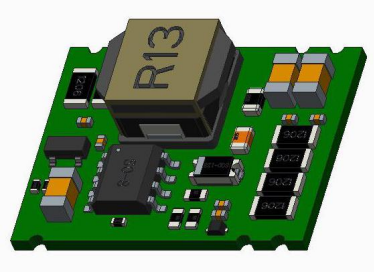
LED Driver
SKC24JT-xxxR3 Series

Constant current great power buck LED driver



RoHS

FEATURES

- High efficiency up to 94%
- Ultra-wide input voltage range (6-36VDC)
- Drive current: 700mA/300mA
- Output current accuracy (± 5%)
- Output current stability (±1%)
- Low Ripple & Noise (≤150mV)
- Continuous short circuit protection
- Open board and ultra-thin
- RoHS Compliance

SKC24JT-xxxR3 series is a high-power LED driver design for the step-down constant current source. With high efficiency, wide input voltage range, high-temperature environment, functional and so on. Contains a PWM dimming, analog dimming and remote shutdown capabilities. Backlight and can be widely used in 6V, 12V, 24V, 36V landscape lighting, special lighting controls, commercial lighting, street lighting, home lighting, automotive lighting and other lighting systems. Use of lead type package, allowing customers to use more convenient.

Selection Guide

Part No.	Input Voltage (VDC) Nominal (range)	Output Current (mA)	Efficiency (%) Min/Typ.	Max. Capacitive Load(uF)
SKC24JT-700R3	24 (6-36)	700	91/94	1000uF
SKC24JT-300R3		300	91/94	

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input-output Voltage Drop		2	--	--	VDC
Input Filter		Capacitor filter			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Power	SKC24JT-700R3, Io=700mA	2.31	--	23.1	W
	SKC24JT-300R3, Io=300mA	0.99	--	9.9	
Current Accuracy		--	±2	±5	%
Current Stability	Vin=36V, 1-10LEDs	--	--	±1	
Temperature Coefficient	-40℃ ~ +71℃	--	--	±0.05	%/℃
Ripple & Noise*	Vin=36V, 1-10LEDs	--	--	100	mVp-p
Internal Power Dissipation	Vin=24V, 5LEDs	--	--	1.2	W
Short-circuit Protection		Continuous, self-recovery			

Note: * The "parallel cable" method is used for Ripple and Noise test, please refer to DC-DC Converter Application Notes for specific information.

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Operating Temperature	See Fig. 1	-40	--	71	℃
Storage Temperature		-55	--	125	
Switching Frequency		450	500	550	kHz
MTBF	MIL-HDBK-217F@25℃	1500	--	--	k hours
Thermal Impedance		--	60	--	℃/W

General Specifications

Dimensions	21.50 x 16.72 x 5.70 mm
Weight	2.2g (Typ.)
Cooling Method	Free air convection

PWM Dimming (leave open if not used)

Remote ON/OFF	ON	Open or Vc>5V			
	OFF(shutdown)	Vc<0.75V			
Remote pin current	Vc=5V	--	--	1	mA
Quiescent input current in Shutdown mode	Vc=5V	--	400	--	uA
PWM frequency	Vin=24V, Vc <0.6V	--	--	200	Hz

Analogue dimming (leave open if not used)

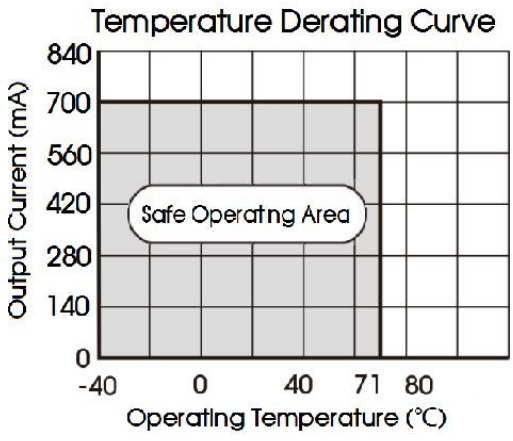
Input voltage range	Vin=6-36V	0-15V
Output current range	Vin=6-36V	0%-100%
Control voltage range	Full on	0.75V±50mV
	Full off	4.5V±200mV

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS B (see Fig. 4-② for recommended circuit)	
	RE	CISPR32/EN55032	CLASS B (see Fig. 4-② for recommended circuit)	
Immunity	ESD	IEC/EN 61000-4-2	Contact ±4kV	perf. Criteria B
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria B
	EFT	IEC/EN 61000-4-4	±1kV (see Fig. 4-① for recommended circuit)	perf. Criteria B
	Surge	IEC/EN 61000-4-5	±1kV (see Fig. 4-① for recommended circuit)	perf. Criteria B
	CS	IEC/EN 61000-4-6	3Vr.m.s	perf. Criteria B

Typical Characteristic Curves

SKC24JT-700R3



SKC24JT-300R3

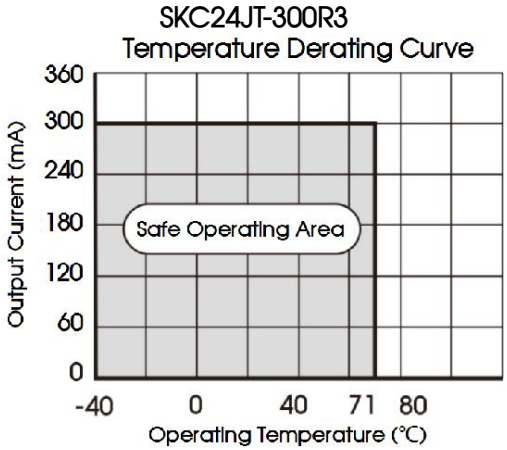


Fig. 1

Design Reference

1. Typical application circuit

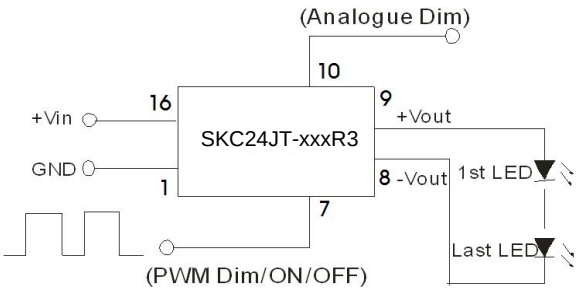


Fig. 2 Application circuits in series

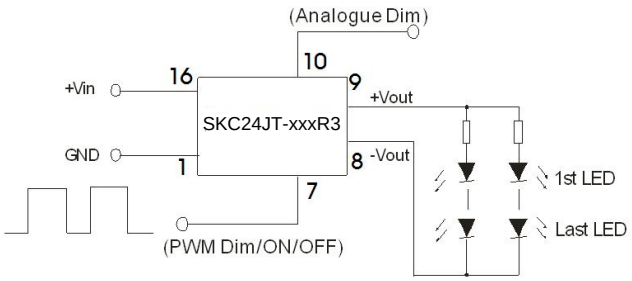


Fig. 3 Application circuits in series and parallel

Note: The negative output terminal can't connect GND, or the module may be damaged.

2. EMC compliance circuit

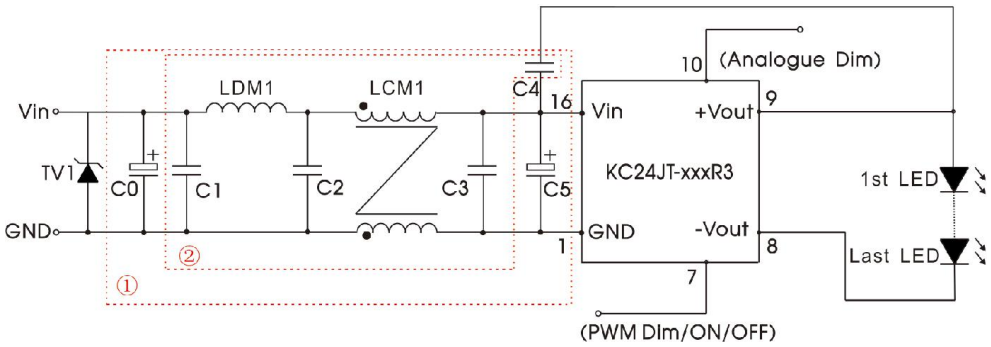


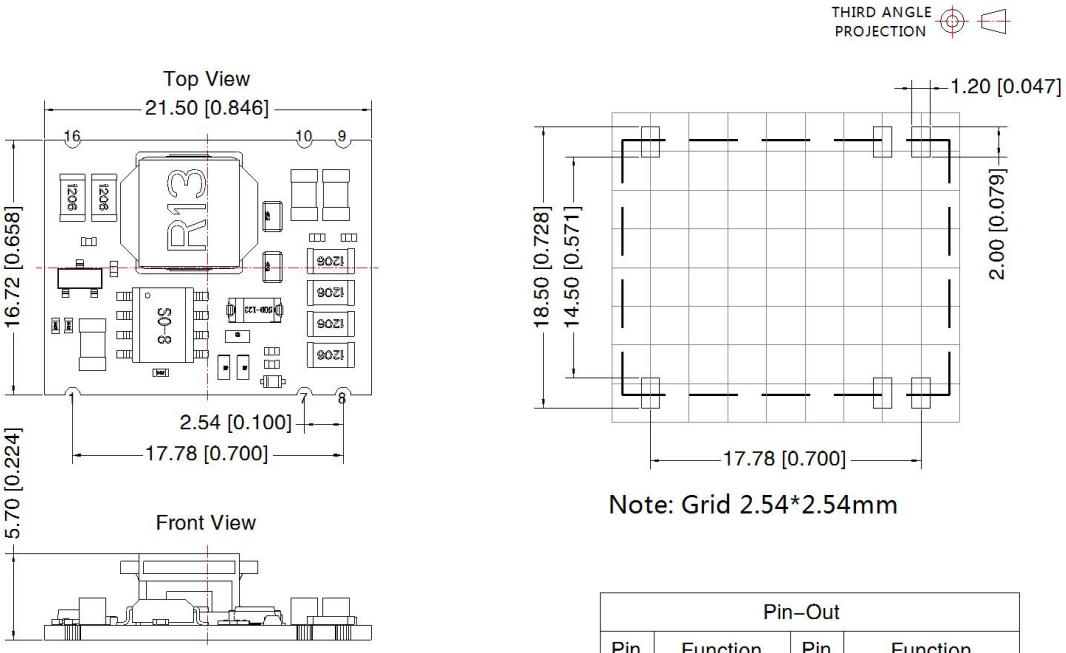
Fig. 4

Components	SKC24JT-700R3	SKC24JT-300R3
TV1	SMC51A,1500W（Brightking）	
C0/C5	470uF/100V	
C1	15uF/50V	
LDM1	10uH/1A	
C2/C3/C4	4.7uF/50V	
LCM1	235uH/1A	320uH/1A

3. The voltage drop of all LEDs in the datasheet is 3.3-3.8V, during actual application, the number of LEDs can be confirmed based on the actual voltage drop and output voltage of LEDs.

4. This product does not support hot-Plug use.

Dimensions and Recommended Layout



Note: Grid 2.54*2.54mm

Note:
Unit: mm[inch]
General tolerances: ±0.50[±0.020]

Pin–Out			
Pin	Function	Pin	Function
1	GND	9	+Vout
7	On/Off/PWM	10	Analogue Dimming
8	–Vout	16	Vin

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and half output load;
2. All index testing methods in this datasheet are based on company corporate standards;
3. We can provide product customization service, please contact our technicians directly for specific information;
4. Products are related to laws and regulations: see "Features" and "EMC";
5. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.