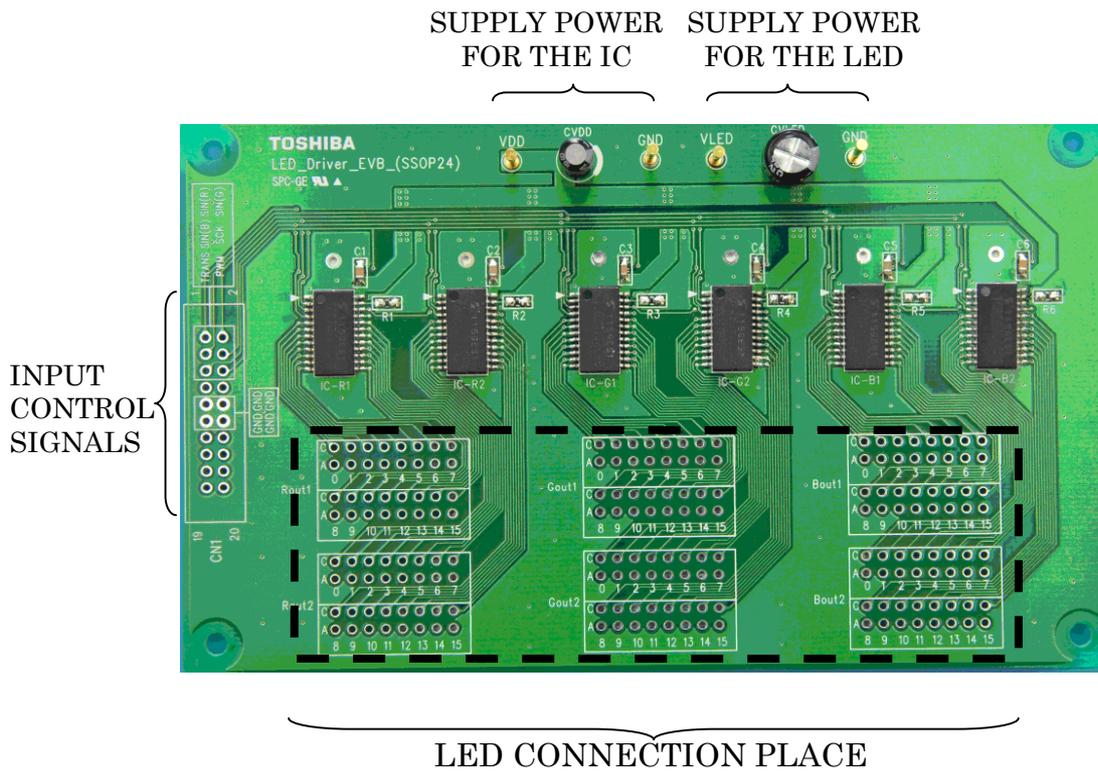
- Supply voltages : VDD = 3.0 V to 5.0 V
- 16-output built-in
- Output current setup range : IO_{UT} = 1.5 to 90 mA
- Constant current output accuracy (@ R_{EXT} = 1.2 kΩ, V_{OUT} = 1.0 V, V_{DD} = 3.3 V, 5.0 V)
 - : S rank ; between outputs ± 1.5 % (max)
 - : S rank ; between devices: ± 1.5 % (max)
 - : N rank ; between outputs ± 2.5 % (max)
 - : N rank ; between devices: ± 2.5 % (max)
- Output voltage : V_{OUT} = 17 V (max)
- High-speed output switching : t_{wOE} = 25 ns (min), t_{or} = 10ns (typ.), t_{of} = 10ns (typ.)
 There is TC62D748 as an output switching standard-speed version of this product.
- I/O interface : CMOS interfaces (Schmitt trigger input)
- Data transfer frequency : f_{SCK} = 25 MHz (max)
- Operation temperature range : T_{opr} = -40 to 85 °C
- Power-on-reset function built-in. (When the power supply is turned on, internal data is reset)
- Package : SSOP24-P-300-1.00B



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1 How to use



(A: Please connect the anode side of LED, C: Please connect the cathode side of LED.)

1.1 Power supply

1.1.1 VDD

Please Supply the VDD to TC62D749CFG through VDD pin. TC62D749CFG uses a single VDD as its power supply. The operating supply voltage of VDD must be within the range between 3.0 V and 5.5 V.

1.1.2 VLED

VLED is used as a power supply for LED lighting. VLED recommends more than LED Vf + 1V @LED current 90mA condition.

1.1.3 Power On/Off Sequence

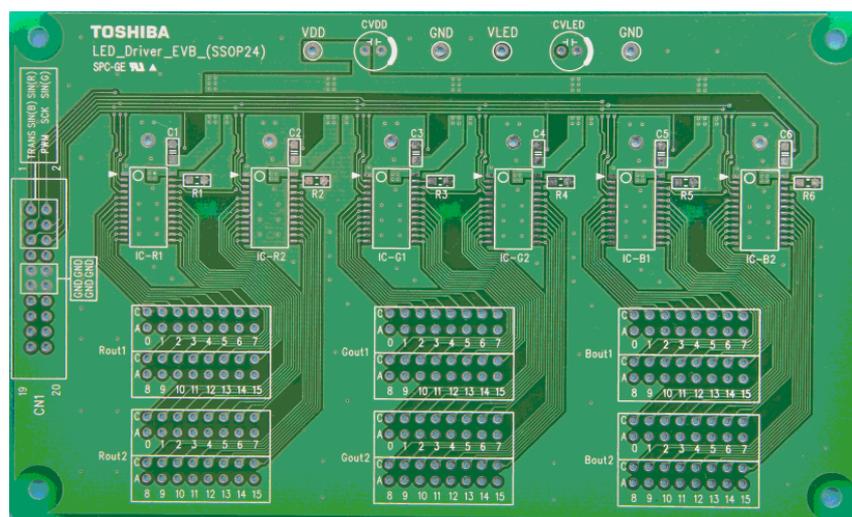
- Please input a power supply by the following sequence.
- Step 1 : VDD input
- Step 2 : VLED input
- Step 3 : Control signals input

1.2 Control inputs

The silk name of a board	A corresponding signal
SIN(R)	SIN signal for IC-R1 & IC-R2
SIN(G)	SIN signal for IC-G1 & IC-G2
SIN(B)	SIN signal for IC-B1 & IC-B2
SCK	SCK signal for all ICs
TRANS	SLAT signal
PWM	OE signal

*Please refer to TD for the details of each signal

3 Hardware layout



4 BOM

Symbol	Remarks	Recommended Value
C1,C2,C3,C4,C5,C6	Ceramic capacitor	0.47 μ F
CVDD	Electrolytic capacitor	2.2 μ F
CVLED	Electrolytic capacitor	47 μ F
R1,R2,R3,R4,R5,R6	Resistance	It is LED current setting resistance. LED current (A) = 1.04(V) \div R (Ω) \times 16.6

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