



LX24232 - 32 Channel BackLight LED Driver

DESCRIPTION	KEY FEATURES
<p>The LX24232 is a 32-channel display backlight LED controller. The device is part of a chipset consisting of the LX24232 and the LX23108A 8-channel LED driver. Each controller is capable of controlling up to 32 LED channels, by controlling up to four LX23108A LED drivers. Each driver contains eight FETs and controls up to 4 x 8 LED channels, where each channel is capable of driving a current of up to 200mA.</p> <p>The LX24232 has 32 independent, frame-by-frame controlled PWM output channels; each output channel supports independent duty-cycle and phase delay control. It uses a V_{sync} input for flexible synchronization schemes, including synchronization to either rising or falling edges, optimal V_{sync} jitter support, as well as single or multiple PWM cycles per frame support, and loss of V_{sync} support.</p> <p>The LX24232 consists of an on-chip internal power supply control circuitry that can be used to adjust the voltage level of an external LED power source. This is done by regulating the LED supply voltage to the optimum level, and thus minimizing the system power loss. At the same time, accurate current regulation for each of the 32 LED strings is maintained.</p> <p>The LX24232 includes an on-chip analog to digital converter for drain voltage (VD) measurements, for power supply control, fault detection and protection. The device is configured through the SPI interface which speeds up communication and reduces the number of control signals between the LX24232 and the host system (FPGA, Video Processor, and CPU).</p> <p>The LX24232 supports a daisy chain connection in case more than 32 channels are required and can detect three types of system faults on each of its 32 channels (over-temperature, open LEDs and short LEDs). After detecting the faults the unit takes the required measures to protect the system.</p> <p>The LX24232 is capable of controlling up to 8 LX23108A drivers, in a special configuration where two consecutive channels are connected together for increased current support. Refer to the application note for more details.</p>	<ul style="list-style-type: none"> ◆ White LED or RGB BackLight driver for large size display panels ◆ Up to 32 LED strings with $\pm 1.5\%$ precision current matching ◆ Wide dimming ratio with PWM and LED current amplitude control ◆ 12-bit PWM duty-cycle resolution and 8-bit resolution for LED current setting ◆ LED power supply voltage control ◆ SPI communication interface ◆ Open string, short LED and over-temperature protection for each individual channel ◆ On-chip thermal monitoring

PACKAGE ORDER INFO	
T_A (°C)	Plastic 8x8mm QFN 56 pin
	RoHS Compliant/Pb free
-40 to +85°C	LX24232ILQ
Note: Available in Tape & Reel. Append the letters "TR" to the part number. (i.e. LX24232ILQ-TR)	

