LOWER YOUR CO_2 FOOTPRINT: VISHAY POWER SOLUTIONS Selector Guide

FEATURED PRODUCTS

- DC/DC regulators
- Smart load switches
- Analog switches and multiplexers

APPLICATIONS

- Networking, telecom, and base station power supplies
- Server computing
- Industrial automation
- Unregulated wall transformers

DRIVE SUSTAINABILITY FORWARD WITH VISHAY POWER SOLUTIONS

- Enhance energy efficiency and optimize space utilization with Vishay's DC/DC regulators and load switches
- Reduce power loss, minimize CO_2 emissions, and lower energy costs with superior power conversion
- Improve PCB real estate efficiency by up to 64 %
- Cut power solution losses by around 50 %
- Enable smarter, cleaner, and more reliable industrial designs
- Power a more sustainable future with advanced, high performance technologies

RESOURCES

- For technical support, contact powerictechsupport@vishay.com
- Sustainability at Vishay www.vishay.com/en/Sustainability

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The DNA of tech.®

Compact, Efficient DC/DC Regulators for Sustainable Power Designs

- Combine efficiency and a compact design
- Deliver up to nine points better efficiency in 3 A to 4 A applications
- Provide up to 4 % higher efficiency in 10 A applications vs. competing solutions
- Help lower electricity costs and significantly reduce CO_2 emissions
- Save up to 64 % PCB real estate with compact package sizes
- Enable thousands of kilowatt-hours saved over operational lifespans

microBUCK® DC/DC Converter Regulators

	SiC461	SiC463	SiC478
Description	10 A, 4.5 V to 60 V input, 100 kHz to 2 MHz, microBUCK® synchronous buck regulator	4 A, 4.5 V to 60 V input, 100 kHz to 2 MHz, synchronous microBUCK® regulator	5 A, 4.5 V to 55 V input, 100 kHz to 2 MHz, synchronous microBUCK® regulator
V_{IN} Min. (V)	4.5	4.5	4.5
V_{IN} Max. (V)	60	60	55
V_{OUT} Min. (V)	0.8	0.8	0.8
V_{OUT} Max. (V)	0.92 x V_{IN}	0.92 x V_{IN}	15
Continuous Output Current (A)	10	4	5
Switch Freq Min. (kHz)	100	100	100
Switch Freq Max. (kHz)	2000	2000	2000
Pre Bias Oper. (Y / N)	Yes	Yes	Yes
Internal Bias Regulator	Yes	Yes	Yes
Compensation (Y / N)	External	External	Internal
Enable (Y / N)	Yes	Yes	Yes
PGOOD (Y / N)	Yes	Yes	Yes
Overcurrent Protection (Y / N)	Yes	Yes	Yes
Protection	OVP, OCP, UVP / SCP, OTP, UVLO	OVP, OCP, UVP / SCP, OTP, UVLO	OVP, OCP, UVP / SCP, OTP, UVLO
Light Load Mode	Selectable powersave / ultrasonic	Selectable powersave / ultrasonic	Selectable powersave / ultrasonic
Peak Eff. (%)	98	98	98
Package	PowerPAK® MLP55-27L	PowerPAK® MLP55-27L	PowerPAK® MLP55-27L
Package Size (W, L, H) (mm)	5 x 5 x 0.75	5 x 5 x 0.75	5 x 5 x 0.75

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Efficient and Compact Load Switch Solutions for Modern Designs

- Unmatched power efficiency and space-saving advantages for sustainability-focused designs
- Vishay load switches redefine efficiency, reliability, and design simplicity for power-critical applications

Part Type	eFuse switch	eFuse switch	Smart load switch	OR-ing switch
Part Number	SiC32311E	SiP32437A/B	SIP32431/2	SiC32201
Description	60 A, 4.5 V to 25 V, 0.6 mΩ, hot-swap eFuse, IMON, GOK, D_OC report latch on fault	8 A, 2.7 V to 23 V, 9.2 mΩ eFuse with transient overcurrent blanking, adjustable OVP, and circuit breaker	1.5 V to 5.5 V, 105 mΩ, 10 pA IQ, bidirectional off isolation, EN active high, ultra low leakage and quiescent current load switch with reverse blocking	0.45 mΩ, integrated OR-ing switch with OR-ing controller, lossless current sense, and temperature report
Applications	Cloud computing, disk drives, and communication networks	Computing, networking and data storage, and healthcare and patient monitoring devices	Sensors, meters, instruments, and IoT applications	Power supplies, computing, and networking
Comment	Common pinout. Vishay offers more than 10 % lower $R_{DS(on)}$ versus the competition for better efficiency, while supporting the highest voltage tolerance for reliability	One of the most compact and efficient eFuses in a 2 mm x 2 mm package, while providing comprehensive control and protection	Lowest quiescent current and leakage, resulting in lower power consumption and longer battery life	First and only integrated solution including OR-ing and current sensing. This saves significant solution size, component count, and improves efficiency by nearly 50 %
	Parallelable	Single	Single	Parallelable
Slew Rate Time (µs)	Adjustable	Adjustable	140	-
On Delay Time (µs)	1000	655	20	-
V_{IN} Min. (V)	4.5	2.7	1.5	9
V_{IN} Max. (V)	25	23	5.5	18
$R_{DS(on)}$ at V_{IN} Min. (mΩ)	0.6	14	350	
$R_{DS(on)}$ at V_{IN} Max. (mΩ)	0.6	9.5	105	0.45
Quiescent Current at Input Voltage Min. (µA)	2100	400	0.000	
Quiescent Current at Input Voltage Min. (µA)	2800	400	0.000	1800
Output Discharge (Y / N)	Yes	No	No	No
Reverse Blocking (Y / N)	No	No	Yes	Yes
Cont. Current (A)	60	8	1.4	100
Package	PowerPAK® MLP32-55	TDFN10-22	TDFN4 SC-70-6	PowerPAK® MLP66-40L
Package Size (W, L, H) (mm)	5 x 5 x 1	2 x 2 x 0.75	1.2 x 1.6 x 0.5 2.0 x 2.0 x 0.5	6.0 x 6.0 x 0.75

SiC32311E: enhanced current capability and safety for server and high performance computing applications

- Parallel operation supported: enables scalable high current designs
- Ultra low resistance: optimized for high efficiency and maximum current capability

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- Moderate overcurrent blanking: 2.3 ms OCP blanking time supports demanding load transients
- Enhanced startup handling: higher inrush and startup current tolerance
- Robust power path design: high tolerance to inductive supply paths
- Superior voltage handling: 25 V DC input tolerance, compared to 20 V from competing solutions

SiP32437: compact and efficient for computing and industrial applications

- Integrated protection features: include overcurrent, short-circuit, overtemperature, and undervoltage lockout protection
- High current density: supports up to 8 A continuous current in a compact 2 mm × 2 mm package
- Low on-resistance: minimizes conduction loss and improves system efficiency
- Space-saving design: ideal for space-constrained applications requiring robust load switching

SiP32431 / SiP32432: optimized for ultra low power and space-constrained applications

- Ultra low power consumption: designed for minimal quiescent and leakage current
- Single-rail compatibility: supports always-on systems with single power rail architectures
- Industry-leading efficiency: up to 2000× lower operating current than competing solutions
- Compact form factor: space-saving TDFN4 package ideal for portable and battery-powered applications

SiC32201: industry's first fully integrated power OR-ing solution with current reporting for 12 V systems

- Integrated low resistance OR-ing FET: 0.45 mΩ for high efficiency 12 V rail operation
- Precision analog telemetry: real-time, dynamic current reporting improves system control
- Compact solution size: up to 70 % smaller than discrete implementations
- Lossless current sensing: reduces power loss by ~50 % compared to resistive sensing
- Enhanced reliability: fast dynamic response and robust fault handling
- On the fly health diagnostics: supports real-time status monitoring and preventive maintenance

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The DNA of tech.

High Precision, Energy-Efficient Analog Switches and Multiplexers for Sustainable Designs

- DG1411/2/3E analog switches and DG408LE/409LE multiplexers optimize power efficiency and precision
- Ultra low on-resistance and low leakage currents minimize signal loss and power dissipation
- Analog switches:
  - 1.5 Ω on-resistance, supports ± 15 V / +12 V / ± 5 V operation
  - Quad SPST configuration for precise signal control
- Multiplexers:
  - 16-channel / dual 8-channel CMOS design
  - Supports 12 V to 44 V single supply for flexible integration
- Ideal for medical, communication, and industrial applications
- Compact designs reduce PCB footprints and lower system power consumption

Part Type	Analog switch	Analog multiplexer
Part Number	DG1411/2/3E	DG408LE and DG409LE
Description	1.5 Ω on-resistance, ± 15 V / +12 V / ± 5 V, quad SPST switches	17 Ω on-resistance, ± 12 V / +5 V / ± 3 V, 8-channel / dual 4-channel analog multiplexer
Applications	For precision circuits in medical equipment, control automation, or power grids. Fast data acquisition rate. Faster running system and less energy consumption	For test equipment, meters, instrumentation, medical equipment, relay replacement, and many other applications
Comment	Fast data acquisition rate. Faster running system and less energy consumption	Pin-compatible with generic DG408/409 with low $R_{DS(ON)}$ of 17 Ω
Configuration	SPST x 4, NC	8:1 x 1
Single Supply Min. (V)	4.5	3
Single Supply Max. (V)	24	16
Dual Supply Min. (V)	4.5	3
Dual Supply Max. (V)	15	8
On-Resistance (Ω)	1.5	17
Is(off) Max. (nA)	12	1
t_{ON} Max. (ns)	140	72
$Q_{IN}J$ Typ. (pC)	-41	-11
XTALK & OIRR (dB)	-104	-98
$C_{D(ON)}$ (pF)	87	—
$C_{S(OFF)}$ (pF)	24	5.5
-3 dB Bandwidth (MHz)	150	—
Package	QFN-16 4x4	QFN-16 (3 mm x 3 mm), TSOP-16, SO-16

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