

## General Description

The AAT2469 is a dedicated TVLite control IC for the AAT2499 TVLite LED drivers. One AAT2469 can control up to 8 AAT2499 TVLite LED drivers (up to 16 individual LED strings), providing a high-efficiency white LED backlight solution for large-sized LCD panels used in LCD TVs.

The AAT2469 includes an SPI compatible interface allowing fast independent digital control from the system. Four unique device addresses allow control of up to 64 LED strings. From the SPI interface, the AAT2469 generates serial shift data and clock signals to drive AAT2499 TVLite LED drivers. A voltage reference output adjusts LED current globally through an 8-bit resolution dot correction register. LED PWM gray scale and phase delay registers are programmable with 12-bit resolution (11-bit resolution at PWM doubling mode) and can be synchronized to the system VSYNC input signal. The AAT2469 provides fault handling and fault reporting of all controlled TVLite current sinks through an SPI interface.

The AAT2469 provides an ICSFB signal, a current proportional signal of the CSFBO signal, to regulate the current mode DC-DC converter to optimize the LED supply voltage for each LED string from the CSFBO signal from the AAT2499 TVLite LED driver.

The AAT2469 is available in a Pb-free, 16 pin SOP package.

## Features

- $V_{IN}$  Range: 4.5V to 5.5V
- Controls up to 8 AAT2499 TVLite drivers
- 15MHz SPI Interface
- Read/Write Registers
- Four Unique Device Addresses
  - Up to 64 LED Strings
- High Resolution Digital Control for LED Current
  - 12-Bit Resolution Gray Scale PWM Brightness<sup>1</sup>
  - 12-Bit Resolution Channel Phase Delay<sup>1</sup>
  - 8-Bit Resolution Current Setting (Dot Correction)
- VSYNC, PWM and Delay Synchronization
- Integrated System Fault Reporting
  - Open and Short Circuit LED(s)
  - Programmable Short Detection Threshold
  - Over-Temperature Protection
- Soft-Start to Minimize Inrush Current
- 16 pin SOP16, 1.27mm pitch
- -20°C to +85°C Temperature Range

## Applications

- Large Size LCD TVs, Panels
- LCD Monitors
- White LED Backlighting

## LCD TV Panel LED Backlight Driver Controller

### Ordering Information

Package	Marking <sup>1</sup>	Part Number (Tape and Reel) <sup>2</sup>
SOP-16	2469 XXYY	<b>AAT2469IAB-T1</b>

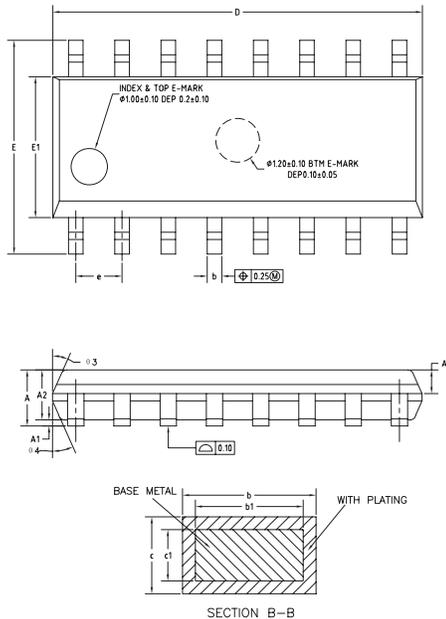


Skyworks Green™ products are compliant with all applicable legislation and are halogen-free.

For additional information, refer to *Skyworks Definition of Green™*, document number SQ04-0074.

### Package Information

#### SOP-16



COMMON DIMENSIONS  
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	1.35	1.60	1.75
A1	0.10	0.15	0.25
A2	1.25	1.45	1.65
A3	0.55	0.65	0.75
b	0.36	—	0.51
b1	0.35	0.40	0.45
c	0.17	—	0.25
c1	0.17	0.20	0.23
D	9.86	9.96	10.06
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.27BSC		
L	0.45	0.60	0.80
L1	1.04REF		
L2	0.25BSC		
R	0.07	—	—
R1	0.07	—	—
h	0.30	0.40	0.50
Ø 1	6"	8"	10"
Ø 2	6"	8"	10"
Ø 3	5"	7"	9"
Ø 4	5"	7"	9"

NOTES:  
 ALL DIMENSIONS MEET JEDEC STANDARD MS-012 AC  
 DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS.

All dimensions in millimeters.

1. XXYY = assembly and date code.
2. Sample stock is generally held on part numbers listed in **BOLD**.

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