LUMISSIL Microsystems
A Division of ISSI

Advanced Ultra-Low Power Matrix LED Drivers With 12-Bit PWM and Dot Correction drives up to 72 LEDs

IS31FL375x Family consumes less than 500uA current and comes in small 20-Pin QFN Packages

MILPITAS, Calif., August 02, 2021 -- Lumissil Microsystems, a division of Integrated Silicon Solution, Inc. (ISSI), announced today three new LED matrix drivers targeted for a wide range of consumer and industrial applications requiring low power consumption with high LED count. These drivers have been specifically designed to incorporate the latest technical advances for matrix LED drivers. They require less than 500µA of operating current, support 12-bit PWM and dot correction for accurate color reproduction in IoT, AI speakers, PC gaming, and other handheld applications.

This family of matrix LED drivers were designed to address the critical challenges of a minimal board space and low power dissipation demanded by today's IoT devices. They also incorporate spread spectrum and 180-degree phase delay of the outputs to minimize electrical-magnetic interference (EMI). In addition, the family integrates enhanced circuits to detect the condition of the LEDs (open or short) and solve the 'ghosting' artifact challenges with LED arrays.

"The introduction of our latest matrix drivers represents the commitment of Lumissil Microsystems to continuously innovate and enhance our LED driver offerings." Said Ven Shan, Vice President of Marketing. "As a leader in LED driver technology, Lumissil Microsystems has raised the performance bar by adding noise reduction, 12-bit color, dot correction and low power consumption in a small 20-pin QFN package. These drivers pack a lot of performance features consuming less than 500µA in a small package while driving up to 72 LEDs, a first in the industry."

The IS31FL375x family of matrix LED drivers consists of three devices housed in a small 20-pin QFN package. They 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 IS31FL375x 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 IS31FL375x family can monitor the LED array to detect a failed LED within the array and make this information available for the system to access.

Device Number	Matrix Size	Operating Current (typ)	PWM	Dot Correction	De-Ghost	Spread Spectrum	180 Degree Shift	Package Size
IS31FL3751	72 (9x8)	550µA	8/12-bit	4-bit	Yes	Yes	Yes	QFN-20 (4mm×4mm)
IS31FL3752	24 (12x2)	500µA	8/12-bit	8-bit	Yes	Yes	Yes	QFN-20 (3mm×3mm)
IS31FL3756	36 (12x3)	500µA	8/12-bit	8-bit	Yes	Yes	Yes	QFN-20 (3mm×3mm)

Availability and pricing

The IS31FL375x family of matrix drivers are available now in production quantities.
The IS31FL3751 is priced at $0.69 each in 10K pcs quantities.
The IS31FL3752 is priced at $0.55 each in 10K pcs quantities.
The IS31FL3756 is priced at $0.60 each in 10K pcs quantities.

About Lumissil Microsystems
Lumissil Microsystems is the analog/mixed-signal product division of ISSI, a fabless semiconductor company that designs and markets high performance integrated circuits for the following key markets: (i) automotive, (ii) communications, (iii) industrial/medical, and (iv) digital consumer. Lumissil Microsystems' primary products include LED drivers for low to mid-power RGB color mixing and high power lighting applications, audio, sensor, high-speed wired communications, optical networking ICs and application-specific microcontrollers. ISSI/Lumissil Microsystems is headquartered in Silicon Valley with worldwide offices in Taiwan, Japan, Singapore, China, Europe, Hong Kong, India, and Korea. Visit our website at https://www.lumissil.com

About Integrated Silicon Solution, Inc. (ISSI)
ISSI is a fabless semiconductor company that designs, develops and markets high performance SRAM, DRAM, Flash memory (including NOR flash, NAND flash and managed NAND solutions (eMMC)), and Analog/Mixed-signal integrated circuits. ISSI provides high-quality semiconductor products and has been a committed long-term supplier to its customers. ISSI is headquartered in Silicon Valley with worldwide offices in Taiwan, Japan, Singapore, China, Europe, Hong Kong, India, and Korea. Visit our website at http://www.issi.com/

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