LUMISSIL Microsystems
A Division of ISSI

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Next Generation Configurable Matrix LED Driver Family

IS31FL374x Family drives Large LED Arrays with Noise Reduction Technology

MILPITAS, Calif., June 23, 2020 -- Lumissil Microsystems, a division of Integrated Silicon Solution, Inc. (ISSI), today introduced a new family of advance matrix LED drivers targeted for large LED arrays in gaming keyboards, appliance interfaces, smart speakers, messaging and control panels. The new IS31FL374x family of matrix drivers build on the success of similar matrix drivers; IS31FL3741 (351 LEDs) and IS31FL3742 (180 LEDs). Lumissil's latest additions to the LED matrix product line are designed with the knowledge gained from being a long-term supplier of LED drivers to a large and diverse customer base. The family consists of three devices: IS31FL3743A/B, IS31FL3745, IS31FL3746A/B. The IS31FL374x line of matrix drivers provide designers with unprecedented control and flexibility in managing large LED arrays.

"It's relatively simple to individually drive a few LEDs. However, once the LED count increases, the amount of resources needed to operate the LEDs grows to an unmanageable level." Said Ven Shan, Vice President of Marketing. "Our new matrix drivers enable the control and management of large LED arrays while providing advanced monitoring and EMI noise reduction capabilities. One device is flexible enough to drive a number of matrices with its 1xn architecture, where n is configurable."

The IS31FL374x family of matrix LED drivers integrates many advanced features such as configurable matrix size, individual LED open/short detection, individual LED current adjust and PWM registers, all accessible via a fast 1MHz I2C or 12MHz SPI bus interface. A configurable matrix size helps lower costs since the same matrix driver can be reused in different projects to support various LED array sizes without a major rewrite of the software.

The IS31FL374x devices enable each LED in the array with its own corresponding control and fault status register to provide individual LED color and dimming effects, de-ghosting and fault reporting for enhanced overall system performance health and reliability. LED matrix architectures typically experience a "ghosting effect" where an LED remains dimly ON due to a residual charge in the LED array matrix. The IS31FL374x family eliminates this residual charge and therefore eliminates the LED ghosting effect. In addition, LEDs can fail to turn ON due to an LED open or short condition without the knowledge of the system. The IS31FL374x family can monitor the LED array to detect a failed LED within the array and make this information available for the system to access.

The IS31FL374x matrix driver family with its advanced feature set simplifies the management of a large number of LEDs, whether RGB color, single color or a mix of both. The package options range from a low profile UQFN for the IS31FL3743 to a chip scale packaged IS31FL3745 ideal for applications such as notebooks which have low height requirements. The IS32FL3746B is the automotive version of the IS31FL3746B and it comes in the automotive approved wettable flank QFN (WFQFN) package. The table below highlights the key differences and options available within the family.

Part Number	Market	Matrix Size	LED Array Size	Bus Type	Package	Operating Temperature	Key Features
IS31FL3743A	Consumer Industrial	18xn (n=1~11)	198	I2C (1MHz)	UQFN-40	-40°C to +125°C	8-bit (Dot Correction, PWM, Global Current), Spread Spectrum,LED Open/Short Detect, de-Ghost, Configurable Matrix Size
IS31FL3743B		18xn (n=1~11)	198	SPI (12MHz)	UQFN-40		
IS31FL3745		18xn (n=1~8)	144	I2C (1MHz)	WLCSP-36		
IS31FL3746A		18xn (n=1~4)	72	I2C (1MHz)	QFN-32		
IS31FL3746B		18xn (n=1~4)	72	SPI (12MHz)	QFN-32		
IS32FL3746B	Automotive	18xn (n=1~4)	72	SPI (12MHz)	WFQFN-32		

Availability and pricing

The IS31FL374x family of matrix drivers are available now in production quantities and with either an I2C or SPI bus interface option at no price difference for bus type.
The IS31FL3743 is priced at $1.00 each in 10K pcs quantities.
The IS31FL3745 is priced at $1.20 each in 10K pcs quantities.
The IS31FL3746 is priced at $0.75 each in 10K pcs quantities.
The IS32FL3746 is priced at $0.95 each in 10K pcs quantities.

About Lumissil Microsystems

Lumissil Microsystems is the Analog & Mixed signal division of ISSI. We develop innovative analog and mixed-signal IC solutions for use in the consumer appliance, IoT, gaming, industrial, communications and automotive markets. Our wide range of IC solutions include LED drivers for low to mid-power RGB color mixing and high power lighting applications as well as audio, sensors and application specific microcontrollers and networking semiconductor ICs. Our network of worldwide employees are committed to engineering innovation, design in of quality, sales support and long term availability for our IC solutions. Learn more at www.lumissil.com.

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About Integrated Silicon Solution, Inc. (ISSI)

ISSI is a fabless semiconductor company that designs, develops and markets high performance integrated circuits for the following key markets: (i) automotive, (ii) communications, (iii) industrial, and medical, and (iv) digital consumer. ISSI's primary products are SRAM, DRAM, Flash memory which includes NOR flash, NAND flash and managed NAND solutions (eMMC), and Analog and Mixed signal integrated circuits. ISSI provides high-quality semiconductor products and has been a committed long-term supplier of integrated circuit products. ISSI is headquartered in Silicon Valley with worldwide offices in Taiwan, Japan, Singapore, China, Europe, Hong Kong, India, and Korea. Visit our web site at http://www.issi.com