SIMPLE SWITCHER® Power Modules for Medical

Low EMI, compact solutions ideal for sensitive instrumentation.

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The SIMPLE SWITCHER power modules deliver powerful system performance, low EMI, and high reliability enabling today's state-of-the-art medical equipment. The power modules integrate the control circuitry, a shielded inductor, MOSFETs, and small passives in an easy-to-use package to streamline design and layout challenges such as choosing the inductor, selecting the switching frequency, and optimizing the switch node for thermal and EMI performance.

Robust System Performance

- Guaranteed low EMI performance will not interfere with sensitive analog signal paths
- Low output voltage ripple for powering noise-sensitive transceiver and signaling ICs
- Excellent transient performance for fast response to varying load conditions
- Self-protected against output overvoltage and short circuit conditions

Fast Development Time

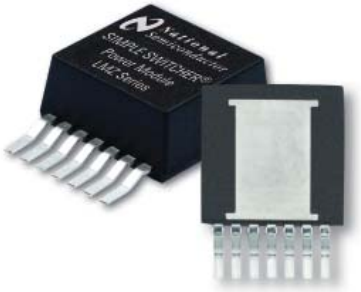
- Innovative packaging similar to TO-263 makes design easy, similar to a Linear Dropout Regulator (LDO)
- Highly integrated solution simplifies board layout and design qualification, lowers manufacturing and overall risk
- Compatible with pick-and-place manufacturing used for TO-263
- Easy to hand solder for quick prototyping
- Complies with EN55022 Class B radiated EMI standards
- Pin-to-pin compatibility and identical footprint for different load currents within each module series maximizes design reusability

High Energy Efficiency

- Up to 94% peak efficiency using synchronous DC-DC switching reduces system heat generation and energy costs

High Reliability

- Semiconductor integrated circuit level reliability and performance for rugged environments
- Single exposed bottom offer best-in-class thermal performance and leads offer board to device stress relief from varying ambient temperatures
- Excellent thermal performance eliminates the need for external heat sinks and fans
- Guaranteed and tested to perform with temperatures ranging from -40˚C to 125˚C
- Fully RoHS compliant



DESIGN MADE EASY

1 EXPLORE & LEARN
2 COMPARE & SELECT
3 DESIGN & BUILD

National Semiconductor

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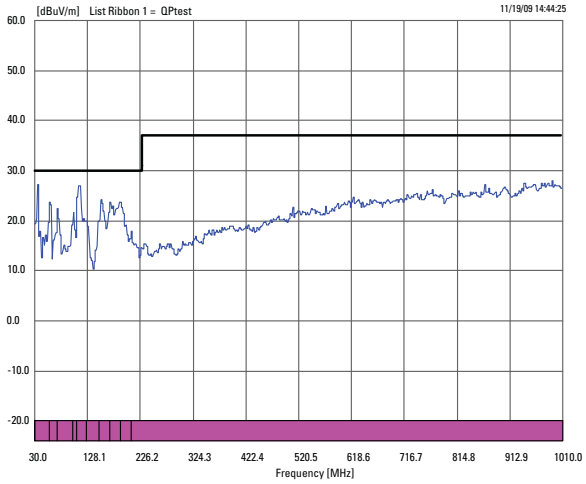
Low EMI, compact solutions ideal for sensitive instrumentation.

Target Medical Applications

- Imaging
- Ultrasound
- Endoscopy
- CT/MRI machines
- Patient monitoring
- Anesthesia machines

LMZ10504 Radiated EMI Performance



Complies with EN55022 (CISPR22) Class B Radiated EMI Standard

3.3V and 5V Input Rail Devices

Device	Output Current	Input Voltage	Output Voltage	Output Voltage Ripple (3.3V to 1.2V)	Peak Efficiency (3.3V to 1.2V)	Package Dimensions (including leads)	EMI Certification	Pricing (500u)
LMZ10505	5A	2.95V to 5.5V	0.8V to 5V	10 mV pk-pk	91%	7-pin TZA 10.16 x 13.77 x 4.57mm	EN55022 (Class B)	$7.60
LMZ10504	4A	2.95V to 5.5V	0.8V to 5V	10 mV pk-pk	91%	7-pin TZA 10.16 x 13.77 x 4.57mm	EN55022 (Class B)	$7.10
LMZ10503	3A	2.95V to 5.5V	0.8V to 5V	8 mV pk-pk	90.7%	7-pin TZA 10.16 x 13.77 x 4.57mm	EN55022 (Class B)	$6.60

12V Input Rail Devices

Device	Output Current	Input Voltage	Output Voltage	Output Voltage Ripple (12V to 3.3V)	Peak Efficiency (12V to 3.3V)	Package Dimensions (including leads)	EMI Certification	Pricing (500u)
LMZ12003	3A	4.5V to 20V	0.8V to 6V	25 mV pk-pk	90%	7-pin TZA 10.16 x 13.77 x 4.57mm	EN55022 (Class B)	$7.25
LMZ12002	2A	4.5V to 20V	0.8V to 6V	18 mV pk-pk	90.5%	7-pin TZA 10.16 x 13.77 x 4.57mm	EN55022 (Class B)	$6.00
LMZ12001	1A	4.5V to 20V	0.8V to 6V	13 mV pk-pk	90.5%	7-pin TZA 10.16 x 13.77 x 4.57mm	EN55022 (Class B)	$5.25

24V Input Rail Devices

Device	Output Current	Input Voltage	Output Voltage	Output Voltage Ripple (24V to 3.3V)	Peak Efficiency (24V to 3.3V)	Package Dimensions (including leads)	EMI Certification	Pricing (500u)
LMZ14203	3A	6V to 42V	0.8V to 6V	29 mV pk-pk	86.5%	7-pin TZA 10.16 x 13.77 x 4.57mm	EN55022 (Class B)	$9.50
LMZ14202	2A	6V to 42V	0.8V to 6V	20 mV pk-pk	87%	7-pin TZA 10.16 x 13.77 x 4.57mm	EN55022 (Class B)	$7.50
LMZ14201	1A	6V to 42V	0.8V to 6V	17 mV pk-pk	87%	7-pin TZA 10.16 x 13.77 x 4.57mm	EN55022 (Class B)	$6.50

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