

# endrichnews

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We wish you all a Merry Christmas and a Happy New Year. Thank you very much for your trust and for further good cooperation.



## SAFT LSP LITHIUM BATTERIES – WHICH CAPACITOR FOR YOUR IoT APPLICATION?

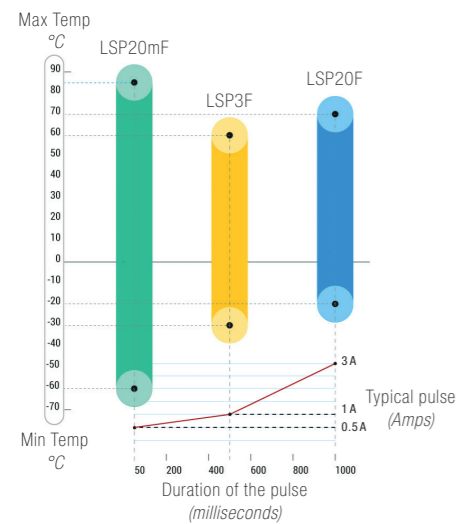
HAVE A LOOK

Capacitors store and release charges to sustain sudden voltage peaks. Combined with lithium batteries, they act as pulse helpers to quickly deliver the high power required by IoT devices.

What are the different capacitances available?

SAFT first created the LSP 3F (3 farad) that features an electro-chemical double layer for water meters that need to transmit regularly at low temperature (-30 °C to +60 °C). But at high temperatures, the solution is limited due to the leak current of this technology (leading to a cell's capacity loss).

After conducting market studies, SAFT realized that customers needed pulse helpers that have a higher capacitance in farads for connected objects that required regular communication and strong – but not too long – pulses. Therefore they created the LSP 20F (20 farads), using a lithium capacitor, a solution that offers better stability at medium temperature (-20 °C +70 °C). SAFT tested it against competitors by accelerating the battery's pulse solicitations and it shows better performance in terms of pulse capability, operating temperature range, and performance stability over its lifetime, as well as the lowest self-discharge and ESR (Equivalent Series Resistance) over temperatures.



PARAMETER	LSP20mF	LSP3F	LSP20F
TYPICAL PULSE	0.5 A	1 A	3 A
DURATION OF THE PULSE	50 msec	500 msec	1 sec
STARTING VOLTAGE	3.66 V		
END VOLTAGE	3 V		
TEMP. RANGE MIN/MAX	-60 °C to +85 °C	-60 °C to +60 °C	-20 °C to +70 °C
TYPICAL COM PROTOCOL	Radio: LoRa	Radio/Cellular: LoRa, Sigfox, LTE-M ...	Cellular: NB-IoT, LTE-M



Some customers also need a solution for applications with lower pulses at temperatures ranging from -60 °C to + 85 °C. They don't want to burden their battery capacity with a bigger capacitor. So SAFT created the LSP 20mF, using an electrolytic capacitor of 20 millifarads (20mF). The LSP 20 mF is particularly useful for applications deployed in higher temperatures. It is also cheaper and offers an excellent price-value ratio. Saft is as of today the only manufacturer offering an electrolytic capacitor battery solution.

## M20 – NEW COST-EFFECTIVE PRESSURE TRANSMITTER FROM MICRO SENSOR

HAVE A LOOK

Micro Sensor has recently launched the new M20 series for general industrial applications. With its high stability and measuring accuracy, this compact pressure transmitter offers an excellent price performance ratio. Moreover, with the M20 pressure transmitter, Micro Sensor has introduced a new, fully automated production line that enables short and flexible production with very high quality.

This manufacturing process is scalable and suitable for small orders as well as mass production. The M20 uses a pressure sensor with the isolating membrane made of stainless steel 316L and special electronics to convert and output standard analog signals. Different pressure measuring ranges (-1 bar... 0 ~ 250 mbar... 400 bar) and threads according to international standards are available.

It also includes a digital temperature compensation and calibration to ensure accuracy ( $\pm 0.25\%$  FS and  $\pm 0.50\%$  FS) in the range of -10 °C to +80 °C. The operating temperature is from -30 °C to +85 °C. Hence the product is perfect for diverse industrial use cases, e.g. water treatment, heat pumps, machinery, power plant, industrial automation and hydraulics.

### FEATURES

- Output: 4 – 20 mA, voltage output
- Pressure range: -1 bar... 0 ~ 250 mbar... 400 bar
- Accuracy:  $\pm 0.25\%$  FS,  $\geq 0.50\%$  FS
- Pressure type: gauge & absolute
- Digital temperature compensated
- High integrated electrical structure
- High cost-effective while achieving high reliability

### APPLICATIONS

- General pressure measurement
- Water treatment
- Heat pumps
- Power plant
- Industrial automation
- Machinery
- Hydraulics



## TAILOR-MADE SOLID STATE LIGHTING SOLUTIONS

Audax Electronics is an original design manufacturer based in Brazil and enables its light engines with the latest technologies.

Using the latest SMD technologies, for a variety of indoor, outdoor, and horticultural applications, it also has a complete electronic manufacturing area to produce your project according to international standards. These projects can cover both electronics and optics, thermal management, and mechanical validation.

PART NUMBER	MODEL	RAD. POWER	POWER
80338000100	COB UVC 19 x 16 mm	70 mW	4 W
80338100100	COB UVC 24 x 19 mm	280 mW	16 W
80338200100	COB UVC 38 x 38 mm	630 mW	36 W
80338300100	COB UVC 38 x 38 mm	120 mW	64 W
80367200100	COB UVC 38 x 38 mm	750 mW	100 W
80405100100	VIOLETTA Development Kit	70 mW	4 W
80397300100	VIOLETTA UVC 40 x 30 mm	70 mW	4 W
80397400100	VIOLETTA UVC Ø86 mm	210 mW	12 W
80397500100	VIOLETTA UVC 80 x 80 mm	280 mW	16 W
80338400100	VIOLET UVC 281 x 19.2 mm + Alert Light	420 mW	33 W
80338500100	VIOLET UVC 281 x 19.2 mm + Alert Light	560 mW	38 W
80338600100	VIOLET UVC 281 x 19.2 mm	840 mW	48 W

### UVC LIGHT ENGINES PORTFOLIO

With the advances of UVC sterilization LED technology, Audax Electronics has partnered with Crystal IS, manufacturer of Klaran UVC LEDs, to provide you with a high quality UVC LED solution for disinfection, launching its brand-new portfolio of UVC light engines. Because of their small form factor, the UVC LEDs can be implemented into a wide range of applications. Audax Electronics offers a variety of solutions that are also compatible with LEDiL optics and Bender+Wirth holders.



### FEATURES

- UV emission type C
- Wavelength: 260 – 270 nm
- Efficiency up to 2.1 %

### APPLICATIONS

- HEPA filters
- Water purification
- Medical sterilization
- Infectious disease control



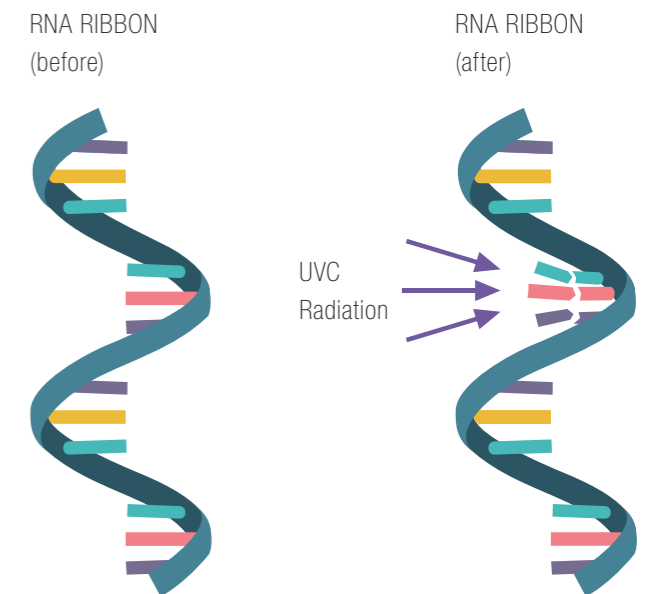
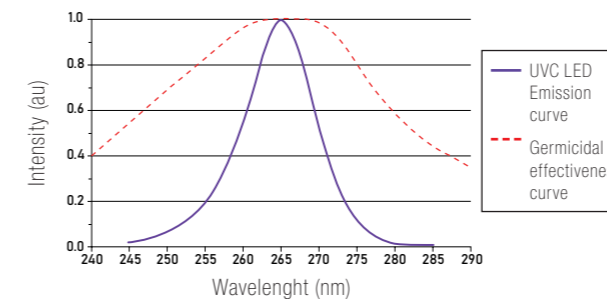
## HOW DOES UVC RADIATION WORK?

Although illuminance is measured relatively with the human eye perception, the same is not applicable when using ultraviolet radiation.

### HOW DOES UVC RADIATION WORK?

All radiation is a form of energy. A given ultraviolet (UVC) power source is ought to be measured in radiant power, considering the distribution of energy along the spectrum, measured with typical units of mW (milliwatts).

Spectral Power Distribution



### VIOLETTA DEVELOPMENT KIT

Furthermore, it is widely accepted that it is not necessary to kill pathogens with UV light, but rather apply enough UV light to prevent the organism from replicating. It is also proven scientifically that the LED uniqueness of controlling light emission to a specific 265 nm wavelength peak can result in higher absorption by organisms. Therefore, disabling more effectively pathogens such as Adenovirus and SARS-CoV-2 (COVID-19). The UV doses required to prevent replication are orders of magnitude lower than required to kill, making the cost of UV treatment to prevent infection commercially viable. Interested? Test out our Violetta development kit!



UVC light engine design is one of the many capabilities that Audax Electronics can offer. Check out our website for more information.



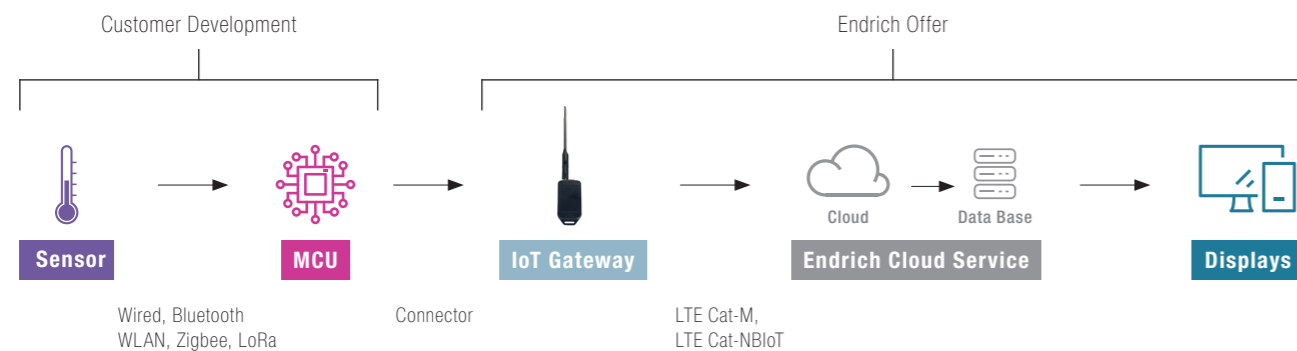
### 3BIG-MOD – 3 BAND LPWAN MODEM

HAVE A LOOK

3BIG-MOD is a certified cellular LPWAN Modem to transfer data (e.g. sensor, productiondata) via LTE Cat-M1, LTE Cat-NB1/NB2 and EGPRS network. The 3BIG-MOD is a suitable product to realise IoT developments or upgrade existing products with cellular IoT technology. The data can be sent with standard protocols to be managed and displayed. Already certified, no RF knowledge is needed and a short time-to-market can be realized.

#### APPLICATIONS

- Smart city
- Smart building
- Factory automation
- Energy management



### 3BIG-MOD – 3 BAND LPWAN MODEM

#### FEATURES

- LTE CAT-M1 / CAT-NB2
- 2G/ EGPRS fallback
- Optional GNSS
- UART interface
- Integration support
- Supported protocol stacks:  
PPP / TCP / UDP / SSL / TLS / FTP(S) / HTTP(S) / MQTT / CoAP / LWM2M
- Tasks
  - Sensor to cloud connection
  - Predictive maintenance
  - Data-logging
  - Tracking
  - Machine-to-machine Communication
  - Device management and controlling

NEW!  
ONLY AT ENDRICH!

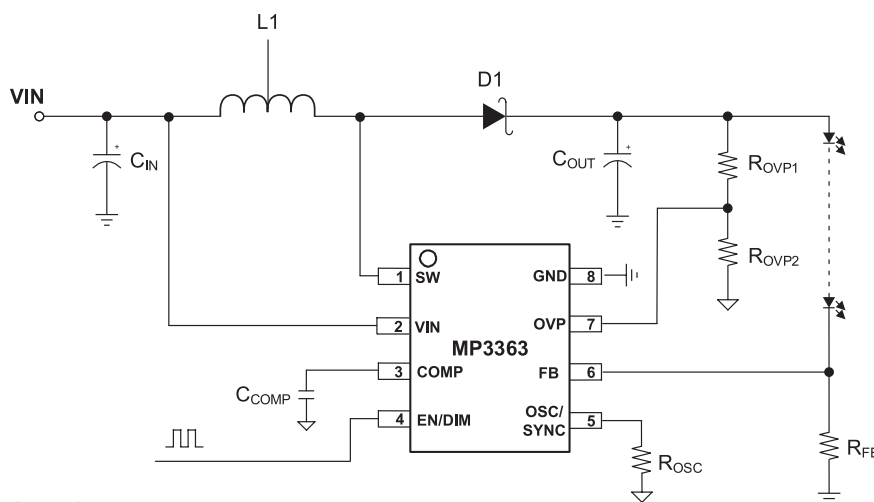
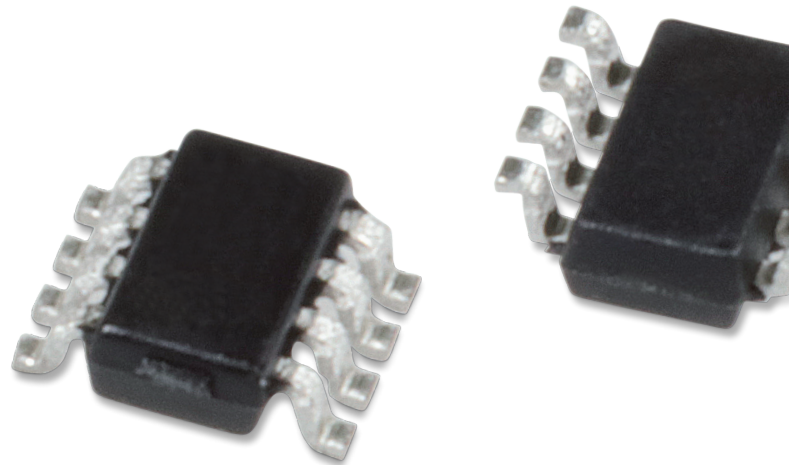


To easily integrate the 3BIG-MOD into new or existing designs, Endrich provides support for product selection, design and ramp up. Using standard AT-commands, the IoT communication via cellular network, the upgrade to existing microcontroller platforms can be smoothly realized. From sampling to evaluation including hardware and software support, our IoT competence team provides the documentation and – if needed – example python scripts and C-code.

## 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  $V_{IN}$  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  $\mu$ A shutdown current and 200 mV VFB
- Configurable 200 kHz to 2.2 MHz fSW
- Sync fSW function
- Internal 100 m $\Omega$ , 40 V power switch
- 95 % efficiency
- Analog and PWM dimming
- LED short/open, UVLO, OVP, short FB protection

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