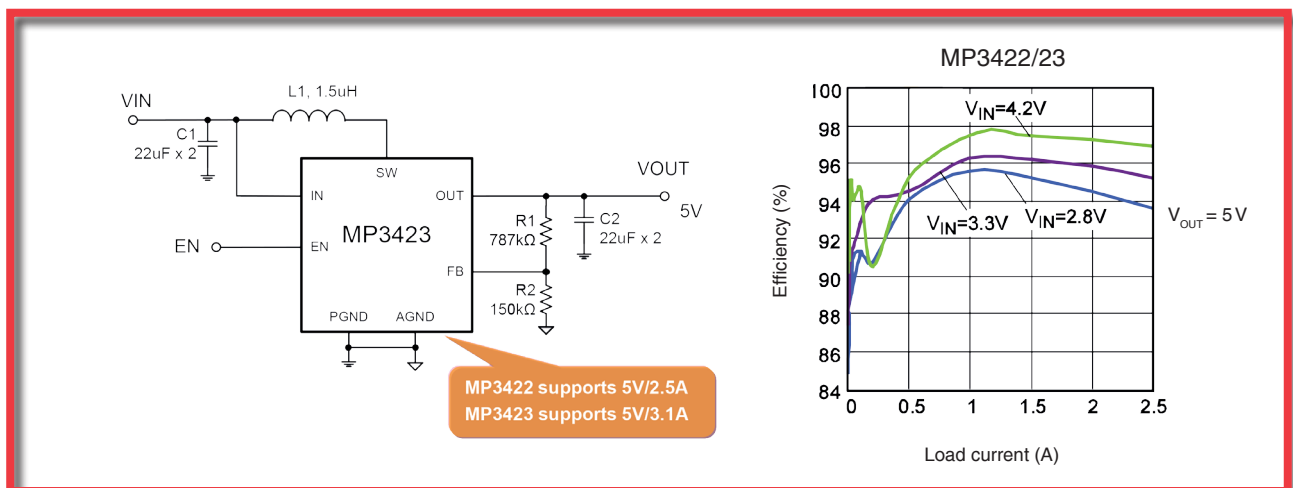


endrich news

www.endrich.com

Our Product of the Month High Efficiency Boost Converters with Output Disconnect



High efficiency high current boost converters with output disconnect

Support up to 5V/3.1A load from 2.8V battery voltage

Up to 98% efficiency to prolong battery life

Very good thermal performance due to low power loss

Advanced output short circuit protection

Small size solution from package and component count

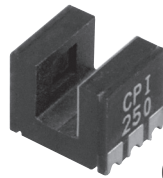
Active Components – MPS Converters



SMD-PHOTOINTERRUPTERS – CPI-210 / CPI-250



CPI-210



CPI-250

The photointerrupters **CPI-210** and **CPI-250** are designed for surface mounting. They have excellent characteristics to detect rotation or linear movement of an object. The type CPI-210 has built-in one IR-diode and one phototransistor, the type CPI-250 has one diode and two phototransistors. This allows to detect the direction of movement of the barrier within the gap.

ABSOLUTE MAXIMUM RATING

- » power dissipation: 37.5 mW
- » forward current: 25 mA
- » pulse forward current: 100 mA
- » reverse voltage: 5 V
- » collector dissipation: 75 mW
- » collector current: 20 mA
- » voltage between collector and emitter: 20 V
- » voltage between emitter and collector: 5 V
- » operating temperature range: -30 °C ... +85 °C
- » storage temperature range: -40 °C ... +90 °C

APPLICATIONS

- » position detection of a printer head or the film in a camera
- » position sensor for the drive unit of a camera lens
- » to detect the linear movement of a barrier
- » for all types of encoder applications
- » as contactless switch

ELECTRO-OPTICAL CHARACTERISTICS

INPUT

- » forward voltage ($I_F=5$ mA): 1.1 V typ./1.3 V max.
- » reverse current ($V_R=5$ V): 10 μ A max.
- » capacitance between terminals: 30 pF typ.
- » forward voltage ($I_F=20$ mA): 940 nm typ.

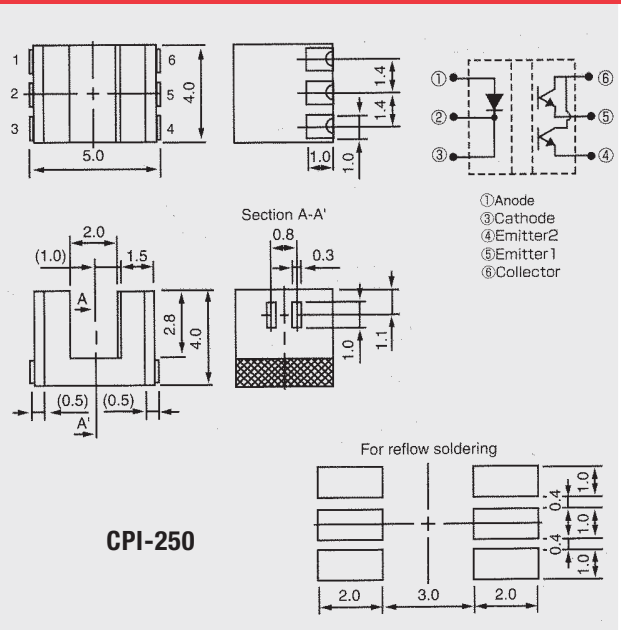
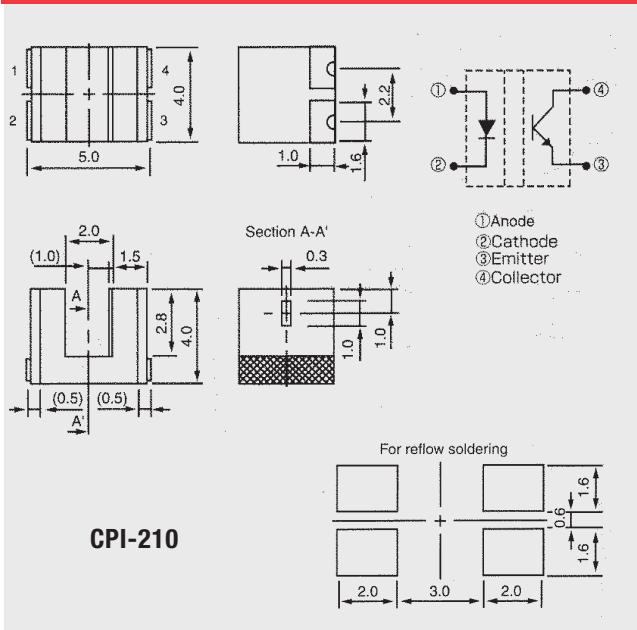
OUTPUT

- » collector dark current: 0.1 μ A max.
($V_{CE}=10$ V)

COUPLING CHARACTERISTICS

- » light current ($V_{CE}=5$ V, $I_F=5$ mA): 50 μ A min../150 μ A typ.
- » rise time/fall time: 10 μ s
($V_{CE}=5$ V, $I_C=100$ μ A, $R_L=1$ k Ω)

DIMENSIONS (mm)



DRIVERS FOR HIGH POWER LED/INDOOR – UPDATE



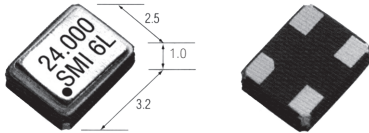
With our leading manufacturer Lumotech we have the best concerted drivers for all our LEDs, suitable for the most diverse indoor applications. Whether 5 Watt driver or 100 Watt driver with adjustable output current between 350 mA and 2800 mA or drivers with 2-channel output, ideal for spot lights using 2 LEDs, or low-cost versions for cost-sensitive applications, which only require one fixed constant current output without dimming—we have the suitable driver for you. More information and data sheets can be found at: http://www.endrich.com/de/182084/indoor?prodnv=6_181441_182084

Advantages of the indoor drivers

- » 5 years warranty
- » ENEC approval
- » Design and manufacturing in Europe
- » Only use of traceable components from Europe, Japan and USA
- » All wattage groups also with enhanced output voltage level of more than 40Volts
- » Dimming level down to 1% at the 20 Watt drivers
- » Lowest inrush current available on the market
- » Ripple current below 10%
- » EMC-optimized, testing also conducted in installed state with metal housing
- » Customized solutions possible
- » No switch-off when reaching the maximum temperature, but current reduction

PART NUMBER	POWER	OUTPUT VOLTAGE RANGE	CURRENT RANGE	CONSTANT VOLTAGE MODE	INPUT VOLTAGE	DIMMABLE
L05050	6.5 W	3 ... 12 V _{DC}	700 mA		100 ... 240 V _{AC}	no
L05150	5.5 W	3 ... 16 V _{DC}	350 mA		100 ... 240 V _{AC}	no
L05020	12 W	3 ... 32 V _{DC}	350/700 mA		110 ... 240 V _{AC}	no
L05020-500	12 W	3 ... 24 V _{DC}	500/700 mA		110 ... 240 V _{AC}	no
L05020-40250	12 W	20 ... 43 V _{DC}	200/250 mA		110 ... 240 V _{AC}	no
L05020-390	12 W	3 ... 32 V _{DC}	270/390 mA		110 ... 240 V _{AC}	no
L05020-40300	12 W	20 ... 43 V _{DC}	180/300 mA		110 ... 240 V _{AC}	no
L05021	12 W	3 ... 32 V _{DC}	350/700 mA		230 ... 240 V _{AC}	Mains, trailing edge
L05021-40250	12 W	20 ... 40 V _{DC}	200/250 mA		230 ... 240 V _{AC}	Mains, trailing edge
L05021-40300	12 W	20 ... 40 V _{DC}	180/300 mA		230 ... 240 V _{AC}	Mains, trailing edge
L05011i2	20 W	6 ... 42 V _{DC}	150 ... 1200 mA	6 ... 42 V _{DC}	180 ... 240 V _{AC}	1-10 V, potmeter, pulse
L05011i3	24 W	6 ... 42 V _{DC}	200 ... 1200 mA		180 ... 240 V _{AC}	1-10 V, potmeter
L05011i4	24 W	6 ... 42 V _{DC}	200 ... 1200 mA		180 ... 240 V _{AC}	Pulse
L05012	20 W	3 ... 33 V _{DC}	350 ... 1400 mA		115 ... 240 V _{AC}	no
L05013	20 W	3 ... 33 V _{DC}	700 mA		115 ... 240 V _{AC}	no
L05013-40500	20 W	3 ... 40 V _{DC}	500 mA		115 ... 240 V _{AC}	no
L05013-48350	20 W	3 ... 48 V _{DC}	350 mA		115 ... 240 V _{AC}	no
L05013-1050	20 W	3 ... 24 V _{DC}	1050 mA		115 ... 240 V _{AC}	no
L05013-1200	20 W	3 ... 24 V _{DC}	1200 mA		115 ... 240 V _{AC}	no
L05016i	20 W	3 ... 33 V _{DC}	Output 1/2: je 250...500 mA		110 ... 240 V _{AC}	1-10 V, potmeter, pulse
L05016Ci	20 W	3 ... 43 V _{DC}	110 ... 500 mA		110 ... 240 V _{AC}	1-10 V, potmeter, pulse
L05016CiD	20 W	3 ... 45 V _{DC}	Output 1/2: je 100...300 mA		110 ... 240 V _{AC}	1-10 V, potmeter, pulse
L05030	20 W	3 ... 22 V _{DC}	350/700 mA	4 ... 24 V _{DC}	24 ... 32 V _{AC}	no
L05035	20 W	3 ... 30 V _{DC}	Output 1/2: je 350 mA		12 ... 32 V _{AC}	1-10 V, potmeter
L05025	30 W	7 ... 42 V _{DC}	100 ... 1000 mA		110 ... 240 V _{AC}	DALI
L05031	30 W	6 ... 43 V _{DC}	100 ... 1400 mA		110 ... 240 V _{AC}	1-10 V, potmeter
L05040	40 W	7 ... 55 V _{DC}	100 ... 1000 mA		110 ... 240 V _{AC}	DALI
L05044	40 W	12 ... 32 V _{DC}	300 ... 1400 mA		110 ... 240 V _{AC}	no
L05045	40 W	12 ... 32 V _{DC}	300 ... 1400 mA		110 ... 240 V _{AC}	1-10 V, potmeter
L05046	40 W	24 V _{DC}	max. 1700 mA	24 V _{DC}	110 ... 240 V _{AC}	no
L05049-601000	40 W	22 ... 60 V _{DC}	245 ... 1050 mA		110 ... 240 V _{AC}	1-10 V, potmeter
L05060	100 W	20 ... 60 V _{DC}	350 ... 2800 mA		110 ... 240 V _{AC}	1-10 V, potmeter

HF-CMOS OSCILLATOR WITH EXCELLENT TEMPERATURE STABILITY



- 22SMOHGU:** 2.5 × 2.0 × 0.9 mm³
- 32SMOHGU:** 3.2 × 2.5 × 1.0 mm³
- 52SMOHGU:** 5.0 × 3.2 × 1.0 mm³

FEATURES

- » Low phase noise oscillators
- » ±3 ppm temperature stability available over -40°C to +85°C (aging/voltage change/load change/tolerance +25°C are not included)
- » Overall tolerance of ±10ppm, ±15ppm and ±20ppm available (inclusive of temperature stability/aging/voltage change/load change/tolerance at +25°C)
- » CMOS output waveform
- » Available packages: 2520, 3225, and 5032 with 4 pads
- » Frequency range: 55 MHz up to 160 MHz
- » V_{DD} = 3.3V to +1.8V available

SMI INC. are pleased to introduce their new CMOS Oscillators dedicated for high frequency application with ultra low stability over temperature range.

The oscillators 22SMOHGU, 32SMOHGU and 52SMOHGU are available in frequency range 55 MHz to 160 MHz with a tight temperature stability of ±3 ppm over the full temperature range from -40°C up to 85°C. The overall tolerance of ±10 ppm, ±15 ppm and ±20 ppm include temperature stability, aging, voltage change, load change and tolerance at 25°C.

Current oscillators are designed with low frequency oscillator and an internal PLL in order to generate high frequencies. Thanks to a new IC in combination with the special high frequency fundamental crystal, the engineers of SMI are able to extend the frequency range for the xxSMOHG series 4 MHz~55 MHz up to 160 MHz without the need of an internal PLL.

This reduces the weight, space, and electric consumption of the component.

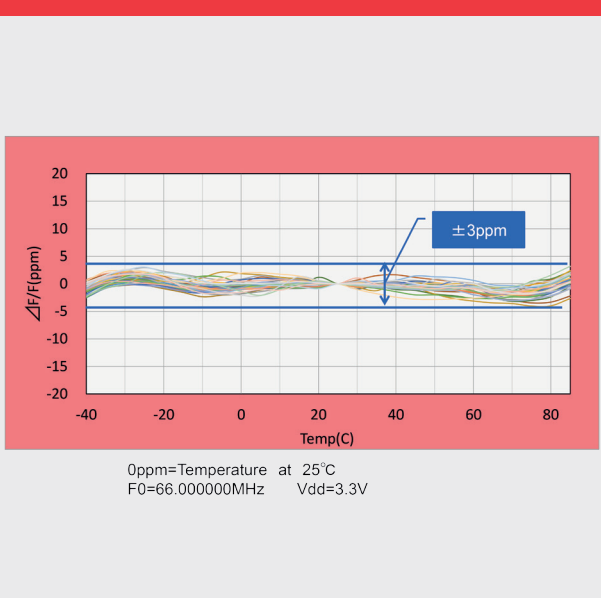
APPLICATIONS

Low phase noise oscillators suitable for wireless LAN and other applications where low phase noise and tight stability are required.

SPECIFICATIONS

PARAMETER	22SMOHGU 32SMOHGU 52SMOHGU
Input voltage V _{DD}	(+1.8V), +2.5V, +3.0V +3.3V DC ±10%
Frequency range	55 MHz ... 160 MHz
Overall tolerances	±20 ppm, ±15 ppm, ±10 ppm
Operating/storage temperature	-40°C ... +85°C
Input current	20 mA max.
Stand-by current	10 µA max.
Output load	CMOS 15 pF max.

TEMPERATURE STABILITY



NEW GENERATION OF AXIAL FAN MOTORS – TYPE R200



NMB Minebea has just launched the “Killer Fan II”, type R200 a member of the “New Generation” of high flow axial fan series.

FEATURES

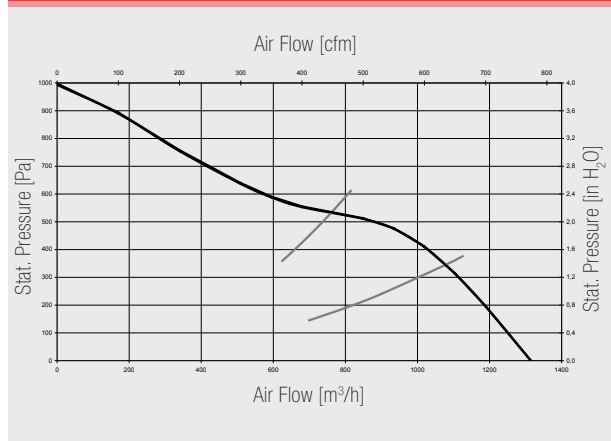
- » Market leading performance for cooling solutions
- » Efficient low power consumption
- » Top efficiency of about 43 %
- » 24V on request
- » Latest three phase motor technology
- » Precision ball bearings
- » One fan of type R200 may replace two common types
- » Excellent price/performance ratio
- » Dimensions: $\varnothing 200 \text{ mm} \times 51 \text{ mm}$
- » PWM speed control, tacho signal – open collector
- » Operating temperature: $-30^{\circ}\text{C} \dots +70^{\circ}\text{C}$
- » Storage temperature: $-40^{\circ}\text{C} \dots +80^{\circ}\text{C}$
- » Expected life: 70.000 h at 40°C
- » Black aluminium casing, black PBT impeller 94V-0

APPLICATIONS

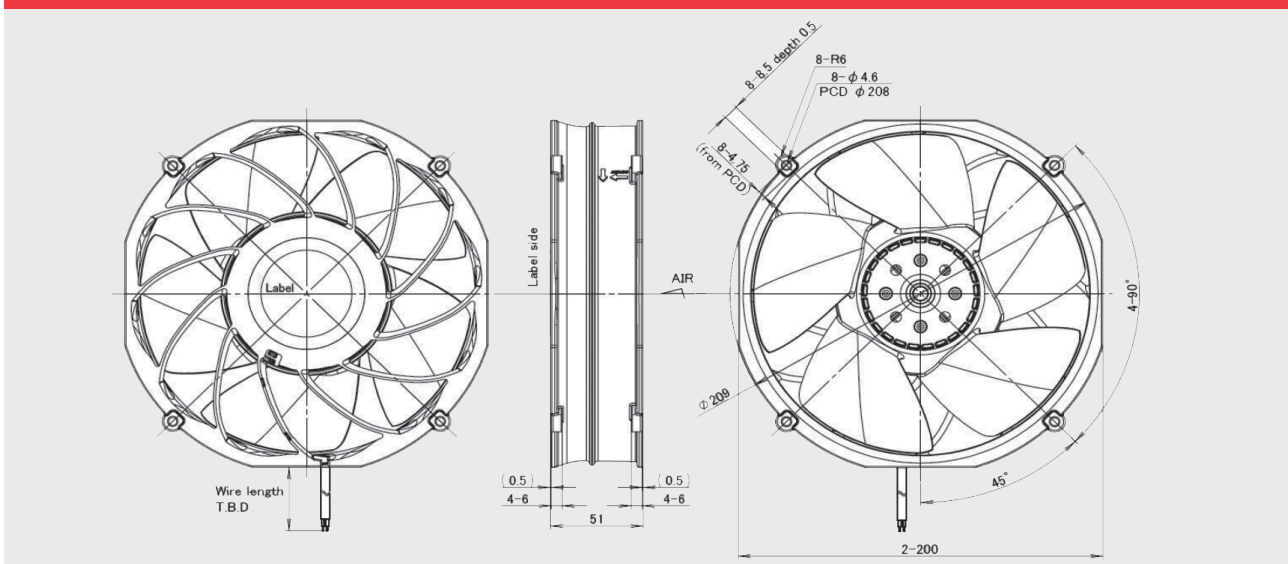
- » Industrial applications
- » Renewable energy technology
- » Medical technology

PARAMETER	R200A0-051-D0760
Nominal voltage	48V
Operating voltage range	30V ... 72V
Nominal current	2.9A
Input power	139W
Speed	6500 rpm
Max. Air flow	1300 m ³ /h (774 CFM)
Max. static pressure	995 Pa (4 Pa in H ₂ O)
Noise	72 dB
Mass	1200 g

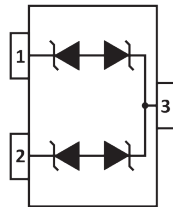
PERFORMANCE CHARACTERISTICS OF KILLER FAN II



DIMENSIONS (mm)



PROTEK DEVICES DEBUTS ESD PROTECTION DIODE FOR CAN BUS



ProTek Devices has introduced a new electrostatic discharge (ESD) protection diode designed for circuit protection in controller area network (CAN) bus lines and other applications. The **PESD1CAN** is able to provide ESD circuit protection of >25 kilovolts for a CAN_HI and CAN_LO bus line. It also provides overvoltage circuit protection against other electrical fast transients (EFT).

The PESD1CAN has a rated stand-off voltage of 24 volts, minimum breakdown voltage of 25.4 volts, and maximum clamping voltage of 70 volts. The new diode is compatible with various IEC standards that include 61000-4-2 (ESD): air 15 kV, contact 8 kV; 61000-4-4 (EFT): 40 A, 5/50 ns; and 61000-4-5 (surge): 3 A, 8/20 micro seconds. The PESD1CAN features 200 watts peak pulse power per line for a typical 8/20 micro second waveshape. It also boasts a low clamping voltage, low capacitance and low leakage current of 0.05 microamperes. The PESD1CAN is also RoHS and REACH compliant.

APPLICATIONS

- » Can Bus protection
- » Automotive applications

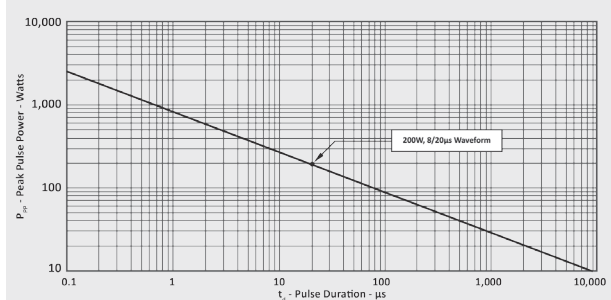
FEATURES

- » Compatible with IEC 61000-4-2 (ESD): Air 15 kV, contact 8 kV
- » Compatible with IEC 61000-4-4 (EFT): 40 A, 5/50 ns
- » Compatible with IEC 61000-4-5 (Surge): 3 A, 8/20 μ s
- » 200 Watts Peak Pulse Power per Line ($t_p = 8/20 \mu$ s)
- » Two lines of protection
- » ESD protection >25 kV
- » Low clamping voltage
- » Low capacitance, low leakage current
- » RoHS complaint, REACH compliant
- » Lead-free pure-Tin plating
- » Solder reflow temperature: 260-270°C
- » Flammability rating UL 94V-0

MAXIMUM RATINGS

PARAMETER	VALUE	UNIT
Operating/storage temperature T_{OPR} / T_{STG}	-55 ... +150	°C
Peak pulse power ($t_p=8/20\mu$ s)	200	W
Peak pulse current ($t_p=8/20\mu$ s)	3	A

PEAK PULSE POWER VS. PULSE DURATION



ELECTRICAL CHARACTERISTICS PER LINE

PART NUMBER	MARKING CODE	RATED STAND-OFF VOLTAGE V_{WM} [V]	MIN. BREAKDOWN VOLTAGE V_{BR} [V] @ 5mA	MAX. CLAMPING VOLT. [V] @ 8/20 μ s, $I_p=3A$	MAX. LEAKAGE CURRENT I_0 [μ A] @ 24V	TYP. CAPACITANCE [pF] @ 0V, 1MHz
PESD1CAN	1AN	24	25.4	70 V @ 3.0 A	0.05	11

6.5 A/9 A, 600 kHz SYNCHRONOUS BOOST CONVERTERS – MP3422/3

MPS' MP3422/23 are industry-leading boost converter with smallest package, highest efficiency, and full protection, including output disconnect, short-circuit and thermal. With efficiency as high as 98% at 4.2V_{in}/5V_{out}, these devices are excellent for battery-operated applications.

The MP3422/3 are high-efficiency, synchronous, current-mode, step-up converter with output disconnect. They can start up from an input voltage as low as 1.9V while provide inrush current limiting, and output short-circuit protection. The integrated, P-channel, synchronous rectifier improves efficiency and eliminates the need for an external Schottky diode. The PMOS disconnects the output from the input when the part shuts down. The 600kHz switching frequency allows for small external components, while the internal compensation and the soft-start minimize the external component count.

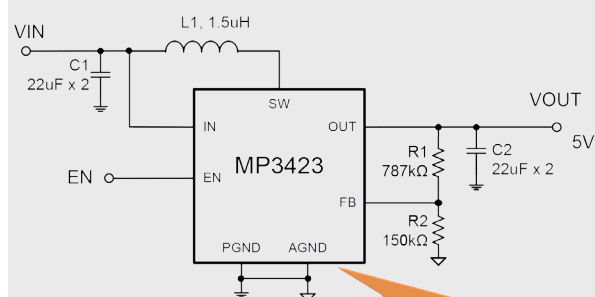
ADVANTAGES

- » Support up to 5V/3.1A load from 2.8V battery voltage
- » Up to 98% efficiency to prolong battery life
- » Very good thermal performance due to low power loss
- » Advanced output short circuit protection
- » Small size solution from package and component count

APPLICATIONS

- » Tablet PCs
- » Power Banks
- » Wireless motion detectors/sensors
- » PDA
- » POS Systems
- » Electro-Cigarette
- » GSM/GPRS Modules
- » Personal Medical Devices

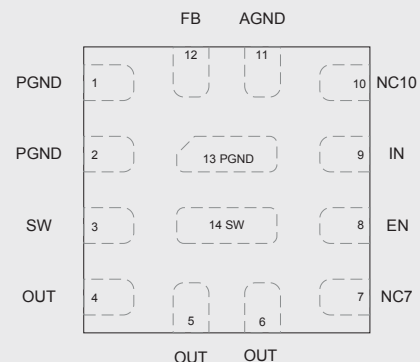
BASIC APPLICATION CIRCUIT



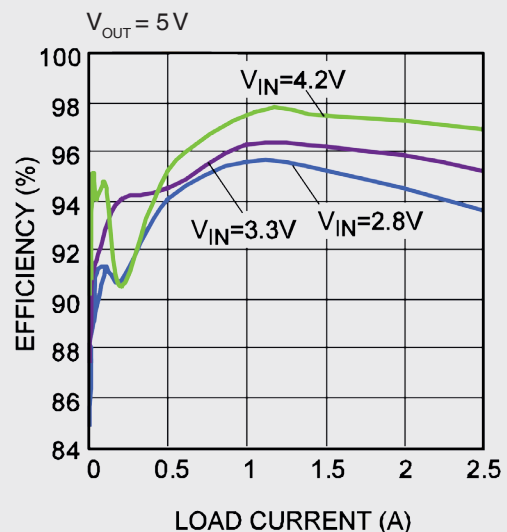
FEATURES

- » 1.9V to 5.5V Input Work Range
- » 2.5V to 5.5V Output Range
- » Internal Synchronous Rectifier
- » 600 kHz Fixed Frequency Switching
- » >6.5A Current Limit for MP3422
- » 9A Current Limit for MP3423
- » 43 μA Quiescent Current
- » High Efficiency over Full Load Range
- » Internal Soft-start and Compensation
- » True Output Load Disconnect from Input
- » OCP, SCP, OVP and OTP Protection
- » Small QFN2x2-14 Package

PIN ASSIGNMENT

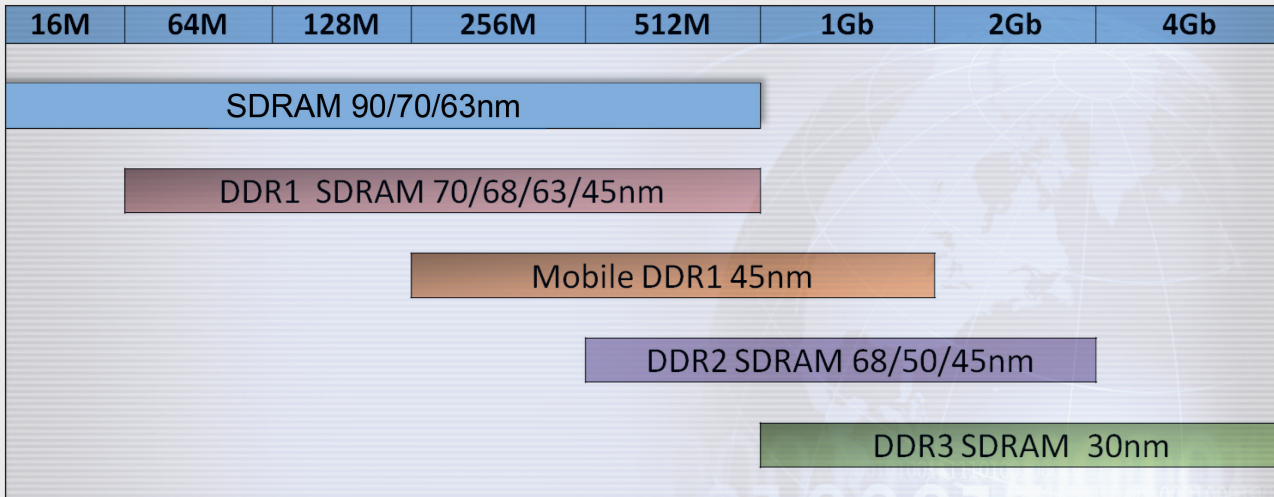


EFFICIENCY VS. LOAD CURRENT

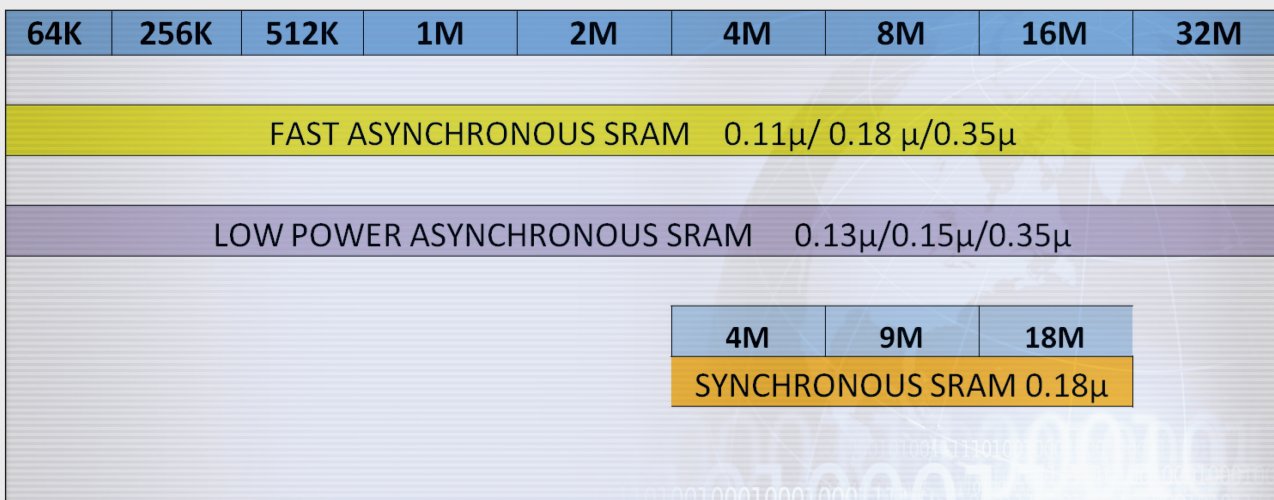


ALLIANCE MEMORY – PRODUCT TECHNOLOGY COVERAGE

DRAM FAMILY



SRAM FAMILY



new

Contact for information: Mr. Kinn · Tel. +49(0)7452-6007- 21 · e-mail: d.kinn@endrich.com

HEADQUARTERS

ENDRICH Bauelemente Vertriebs GmbH · P.O.Box 1251 · D-72192 Nagold
 T +49 (0) 7452 6007-0 · F +49 (0) 7452 6007-70
 endrich@endrich.com · www.endrich.com



SALES OFFICES IN EUROPE

France:

Angers: T +33/2 41 80 33 54 · v.rousseau@endrich.com
 Paris: T +33/1 46 05 99 13 · e.cosperec@endrich.com

Austria & Slovenia

Vienna: T +43/1 66 52 52 521 · a.schwaha@endrich.com

Hungary/Bulgaria:

Budapest: T +361 / 2 97 41 91 · z.kiss@endrich.com

Switzerland – Novitronic:

Zurich: T +41/44 306 91 91 · info@novitronic.ch

Spain:

Barcelona: T +34/93 217 31 44 · spain@endrich.com