

# endrich news

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## OUR HIGHLIGHT OF THE MONTH:

VIRTUAL ELECTRONICA 2020 – VISIT ENDRICH ONLINE



### WHAT YOU CAN EXPECT

- Exciting webinars
- Exchange with experts
- Product highlights

**VISIT US!**  
9.11 – 12.11.2020

## CT220 – XTREMESENSE™ HIGH LINEARITY, HIGH-RESOLUTION CONTACTLESS CURRENT SENSOR IN MINIATURE FORM FACTOR

## CT220 – XTREMESENSE™ HIGH LINEARITY, HIGH-RESOLUTION CONTACTLESS CURRENT SENSOR IN MINIATURE FORM FACTOR



The CT220 is a high linearity and high-resolution contactless current sensor from Crocus Technology developed on its patented XtremeSense™ TMR technology with the capability of measuring up to several 1,000 A. It measures the magnetic field of the current flowing through a busbar or printed circuit board (PCB) trace and converts it to an analog output voltage that represents the field and therefore current.

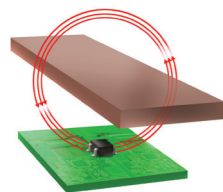
The CT220 is an ideal contactless current sensing solution for applications that need to have excellent isolation and accurate current measurements. There are four (4) variants of the CT220 that will sense the following magnetic fields:  $\pm 1.5$  mT,  $\pm 5.0$  mT,  $\pm 10.0$  mT and  $\pm 15.0$  mT.

### FEATURES

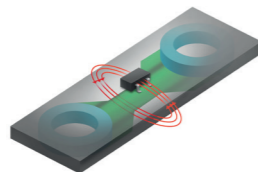
- AC or DC Contactless Current Sensing Range: Up to several 1,000 A; Resolution of 5 mA
- Magnetic Field (Current) Range:  $\pm 1.5$  mT;  $\pm 5.0$  mT;  $\pm 10.0$  mT;  $\pm 15.0$  mT
- /FLAG Pin to Indicate 90 % and 10 % of Full Field Range; Active LOW Digital Output (Push-pull)
- Supply Voltage: 2.7 V to 5.5 V
- Supply Current:  $\sim 1.2$  mA
- Operating Temperature Ranges: Industrial:  $-40$  °C to  $+85$  °C or Extended Industrial:  $-40$  °C to  $+125$  °C
- Package: 5-lead SOT23

### APPLICATIONS

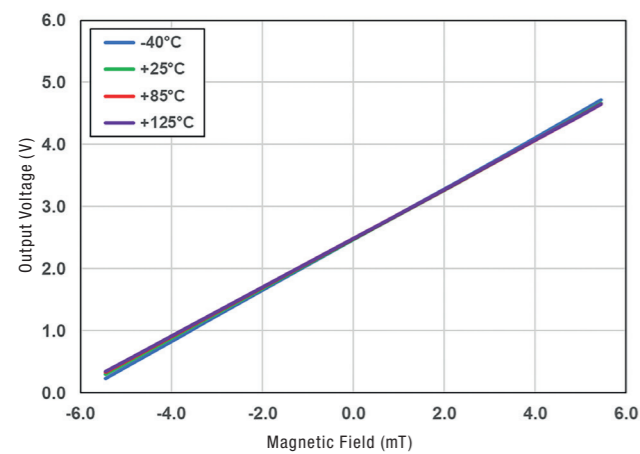
- Contactless Current Sensing Measurements
- Motor Control
- Solar Inverters
- Power Distribution Units (PDUs)
- UPS, SMPS and Telecom Power Supplies
- Smart Appliances
- IoT Smart Plugs/Energy Devices
- Battery Management Systems
- Battery Chargers
- PC and Servers



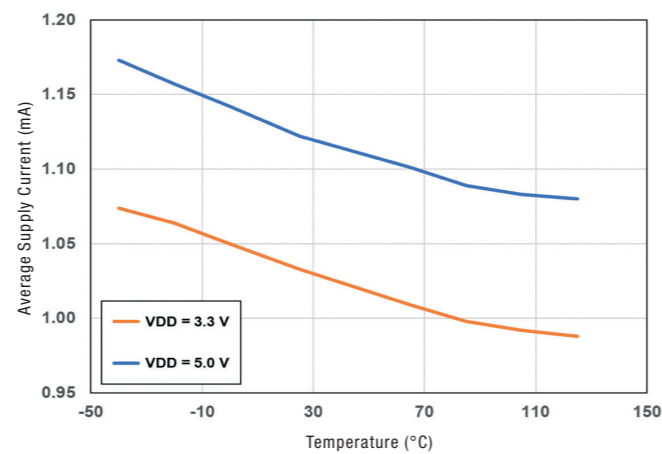
Measuring current in busbar



Measuring current in PCB trace



Best-in-Class Magnetic Performance over Temperature



Low Current Consumption

	PART NUMBER	MAGNETIC FIELD RANGE	PACKAGE	OPERATING TEMPERATURE RANGE
HAVE A LOOK	CT220BMC-IS5	$\pm 1.5$ mT	5-lead SOT23	$-40$ °C to $+85$ °C
HAVE A LOOK	CT220BMC-HS5			$-40$ °C to $+125$ °C
HAVE A LOOK	CT220FMC-IS5	$\pm 5.0$ mT	5-lead SOT23	$-40$ °C to $+85$ °C
HAVE A LOOK	CT220FMC-HS5			$-40$ °C to $+125$ °C
HAVE A LOOK	CT220PMC-IS5	$\pm 10.0$ mT	5-lead SOT23	$-40$ °C to $+85$ °C
HAVE A LOOK	CT220PMC-HS5			$-40$ °C to $+125$ °C
HAVE A LOOK	CT220RMC-IS5	$\pm 15.0$ mT	5-lead SOT23	$-40$ °C to $+85$ °C
HAVE A LOOK	CT220RMC-HS5			$-40$ °C to $+125$ °C

### CT220 APPLICATIONS

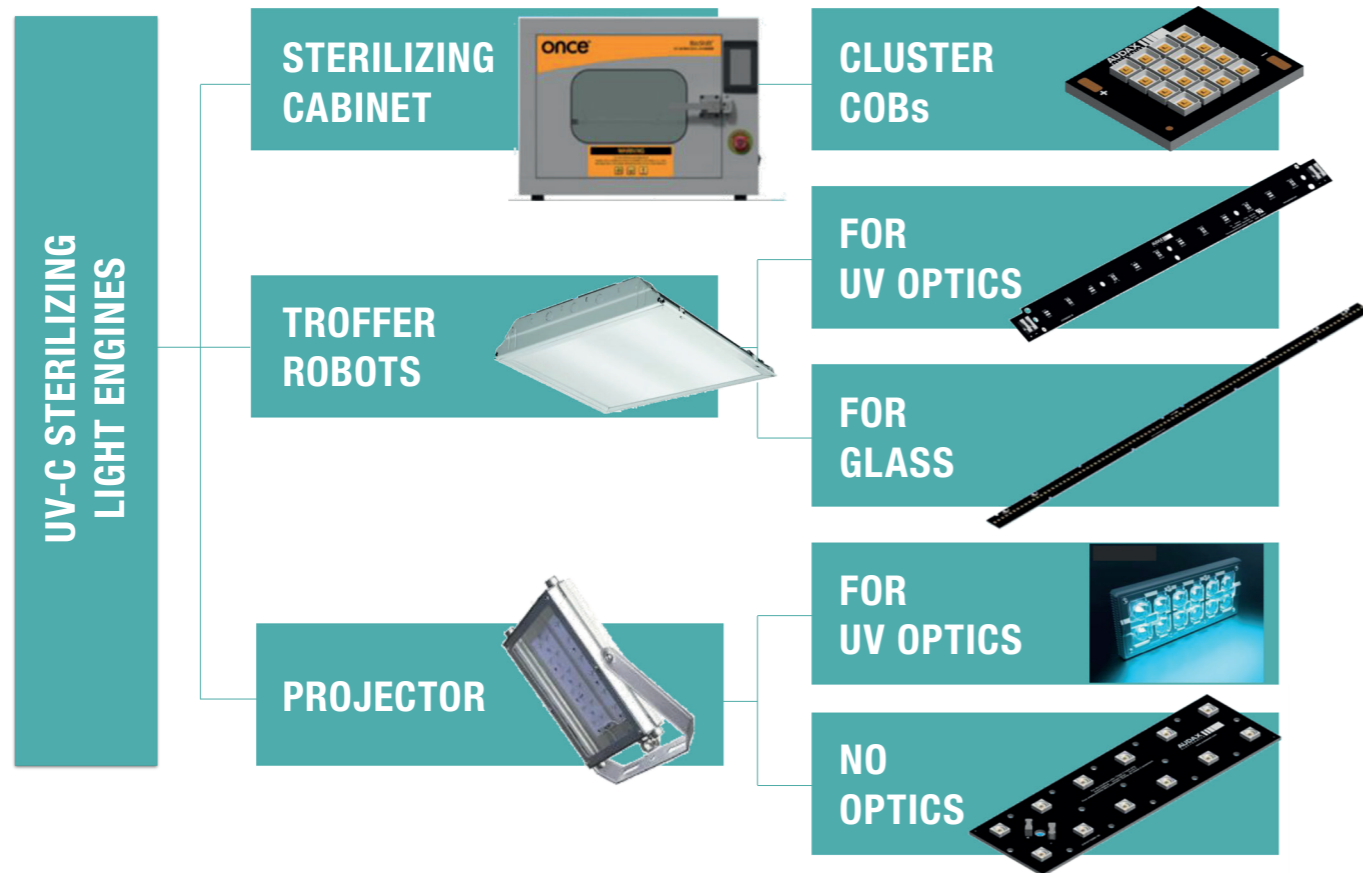
Smart Plugs	Printer / Copiers	Solar Power Inverters	EV Charging Stations	Smart E-Meters	Residential HVAC
Smart Appliances	Motor Control	Commercial HVAC	Battery Management	Industrial Appliances	Power Supplies

## UV-C LED LIGHT ENGINES

Endrich has enlarged its portfolio about UV-C LED Light Engines from Audax electronics.

Due to the world-wide pandemic caused by COVID-19 the usage of UV-C LEDs is getting more and more important. By using UV-C LEDs (Wave-length: 200 – 280 nm) the cell walls of DNA, RNA and proteins were damaged and the organism like bacteria, or virus will die.

For this purpose we are offering product range of UV-C LED modules for the below mentioned applications:



### APPLICATIONS

- Drinking water sterilization
- Air sterilization
- Desinfection of surfaces
- Food processing sterilization

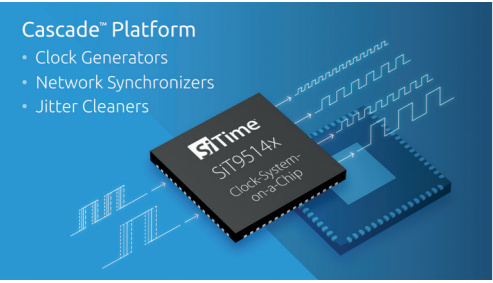
## UV-C LED LIGHT ENGINES

	NAME	PART NUMBER	RAD. POWER	WAVE-LENGTH	POWER	Vf	EFF.	If Nom	#LEDs
	COB UVC 19 x 16 mm 70 mW	80338000100	70 mW	275 nm	4 W	8 V	1,8 %	500 mA	1
	COB UVC 24 x 19 mm 280 mW	80338100100	280 mW	275 nm	16 W	16 V	1,8 %	1000 mA	4
	COB UVC 38 x 38 mm 630 mW	80338200100	630 mW	275 nm	36 W	24 V	1,8 %	1500 mA	9
	COB UVC 38 x 38 mm 1,120 mW	80338300100	1120 mW	275 nm	64 W	32 V	1,8 %	2000 mA	16
	VIOLET UVC 281 x 19.2 mm 420 mW + Blue Alert Light	80338400100	420 mW	275 nm	33 W	33 V	1,3 %	1000 mA	12
	VIOLET UVC 281 x 19.2 mm 560 mW + Blue Alert Light	80338500100	560 mW	275 nm	38 W	38 V	1,5 %	1000 mA	12
	VIOLET UVC 281 x 19.2 mm 840 mW	80338600100	840 mW	275 nm	48 W	48 V	1,8 %	1000 mA	12
	LINEAR UVC 560 x 20 mm 400 mW	80310600100	393 mW	275 nm	19,62 W	40,88 V	2,0 %	480 mA	96
	2 x 6 UVC 420 mW + Blue Alert Light	80338700100	420 mW	275 nm	33 W	33 V	1,3 %	1000 mA	12
	2 x 6 UVC 840 mW	80338800100	840 mW	275 nm	48 W	48 V	1,8 %	1000 mA	12

## SITIME ENABLES 5G VISION OF ZERO DOWNTIME WITH 10 TIMES HIGHER RELIABILITY

## HYBRID SEMICONDUCTOR FOR AC POWER CIRCUIT PROTECTION

HAVE A LOOK



**Cascade™ Platform**  
 • Clock Generators  
 • Network Synchronizers  
 • Jitter Cleaners

SiTime Corporation (NASDAQ: SITM), a market leader in MEMS timing, announced the Cascade™ family of MEMS clock ICs for 5G, wireline telecom and datacenter infrastructure. This clock-system-on-a-chip (ClkSoC™) family, the SiT9514x, consists of Jitter Cleaners/Networking Synchronizers and Clock Generators that deliver multiple clock signals in a system. This clock family uses SiTime's recently launched third-generation MEMS resonators that deliver higher performance with lower power.

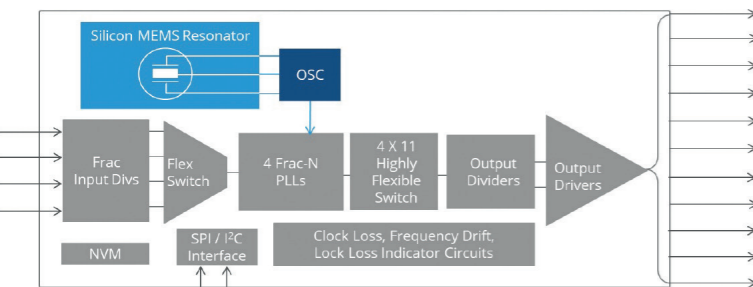
### APPLICATIONS

- Sync-E, ITU-T G.8262
- Boundary clock, ITU G.8273.2
- Slave clocks, ITU G.812, G.813
- 802.3AS AVB, TSN
- Broadcast video
- OTN clocking for framers, mappers and processors
- 5G RRU and small cells
- 10/100/200/400G Ethernet
- IEEE 1588
- FPGA and server clocking
- Test and measurement

Communications and enterprise electronics have previously used clock ICs with external quartz references to integrate multiple timing functions and to distribute clock signals. SiTime's new, all-silicon clock architecture provides more integration by integrating a MEMS resonator reference inside the package. More importantly, with SiTime's proven MEMS technology, the Cascade clock-system-on-a-chip delivers up to 10 times higher reliability and resilience, enabling the 5G vision of zero downtime. Either standalone or together with SiTime's MEMS TCXOs and OCXOs, the SiT9514x delivers a complete timing solution for applications such as 5G RRUs, small cells, edge computers, switches, and routers.

### Benefits of SiTime's Complete Clock-System-on-a-Chip

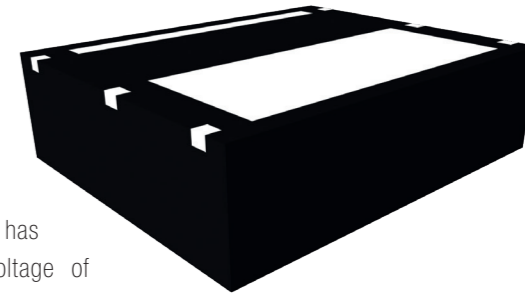
- Integrated MEMS resonator eliminates issues with quartz such as capacitive mismatch, activity dips, susceptibility to shock, vibration, and EMI
- Four independent PLLs, with maximum flexibility to support time synchronization applications where multiple independent clock domains are required
- Up to 11 outputs with an operating frequency range of 8 kHz to 2.1 GHz, as well as a 1 pps (pulse per second) output, for maximum frequency agility
- Programmable PLL loop bandwidth down to 1 milli-Hz for maximum filtering of wander or network noise in IEEE 1588 and synchronous Ethernet
- Excellent PSNR for highest performance in the presence of power supply noise
- Minimal external filtering circuits for simpler design, space savings, and BOM reduction
- Rich programmable features and configuration options: (1) Blank ISP (in-system programmable) devices provide maximum flexibility; (2) Pre-programmed devices enable system boot up without software configuration for maximum simplicity
- EVBs and TimeMaster™ software enable users to map clock configurations and generate the scripts for software integration, which speeds development



Cascade Clock Architecture

Network Device	5G Requirement	SiTime Value	SiTime Products
Radios, BBU, Switches, Routers	<ul style="list-style-type: none"> <li>• Outdoor deployment</li> <li>• Zero perceived downtime</li> <li>• Higher reliability</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental resilience</li> <li>• Flexible input monitoring, switching</li> <li>• MEMS reliability</li> </ul>	SiT9514x
Switches, Routers, Radios	<ul style="list-style-type: none"> <li>• 10x tighter time synchronization</li> <li>• Outdoor deployment</li> <li>• Higher reliability</li> </ul>	<ul style="list-style-type: none"> <li>• 4x better Δf/ΔT</li> <li>• 20x better g-sensitivity, 105 °C</li> <li>• 40x better MTBF</li> </ul>	Elite TCXO Emerald OCXO
Optical Modules	<ul style="list-style-type: none"> <li>• 4x faster</li> <li>• Less power/bit</li> <li>• Denser designs</li> </ul>	<ul style="list-style-type: none"> <li>• Lowest jitter</li> <li>• 2x more robust to supply noise</li> <li>• 50% smaller</li> </ul>	SiT9501.XO

HAVE A LOOK



ProTek Devices has introduced a new patent-pending series of hybrid semiconductor components for AC power supply circuit protection in consumer and industrial applications like home appliances, industrial equipment automation controls, instrumentation, and SMART meters. The new semiconductor technology is an ideal replacement for surface mount metal oxide varistor (MOV) devices.

The PHYTVSxxxV3 series is designed to protect industrial and consumer applications where a reliable overvoltage solution with lower clamping voltage is required. Compared with a MOV, ProTek Devices' new series of components offer a more robust product in a small form factor. It does not present a wear-out mechanism common with MOVs. The use of semiconductor technology significantly extends its operation lifetime.

The new PHYTVSxxxV3 series are compatible with IEC industry standards 61000-4-2 (ESD): level 4 air 15 kV, contact kV; with 61000-4-4 (EFT): 40 A; and with 61000-4-5 (surge): L-L class 2, 250 Apk, 8/20 μs, 500 V with Req = 2 Ohms. It provides bidirectional operation for 50/60/400 Hz AC lines. They are also RoHS and REACH compliant.

The series consists of three devices. The PHYTVS125V3 has a typical operating voltage of 125 V, the PHYTVS250V3 has a typical operating voltage of 250 V, and the PHYTVS277V3 has a typical operating voltage of 277 V.

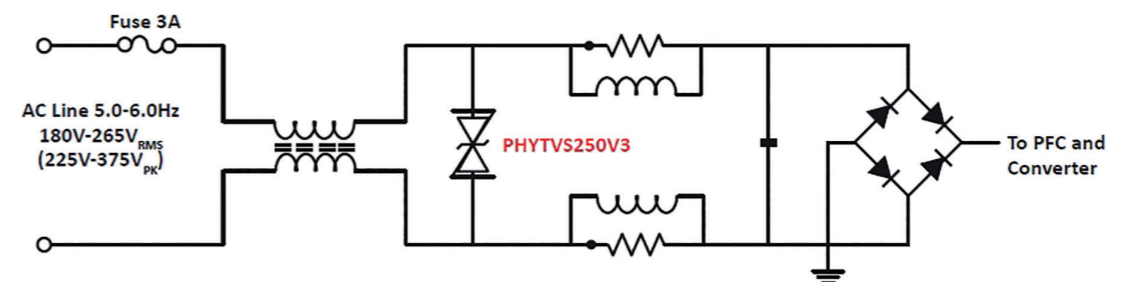
ProTek Devices' PHYTVSxxxV3 series is provided in a low profile and space-saving molded DFN-2-KW package. It has a form factor compatible with SMT 3225.

### APPLICATIONS

- Power Adapters
- Home Appliances
- Industrial Equipment - Automation Controls
- Instrumentation
- SMART Meters

### FEATURES

- Compatible with IEC 61000-4-2 (ESD): Level 4 Air ±15 kV, Contact ±8 kV
- Compatible with IEC 61000-4-4 (EFT): 40 A
- Compatible with IEC 61000-4-5 (Surge): L-L Class 2, 250 Apk, 8/20 μs, 500 V with Req = 2 Ohms
- Bidirectional Operation 50/60/400 Hz AC Lines
- Very Low Clamping Voltage
- Form Factor Compatible with SMT 3225
- Available for SMT Reflow Soldering
- Low Profile and Space Saving Package
- Operating Temperature -55 °C to +125 °C
- RoHS and REACH Compliant



PHYTVS Application

## 2.4 GHz RF TRANSCEIVER MODULE AND IC BM5602 / BC5602

The BM5602-60-1 is a transceiver module whose design is based on the high performance and fully integrated 2.4GHz transceiver BC5602 device.

The BC5602 is a high performance and low cost fully-integrated CMOS RF GFSK transceiver for wireless applications in the 2.4GHz frequency band. It incorporates a highly integrated 2.4GHz transceiver and a baseband modem with programmable data rates of 125 Kbps, 250 Kbps and 500 Kbps. Data handling features include 3 levels of 32-byte TX/RX FIFO and packet handling such as whitening and CRC checking.

HAVE A LOOK  
BM5602-60-1

HAVE A LOOK  
BC5602



### APPLICATIONS

- Wireless key mice
- Keyboards
- Remote control
- Home and business control
- Data exchange

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### FEATURES

- Frequency band: 2402 ~ 2480 MHz
- Supports 3-wire or 4-wire SPI interface
- Wide input voltage range of 1.9V ~3.6V
- Programmable data rate: 125 / 250 / 500 Kbps
- Programmable TX output power up to 5 dBm (Max. +6 dBm)
- Low current consumption:
  - 0.5  $\mu$ A deep sleep mode current with data retention
  - TX current: 25mA@5dBm
  - RX current: 17mA@250Kbps
- Dual sleep modes:
  - Middle sleep mode to support fast XO start-up
  - Regular light sleep mode
- RX sensitivity -97 dBm at 250 Kbps on-air data rate
- On-chip VCO and fractional-N synthesizer with integrated loop filter
- Supports 16 MHz crystal ( $\pm$ 20 ppm)
- Packet handling:
  - Data whitening
  - Auto-ACK / resend
  - CRC optional protocol
  - Support burst packets
  - Support automatic ACK transaction
  - 6 data-pipes for 1:6 star network
- FCC / ETSI compliant

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