SIMPLE SWITCHER® Power Modules for Factory Automation

Highly efficient, robust solutions are ideal for rugged industrial conditions.

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The SIMPLE SWITCHER power modules deliver power system performance, low EMI, and high reliability enabling today's state-of-the-art production facilities and factory floor machinery. The energy-efficient, power modules, combined with easy-to-use online design tools, address the specific needs of motor control, automation control networks and machine vision applications.

High Energy Efficiency

- Up to 94% peak efficiency using synchronous DC-DC switching reduces factory floor energy costs

High Reliability

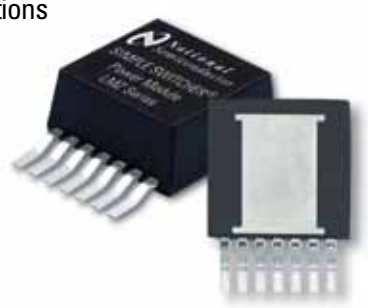
- Semiconductor integrated circuit level reliability and performance for rugged environments
- Single exposed bottom offers best-in-class thermal performance and leads offer board-to-device stress relief from varying ambient temperatures
- Excellent thermal performance eliminates the need for external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

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

Robust System Performance

- Guaranteed low EMI performance will not interfere with sensitive analog signal paths
- Operate at up to 42V input voltage
- Operate at ambient temperatures from -40° C to 85° C without a heat sink or fan
- Self-protected against output overvoltage and short circuit conditions



DESIGN MADE EASY

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

National Semiconductor

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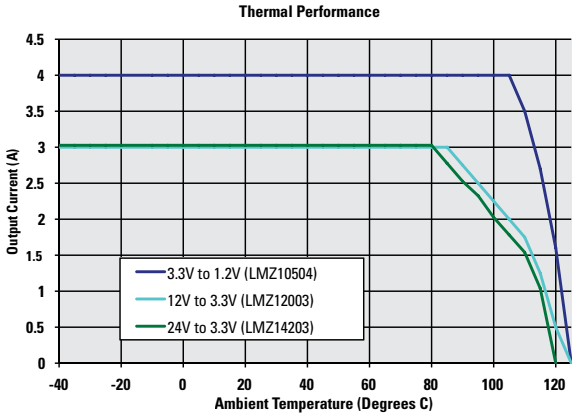
Highly efficient, robust solutions are ideal for rugged industrial conditions.

Target Factory Automation Applications

- DCS (Distributed Control Systems)
- PLCs (Programmable Controller and I/O Modules)
- CNC (Computer Numerical Control)
- Embedded computer board
- Motor control
- Motion control
- Machine vision



LMZ12003 & LMZ14203 thermal performance measured on 3" x 1.7" four layer board, 1 oz. copper

LMZ10504 thermal performance measured on 2.25" x 2.25" four layer board, 1 oz. copper

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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