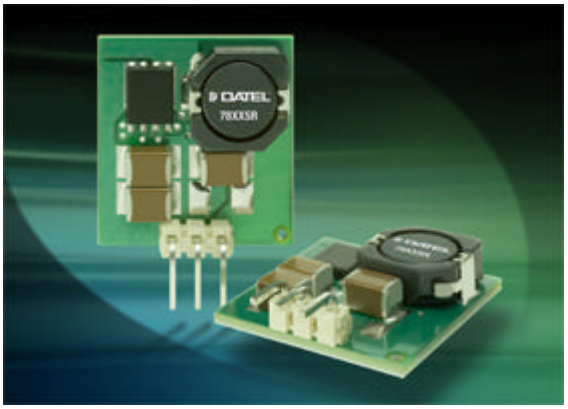
78SR Step-Down Switching Regulators Provide High-Efficiency Drop-In Replacement For LM7805 & LM7812 Applications



Up to 95% efficiency at full load without costly heat sinks or fans

3.3V/2A & 5V/2A outputs are pin-compatible with 1.5A 78xx modules

Wide 8 to 32Vdc input voltage range with ±0.35% line regulation

-40 to +70°C full load operation at 24Vin with no thermal derating

Murata Power Solutions' new 78SR Series 2A switching regulators provide high operating efficiency for applications requiring 3.3V or 5V outputs, at 2 Amps or less, from 8 to 32V inputs. At a nominal 12V input, full-load efficiencies approach 96% for 5V models, and 93% for 3.3V models.

Unlike competitive products which typically suffer significant efficiency drops at low load currents, 78SR switching regulators operating at 12Vin and 25% load (0.5A) deliver efficiencies of 90% for 5V models, and 87% for 3.3V models.

Choice of rugged 3-pin SIP packages

78SR Series switching regulators are available in two space-saving 0.8in. x 0.85in. (20.3 x 21.6mm) package styles: a standard vertical-mount SIP which occupies less than 0.09in2. (58mm2) of PCB real estate, and for applications with height restrictions, a horizontal-mount version with an installed height of less than 0.30in. (7.6mm). Both packages feature sturdy 0.025in. (0.6mm) square pins that securely support the units without additional hardware or mounting tabs.

No thermal derating with 12 or 24V inputs

The 78SR 2A Series has a 210 KHz switching frequency, optimized low-loss layout, and an open frame construction. This allows for full-load operation from 9V, 12V, or 24V, supplies at ambient temperatures up to +70°C without heat sinks, forced-air cooling or temperature derating. This high efficiency can dramatically increase battery life in portable instrumentation and standby-power applications, while also providing lower overall operating costs.

Enhanced performance

The new switching regulators offer several additional improvements over their linear counterparts. These include higher operating input voltage (32V vs. 28V), higher output current (2A vs. 1.5A), and significantly tighter output accuracy (±2% vs. ±5%). Excellent line and load regulation of ±0.35% and ±0.25%, respectively, allows for operation from poorly-regulated dc supplies. Unlike their linear counterparts they do not need any external input or output capacitors to provide stable, low-noise operation.

Numerous applications

78SR switching regulators are low cost, pin and function compatible upgrades for competitive 0.5 to 2 Amp output, linear or switch-mode 3-pin modules. Applications for the new regulators include: Battery powered instruments, test equipment and fixtures, 12V/24V automotive, marine and recreational vehicles, military and aerospace electronics, industrial control instrumentation, and battery back-up power systems.

About Murata Power Solutions

Murata Power Solutions, (www.murata-ps.com) is headquartered in Mansfield, Massachusetts, with over 1,300 employees, and locations in the USA, Canada, Mexico, England, France, Germany, Tokyo and China. Murata Power Solutions designs, manufactures and distributes DC/DC Converters, AC/DC Power Supplies, Magnetics, Data Acquisition devices and Panel Meters, and offers these products in custom, standard and modified-standard variations. These products, which are built to exacting requirements in ISO9000:2000-approved facilities, are typically used worldwide within telecommunications, computing, industrial and other high-tech applications

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