

TI Unveils High-Performance Power Supply Chip for Large Screen LCD Displays, TVs

April 13 2005

Texas Instruments Incorporated (TI) announced today a high-performance power management integrated circuit (IC) that efficiently supports all four voltage requirements in a thin film transistor (TFT) liquid crystal display (LCD) panel. The highly integrated DC/DC device, which can be powered directly from a 12-V source, is the ideal power manager to safely control high current capabilities of today's large screen monitor panels and LCD TVs.

TI's single-chip TPS65160 incorporates two high-efficiency DC/DC converters, two charge pumps, a wide range of safety features and adjustable power-on sequencing functionality. Supporting input voltages from 8 V to 14 V, the integrated device includes a 2.6-A switch-mode boost converter to provide the source voltage for the system, a 1.8-A non-synchronous step-down converter to provide the logic voltage, and positive and negative charge pump drivers with adjustable regulated output voltages to ensure optimal picture quality.

The TPS65160 provides fast transient response and maintains up to 95 percent power conversion efficiency to help save energy usage. The TPS65160 also includes safety features such as over-voltage protection of the boost converter; short-circuit protection of the buck converter; and thermal shutdown to prevent damage caused by excessive heat and power dissipation. Additionally, an under-voltage lockout function shuts down the device at voltages lower than 6 V to provide added protection.

Key Technical Features of the TPS65160:

- 8 V to 14 V Input Voltage Range
- Vs Output Voltage Range up to 20 V
- One Percent Accurate Boost Converter with 2.6-A Switch Current
- 1.5 Percent Accurate 1.8-A Step-Down Converter
- 500 kHz/750 kHz Fixed Switching Frequency
- Negative Charge Pump Driver for VGL
- Positive Charge Pump Driver for VGH
- Adjustable Sequencing for VGL, VGH
- Gate Drive Signal to Drive External MOSFET
- Thermal Shutdown

The TPS65160 TFT LCD power converter is available today in volume from TI and its authorized distributors. The device comes in a 28-pin TSSOP package. Suggested resale pricing in quantities of 1,000 is \$2.60.

Citation: TI Unveils High-Performance Power Supply Chip for Large Screen LCD Displays, TVs (2005, April 13) retrieved 9 April 2024 from <https://phys.org/news/2005-04-ti-unveils-high-performance-power-chip.html>

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