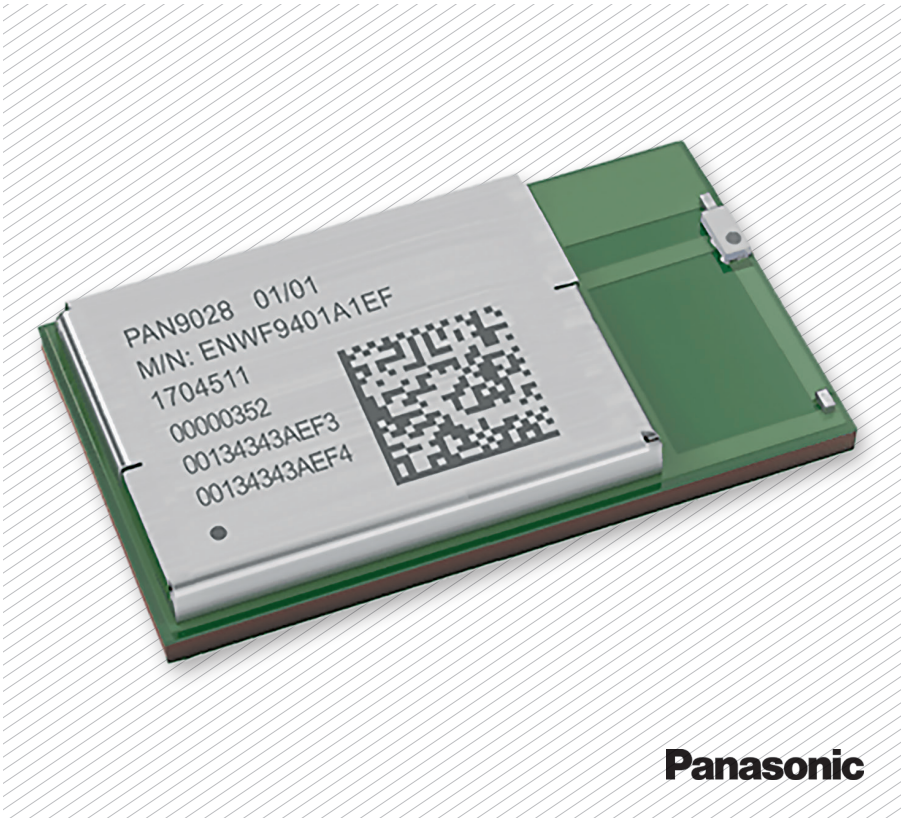
07&08/2023

endrich NEWS

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OUR PRODUCT OF THE MONTH

PAN9028 WI-FI/BLUETOOTH COMBO MODULE



- ☑ Developed for highly integrated and low-cost applications
- ☑ Integrated power management
- ☑ Maximum flexibility in connectivity

Read more on page 2

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PAN9028 WI-FI/BLUETOOTH COMBO MODULE

The PAN9028 is a dual-band 2.4 GHz and 5 GHz 802.11 a/b/g/n/ac wireless LAN radio with embedded Bluetooth BR/EDR/Low Energy (LE), developed for highly integrated and low-cost applications.

Integrated power management, a fast dual-core CPU, support for the 802.11i security standard, and high-speed data interfaces deliver the performance that meets the speed, reliability, and quality demands of next generation products.

The integration of Wi-Fi and Bluetooth wireless connectivity enables high throughput applications for industrial devices and appliances. The combination of Wi-Fi and Bluetooth provides maximum flexibility in connectivity.

With the PAN9028 WLAN connection, it can be seamlessly integrated into your existing home network for remote control and performance tracking. Additional Bluetooth technology can be easily configured via your smartphone. The PAN9028 has an optimized integrated chip antenna that simplifies hardware design.

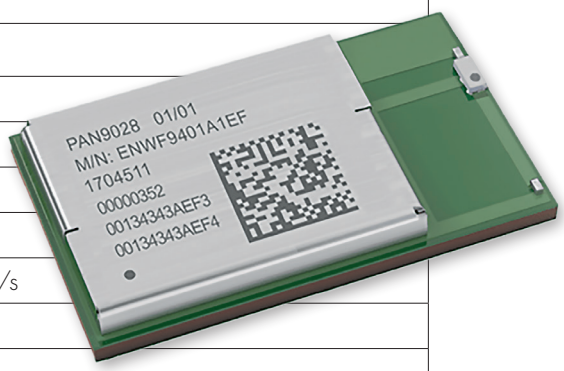
APPLICATIONS

- Smart Home
- Building Automation
- Smart Factory
- Energy Management

FEATURES

- Dual simultaneous and independent WLAN and Bluetooth operation
- Includes PMIC to simplify hardware design and reduce BOM cost
- Performance charts stored on OTP for hassle-free final certification
- Certified external antenna for use in radio-unfriendly enclosures
- Ability to switch between chip antenna and ground pad

SERIES	PAN9028
Status	Mass Production
Part Number	ENWF9408A1EF (with PMIC); ENWF9408A2EF (without PMIC)
RF Category	Wi-Fi 5 Radio 2.4 GHz & 5.0 GHz 802.11a/b/g/n/ac & Bluetooth 5.2 (BR,EDR,LE)
Software & Drivers	Linx & I.MX RT Support
Integrated Circuit	88W8987
Size [MM]	24.0 x 12.0 x 2.8
RX Sensitivity [DBM]	-98 @ 1M-DSSS
TX Power (max.) [DBM]	+98 @ IEEE 802.11b
Power Supply [V]	3.3 with PMIC; 1.1, 1.8, 3.3 without PMIC
Current Consumtion	Tx: 320 mA @ 11 Mb/s; Rx: 60 mA @ 11 Mb/s
Sleep Mode Current	Power Down Mode: 150 µA
Interfaces	GPIO, SDIO 3.0, HSUART, PCM
Microcontrollers and Memory	88PG823 Power Management IC (PMIC)
Operating Temp. [°C]	-30 to +85
Evaluation Kit	ENWF9408AVEF (mSD Adapter); ENWF9408AZEF (i.MX Kit)



Panasonic

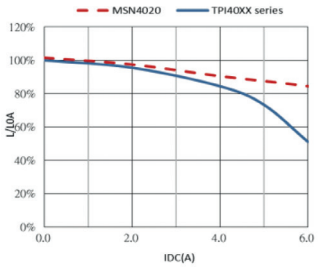
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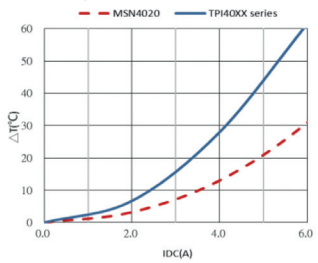
NEXT GENERATION SEMI SHIELDED POWER INDUCTOR MSN4020-L SERIES

ABC Taiwan Electronics Corp, short ATEC, released the next generation semi shielded power choke. Traditional inductors with ferrite core commonly use Ni-Zn as magnetic material. To respond the market demand of many modern applications that require power chokes with a higher current handling capability, ABC developed the new MSN4020-L series to upgrade their popular series of semi shielded power chokes. By using this material, Isat and Irms performance is improved up to 30%, keeping the same dimension and footprint. MSN4020-L series has passed all AEC-Q200 tests and is also recommended for use in automotive applications.

Inductance VS Current



Temperature VS Current



APPLICATIONS

- DC/DC converters
- Automotive BCM and ECU
- Industrial applications
- Consumer products and building automation

FEATURES

- Metal alloy core material result in 30% higher Isat and IRMS
- Semi shielded construction for excellent EMI
- No rust after salt spray and steam test
- 100% machine made and AEC-Q200 qualified

PART NUMBER	INDUCTANCE (µH)	RDC (MΩ) MAX.	ISAT (A) TYP	IRMS (A) TYP
MSN4020R22YLB-DE2	0.22 ± 30 %	11	21,2	10,5
MSN4020R47YLB-DE2	0.47 ± 30%	17	12,3	7,5
MSN40201R0YLB-DE2	1.00 ± 30%	21	10,8	6,5
MSN40201R5MLB-DE2	1.50 ± 20%	26	9,3	6,1
MSN40202R2MLB-DE2	2.20 ± 20%	37	7,8	5,7
MSN40203R3MLB-DE2	3.30 ± 20%	49	6,3	4,3
MSN40204R7MLB-DE2	4.70 ± 20%	72	5,4	0,8
MSN4020R68YLB-DE2	0.68 ± 30%	108	4,5	2,9
MSN40206R8MLB-DE2	6.80 ± 20%	154	3,7	2,4
MSN4020100MLB-DE2	10.0 ± 20%	216	2,5	2,2
MSN4020150MLB-DE2	15.0 ± 20%	370	2,2	1,6
MSN4020330MLB-DE2	33.0 ± 20%	425	2	1,4
MSN4020220MLB-DE2	22.0 ± 20%	720	1,7	1,15
MSN4020470MLB-DE2	47.0 ± 20%	990	1,4	0,95
MSN4020101MLB-DE2	100.0 ± 20%	2150	0,7	0,6



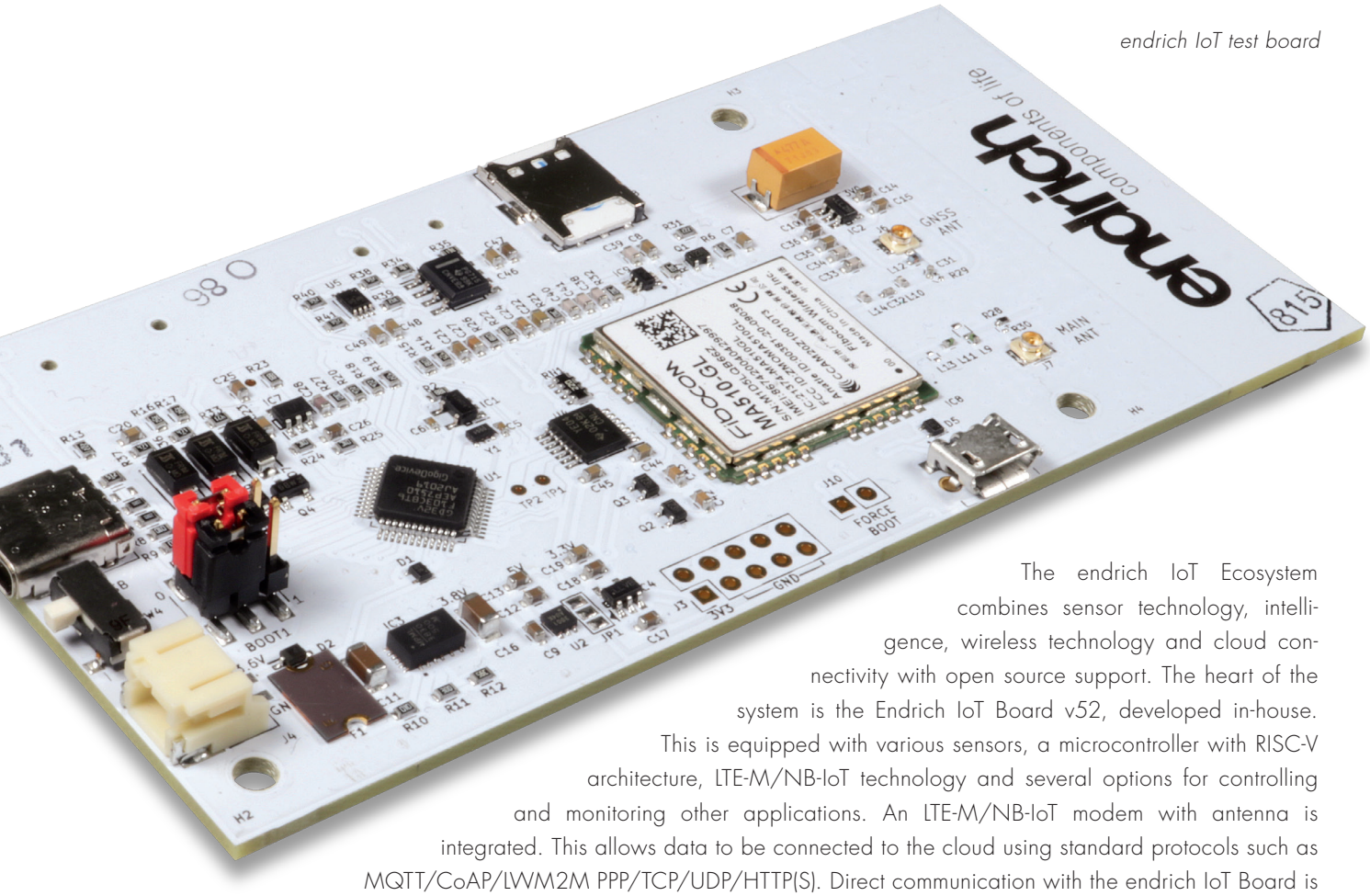
Semi Shielded Power Inductors

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IoT ECOSYSTEM FOR SMART AND CONNECTED APPLICATIONS

With its IoT Ecosystem, endrich GmbH has developed a concept for intelligent and networked applications to cover the basics of IoT and to provide customers with an easy entry into the world of IoT.



endrich IoT test board

The endrich IoT Ecosystem combines sensor technology, intelligence, wireless technology and cloud connectivity with open source support. The heart of the system is the Endrich IoT Board v52, developed in-house. This is equipped with various sensors, a microcontroller with RISC-V architecture, LTE-M/NB-IoT technology and several options for controlling and monitoring other applications. An LTE-M/NB-IoT modem with antenna is integrated. This allows data to be connected to the cloud using standard protocols such as MQTT/CoAP/LWM2M PPP/TCP/UDP/HTTP(S). Direct communication with the endrich IoT Board is possible via I²C, SPI & GPIO and UART.

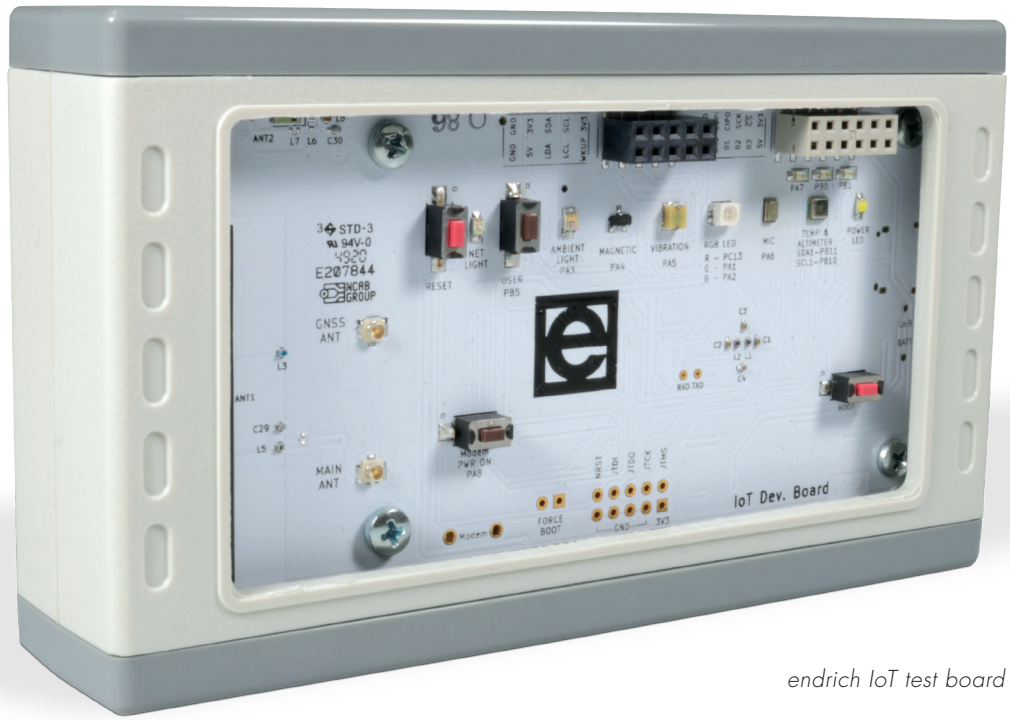
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NEWS

IoT ECOSYSTEM FOR SMART AND CONNECTED APPLICATIONS

The endrich IoT Board collects and processes a wide range of data. The vibration sensor detects vibrations in order to signal a machine run, detect the engine start or generally monitor an engine run. It can also be used to detect rain or the intrusion of people into a building. The air pressure sensor is suitable for height measurement, also to detect height differences in the centimetre range. Another sensor measures the fan speed or records the speedometer signal. The ALS sensor, which operates in the sensitivity range of the human eye, detects light and dark conditions and measures the visible light intensity. GNSS coordination can be used to determine the physical location of the unit or to track a unit. Ambient temperature is measured via a temperature sensor.



endrich IoT test board with housing

The Endrich cloud database is available for data visualisation and evaluation. The UDP cloud data is displayed in a messaging log as well as in a customised visualisation tool. The cloud database can be used freely for testing purposes during development. With external partners, it is planned to expand the offer and provide different cloud databases, e.g. based on MQTT, with different visualisation options. Larger cloud systems such as Azure or AWS are also supported in order to integrate IoT solutions into existing platforms.

All information is available free of charge at https://e-iot.info/

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HIGH-RELIABLE 480/960 W 3-PHASE DIN RAIL POWER SUPPLIES

LTF Series



LITF480-26B24

LITF960-26B24

- ☑ DC OK function
- ☑ 60 °C full load without derating
- ☑ 150 °C oeak load capability
- ☑ OVC III (EN61010) LITF960
- ☑ 3-Phase input voltage (Up to 600 VAC, and 2-phase available)
- ☑ Supporting parallel (2+1 current sharing) and series application

MORNSUN's high reliable 3-phase DIN rail power supplies of the LITF series are launched to meet a rapidly rising market demand for high-end applications. These products cover power of 480 W and 960 W, and provide output voltages of 24, 36, and 48 V.

The LITF480-26Bxx and LITF960-26Bxx series feature cost-effectiveness, high efficiency (up to 95.6 %), can be used in highly polluted environments (comply with ANSI/ISA 71.04-2013 Level G3), low standby power consumption, and high isolation voltage up to 4000 VAC.

The thoughtful designs come with an one-piece screw terminal for a secure installation, hexagonal hole perforated design to expand the heat dissipation area, a status LED showing the work status clearly and metal buckles at the back to support forward/reverse mounting. These series complies with IEC/EN/UL/BSEN62368, UL/EN61010, UL508 standards.

APPLICATIONS

- EV charging station
- Nuclear power
- Wind power
- Petrochemical
- Metallurgical
- Other high-end/precision manufacturing fields

FEATURES

- Wide input voltage range: 3x320-600VAC/450– 800VDC
- Efficiency up to 95.6%
- Operating temperature range: -30°C to +70°C, 60°C @100% load without derating
- Safety according to ANSI/ISA 71.04-2013 G3 anticorrosion test
- 150% peak load capability
- DC OK function
- High isolation voltage up to 4000 VAC, OVC III
- 3-year warranty, operating altitude up to 5000 m
- Output short circuit, over-current (constant current mode), over-voltage, over-temperature protection
- Active PFC, PF > 0.95
- RS485 communication, remote shutdown (PS ON), supporting parallel (2+1 current sharing) and series applications
- Salt-spray proof, anti-backflow, built-in fuse, and conformal coating protection
- Comply with IEC/EN/UL/BSEN62368, UL/EN61010 and UL508 standards

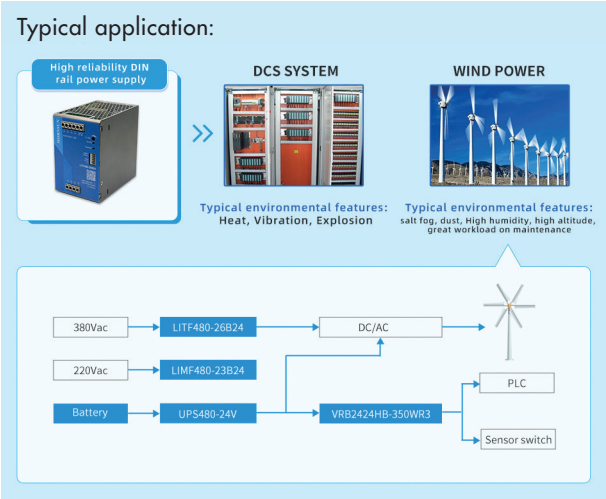
MORNSUN®

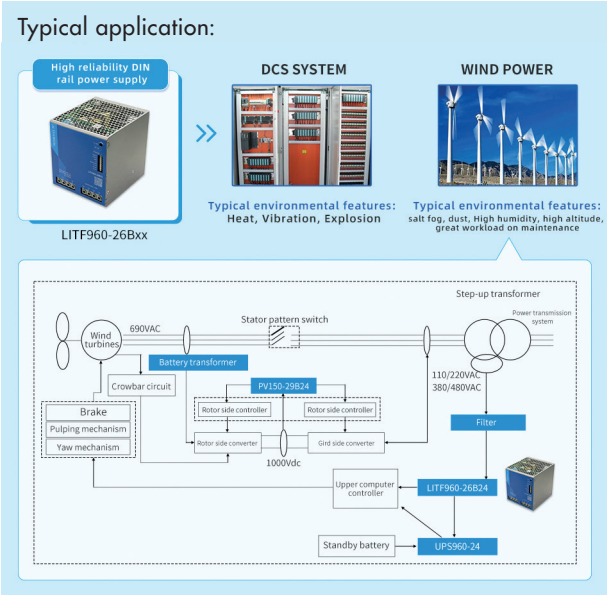
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NEWS

HIGH-RELIABLE 480/960 W 3-PHASE DIN RAIL POWER SUPPLIES

LTF Series





CERTIFICATION	PART NO.	OUTPUT POWER (W)	NOMINAL OUTPUT VOLTAGE & CURRENT (Vo/Io)	OUTPUT VOLTAGE ADJUSTABLE RANGE (V)	EFFICIENCY AT 400 VAC (%)	MAX. CAPACITIVE LOAD (μF)
EN/UL	LITF480-26B24	480	24 V/20 A	24 – 28	95	20000
	LITF480-26B36		36 V/13.3 A	36 – 42	95.3	13000
	LITF480-26B48		48 V/10 A	48 – 56	95.6	10000
EN, UL coming soon	LITF960-26B24	960	24 V/40 A	24 – 28	95.3	40000
	LITF960-26B36		36 V/26.6 A	36 – 42	95.4	20000
	LITF960-26B48		48 V/20 A	48 – 56	95.4	20000

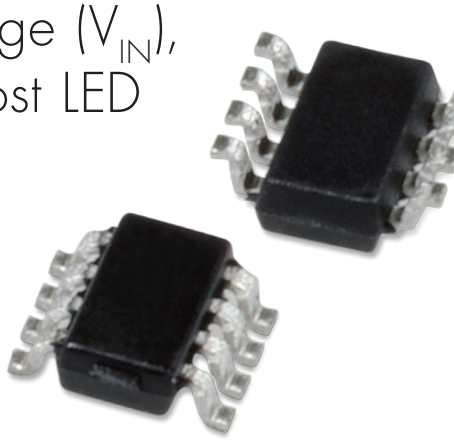
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MP3363 SINGLE-STRING BOOST LED DRIVER

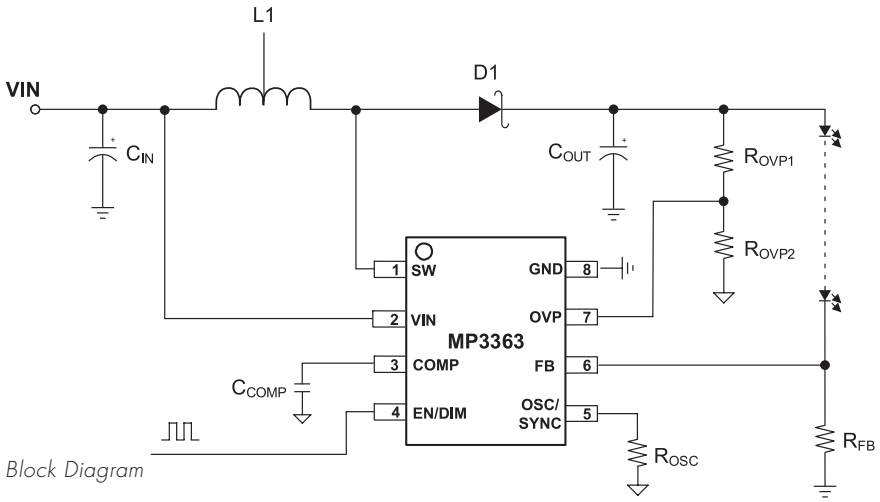
The MP3363 is a 1.8 V to 36 V input voltage (V_{IN}), 36 V output voltage (V_{OUT}), single-string boost LED driver with a 1 A current limit.



The MP3363's feedback voltage can be as low as 0.2 V to promote up to 95 % efficiency for white LED driver applications.

Current mode regulation and external compensation components allow the MP3363 control loop to be optimized across a wide VIN range, and the device supports analog dimming and PWM dimming on the same pin. Robust protections are available to guarantee safety operation. These protections include under-voltage lockout (UVLO), LED short and open protection, and inductor and diode short protection.

The MP3363 is available in TSOT23-8 package, and it is designed to drive two AA powered backlighting, LCD backlighting, thermostats, PDA, and other general lighting applications.



Block Diagram

FEATURES

- 1.8 V to 36 V input voltage range
- 1 A peak current limit
- 0.5 µA shutdown current and 200 mV VFB
- Configurable 200 kHz to 2.2 MHz fSW
- Sync fSW function
- Internal 100 mΩ, 40 V power switch
- 95 % efficiency
- Analog and PWM dimming
- LED short /open, UVLO, OVP, short FB protection

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