

endrich news

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OUR PRODUCT OF THE MONTH: DSL03-24 – DSL PROTECTION SOLUTION



SOT-23-6 Package

The **DSL03-24** provides ESD, EFT and surge protection for high-speed data interfaces. The transient voltage array, steering diode combination device meets IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements. Available in the space-saving SOT-23-6 package configuration, this device is offered in 24 Volts with a Peak Pulse Power rating of 500 Watts for and 8/20 μ s waveshape.

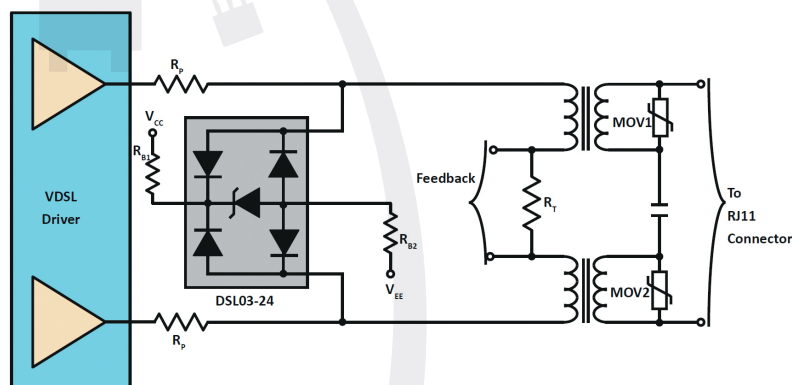
APPLICATIONS

- xDSL
- Portable Electronics
- SMART Phones

SOLUTION

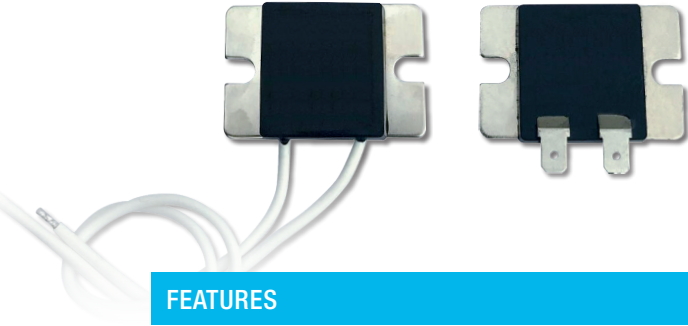
- 1 x DSL03-24 in SOT-23-6 Package
- Stand-Off Voltage V_{WM} : 24.0 Volts

- Breakdown Voltage V_{Bmin} : 26.0 Volts
- $V_C @ I_p$: 55 V @ 15 A
- Leakage Current I_{R1} : 0.1 μ A
- Max. Capacitance: 5.0 pF



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MINIATURE 300 W HEAT-SINK RESISTORS



RCD COMPONENTS INC. introduces new miniature 300W Heat-Sink resistors! Attached to a suitable air- or water-cooled heat sink, RCD's CM300 proprietary flame retardant epoxy insulation ensures optimal environmental protection & dielectric strength. Excellent for applications such as inverters, power supplies, laser systems, DC-DC converters, X-ray/radio frequency generators, medical equipment, snubber circuits, bypass and coupling circuits

FEATURES

- 300 W with low profile & small size
- Non-inductive, light weight
- High stability / reliability
- Wide resistance range
- Up to 5 KV insulation voltage available
- Virtually vibration-proof
- -55°C to +175°C operating temperature
- Low cost, quick delivery (available on *SWIFT™* program)

OPTIONS

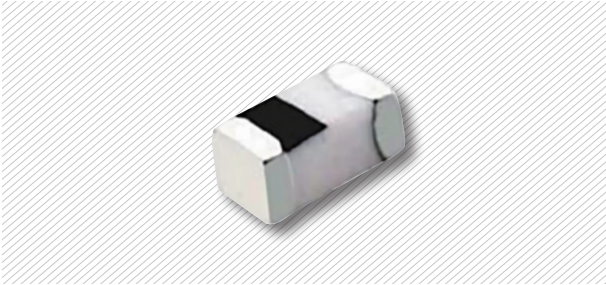
- Military burn-in/screening and numerous design modifications are available such as flexible leads of different diameters / lengths / materials, custom values, custom marking, lead / Pb terminations, etc.

APPLICATIONS

- Inverters, power supplies, laser systems, DC-DC converters, X-ray/radio frequency generators, medical equipment, snubber circuits, bypass and coupling circuits

REQUIREMENTS	CHARACTERISTICS, TYP.	TEST METHOD
ELECTRICAL SPECIFICATION		
Power Rating	300 W	At flange temp. $\leq +25^{\circ}\text{C}$
Resistance Range and Tolerance	0.1 Ω to 1 M; 2% 5% & 10% standard	
Temperature Coefficient	± 100 ppm	+25°C to +125°C except opt.L in low values
Operating Temperature Range	-55°C to +175°C	Measured at flange surface
Max Working Voltage	1000 V (up to 2000 V available)	$E = \sqrt{P \times R}$ or 1 KV (up to 2 KV)
Dielectric Strength	2 KVAC (up to 5KV available)	60 sec. between terminal & flange
Load Life Stability	$\pm 1\%$	Continuous power, 1000 hours
Moisture Resistance	$\pm 1\%$	60°C 90 - 95% RH 1000 hours
Insulation Resistance	> 1000 Megohms	Between terminals & flange
Derating	300 W at 25°C to 0 W at 175°C	Derate linearly
Thermal Impedance	0.23 W/°C	From resistor to flange

HIGH FREQUENCY CHIP CERAMIC INDUCTOR (MCI SERIES)



INPAQ Technology Co., Ltd. introduces new High Frequency Chip Ceramic Inductor (MCI Series). The particular ceramic material and coil structure provide a high frequency application range up to 10 GHz. MCI type is suitable to be used in high frequency applications of consumer and industrial area. Automotive type are under development and will be released soon.

FEATURES

- Particular ceramic material and coil structure provide high frequency application range up to 10 GHz
- Standard EIA Size 01005 / 0201 / 0402 / 0603
- Tight Tolerance For High Frequency Matching Circuits
- High Q and High SRF
- High product quality and outstanding reliability

APPLICATIONS

- RF and wireless communication
- information technology equipment such as computer, telecommunications, radar detectors, automotive electronics, cellular phones, pagers, audio equipment, PDAs, keyless remote system and low-voltage power supply modules
- WLAN / WIFI
- Cellular Phone
- Analog Applications

MCI0402

MCI0603IQ

MCI0603HQ

MCI1005HQ

MCI1608**

ELECTRICAL SPECIFICATION

Size	01005	0201	0201	0402	0603
L-Value (nH)		0.6 - 22	0.3 - 100	0.3 - 270	
Q min.		14 - 15	4-5	8	
DCR (Ohm)		0.07 - 1.60	0.07 - 3.74	0.08 - 4.80	
SRF (MHz)		10.000 - 2.500	10.000 - 900	10.000 - 400	
Rated Current (mA)	coming soon	850 - 160	850 - 60	300 - 110	coming soon

OTHER RF INDUCTORS OF INPAQ

MFI	Chip Ferrite Inductor
WCI	Chip Wire Wound Inductor

OTHER PASSIVE COMPONENTS OF INPAQ

Power Inductor	WIP P, S, Y Type	Wire Wound Metal Molding
	WPA P, S Type	Wire Wound Metal Molding – for Automotive
	MIP P, W Type	Multilayer
	MPA	Multilayer – for Automotive

SITIME TAKES DRIVERLESS CARS ONE STEP CLOSER TO REALITY

SiTime Corporation, the market leader in MEMS timing, today announced new oscillators for automotive networking in advanced driver-assistance systems (ADAS). These solutions will propel the automotive industry forward in their development of driverless cars. For successful ADAS operation, supercomputers in these cars will need to process massive amounts of data reliably and with low latency. The SiT9386 and SiT9387 oscillators enable just that. They deliver stable and reliable timing signals for All processors in automotive supercomputers, as well as for the interfaces that move data,

such as PCI Express and 10G, 40G, and 100G Ethernet.

„With our unique MEMS and analog technologies, SiTime is the only timing company that is disrupting automotive applications,“ said Piyush Sevalia, executive vice president of marketing at SiTime. „Timing is the heartbeat of electronics. Temperature changes, shock, and vibration can all destroy timing signals and can cause ADAS to fail. The SiT938X differential MEMS oscillators are the only timing solutions that are capable of withstanding such environmental stressors, while still delivering precision timing for ADAS operation.“



In addition, the SiT9386/7 differential MEMS oscillators offer:

- Any frequency between 1 MHz and 725 MHz, accurate to 6 decimal places
- 0.23 ps typical RMS phase jitter (random)
- Frequency stability as low as ± 25 ppm
- The smallest package size (3.2 x 2.5 mm) for size-limited applications

Earlier 2017, SiTime introduced the SiT8924/5 oscillators, a family of ultra-robust oscillators for all-around cameras. The SiT9386/7 oscillators further extend the company's offerings for the ADAS market. These devices are the first automotive products built on the Elite Platform™, a proprietary architecture that delivers excellent performance in harsh operating conditions:

- 30 times better than quartz in shock performance (10,000 g)
- 20 times better than quartz in reliability (over 1 billion hours MTBF)
- Extended temperature range (-40°C to +105°C)
- Robust operation in the presence of system noise (0.02 ps/mV PSNR)

- Also available in an industry-standard package (7.0 x 5.0 mm)
- LVPECL, LVDS, and HCSL output signaling types

Samples of the SiT9386/7 oscillators are available now on request. Production Part Approval Process (PPAP) documentation, compliant with the AIAG manual, will be available in the first half of 2018.

ABOUT SITIME

SiTime Corporation, the leader in MEMS timing and a wholly owned subsidiary of MegaChips Corporation (Tokyo Stock Exchange: 6875), offers MEMS-based silicon timing solutions that replace legacy quartz products. SiTime's configurable solutions enable customers to differentiate their products with higher performance, smallest size, lowest power, and best reliability. The rich feature set and flexibility of SiTime's solutions allow customers to consolidate their supply chain, reducing the cost of ownership and time to market. By using standard semiconductor processes and high-volume packaging, SiTime offers the best availability and shortest lead times in the industry. With 90% market share and over 1 billion devices shipped, SiTime is driving the electronics industry to use 100% silicon-based timing.

AIR COOLED LED RADIANT SOURCE

The **LED- system OLM-034C** expands the OSA opto light product portfolio in the UV-C and UV-B region. As a supplier of customized solutions, OSA opto light can cover the whole wavelength range in visible and NIR range with the same system.



Core of the OLM-034C Air system is an air cooled high efficient LED radiation source, including power supply and LED controller. This turnkey system is the best possible solution for various applications in research, development and industrial applications, for example:

- Phototherapy and other medical applications
- Hardening of colors (print)
- Hardening of adhesives
- Exposition of photo resists
- Florescence excitation
- Photo and bio-chemistry

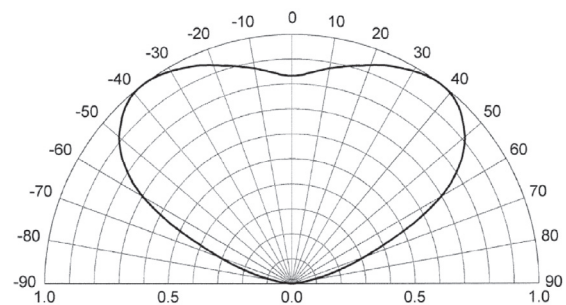
The system is designed for a fast implementing and usage in laboratory applications as well as for an easy integration in complex machines with programmable controller units.

THE SYSTEM CONTAINS THE FOLLOWING PARTS

- LED module OLM-034C
- LED Controller OEM-006 SY
- Cable LED module / controller
- 48 V DC power supply
- Type: MeanWell GS120-A48-R7B / MeanWell GSM120-A48-R7B
- 230 V power cable (VDE)

LED MODULE OLM-034C

- Heat sink (aluminium)
- 48 V- fan
- Size 100 x 90 x 80 mm
- Light emitting area 11,5 x 23,5mm
- LED number max. 36 (6 x 6)
- LED- number between 9 and 36 upon request
- Weight 400 g
- Front side quartz glass



TYPE	PEAK WAVELENGTH [NM] ³⁾	TYPICAL POWER DENSITY [MW/CM ²] ¹⁾	MAX LED CURRENT DC [A]	FORWARD VOLTAGE [V] ²⁾
OLM-034C-XX-265	260 – 270	21	2.1	42
OLM-034C-XX-285	280 – 290	53	2.1	34
OLM-034C-XX-300	295 – 305	53	2.1	34

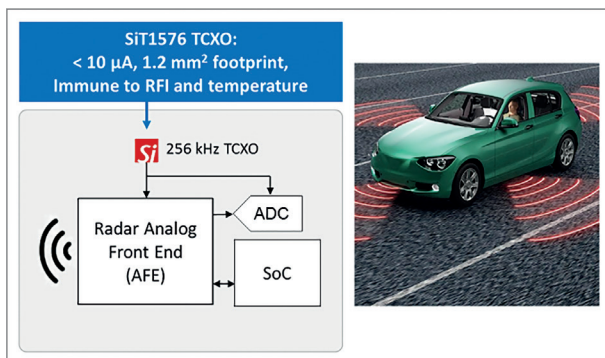
¹⁾ Measured @ 350 mA/chip, 25°C ambient temperature and in contact to emitting window, Power density decreases with increasing temperature

²⁾ Typical value @ 350 mA, 25 °C chip temperature ³⁾ Measured @ 350 mA, 25 °C chip temperature

GROWING SCOPE OF RADAR SENSORS ELEVATES THE NEED FOR LOWER POWER AND SMALLER SIZE

As with many technologies, the growing ubiquity of radar-based detection systems mirrors the growth of silicon advances in integration, miniaturization, and lower power consumption. Rapid adoption of radar sensors in transportation and industrial applications is fueled by safety, efficiency, and automation trends on one side, and boosted by reductions in size, power, and costs on the systems side.

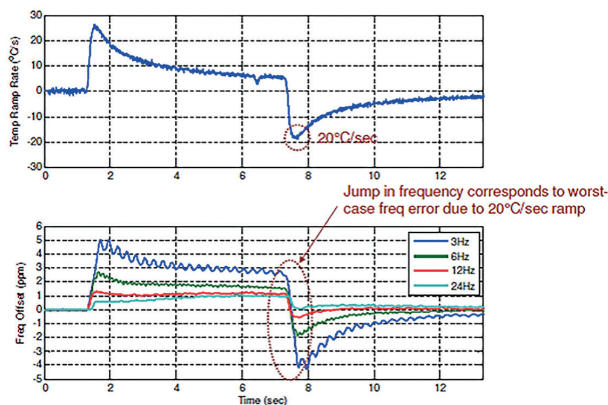
From collision-avoidance and obstacle detection to measurement and ranging, radar systems depend on an accurate clock reference at the front end. Recent advances in silicon MEMS and analog IC technologies provide smaller, lower-power, ultra-reliable, ultra-rugged timing solutions for these applications. The SiT1576 Super-TCXO™ is one such example. This MEMS-based device is ideal for small-form-factor, radar-based detection systems because of its unique combination of programmable frequency, small footprint, ultra-low power, and accuracy.



Unlike other TCXOs (temperature-compensated oscillators), the SiT1576 is factory-programmable between 1 Hz and 2 MHz, enabling it to match the frequency of low-power SoCs and MCUs. This Super-TCXO is accurate to within ± 5 ppm over the -40°C to $+85^{\circ}\text{C}$ temperature range and consumes only micro-amps of current from a flexible supply voltage between 1.8 V and 3.3 V. The SiT1576 provides a reliable, compensated reference for the ADC and radar AFE (analog front end). Because this Super-TCXO is self-compensated, the system doesn't require external, power-hungry, system calibration overhead to maintain frequency stability, further reducing system power.

SIT1576 SUPER-TCXO ELIMINATES SYSTEM CALIBRATION AND DRAWS μ AMPS

In the example shown above, a MEMS Super-TCXO provides the timing reference for the ADAS sensor. The SiT1576 is programmed to operate at 256 kHz, draws less than 10 μ A over temperature, and consumes only 1.2 mm² of board space.



Automotive and industrial systems operate under harsh conditions with high temperatures and fast ramp rates. However, temperature gradients can cause system headaches. The tight thermal coupling of the internal temperature sensor of the SiT1576 combined with a 3 Hz compensation refresh rate, maintain accuracy even when exposed to a temp gradient up to $2^{\circ}\text{C}/\text{sec}$. For steeper temperature gradients, the SiT1576 can be factory programmed for faster refresh rates up to 24 Hz, and still maintain stability under temperature gradients up to $20^{\circ}\text{C}/\text{sec}$.

SiTime's 1 Hz to 2 MHz Super-TCXOs are ultra-small, micro-power reference sources that provide new architectural options

PLR3343 – GIGABIT ETHERNET PROTECTION 3.3 V PHY



DFN-10 PACKAGE

COMPLIANCE

- IEC 61000-4-2 (ESD) ±8 kV Contact, ±15 kV Air Discharge
- IEC 61000-4-4 (EFT) 40 A, 5/50 ns
- IEC 61000-4-5 (Surge Secondary Lightning), 5A @ 8/20 μs

ALTERNATE RECOMMENDATIONS

- 2 x PLR3311
- 4 x GBLC03CI

OBJECTIVE

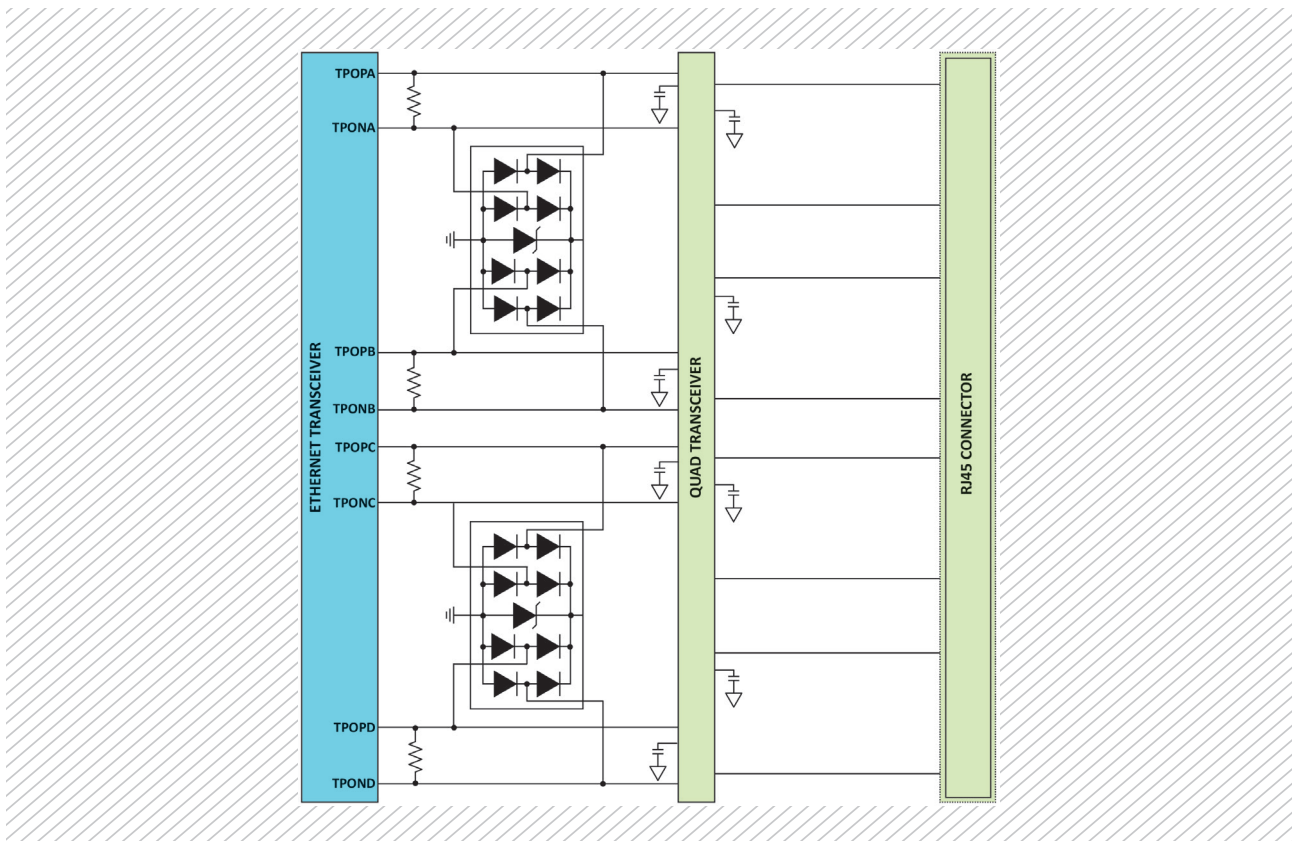
Ethernet interfaces are 3.3 V digital signals operating on a 125 MHz clock. This solution provides ESD protection commonly required in indoor, short-cable applications where ESD is the primary threat. It also provides protection for secondary lightning surges.

BENEFIT

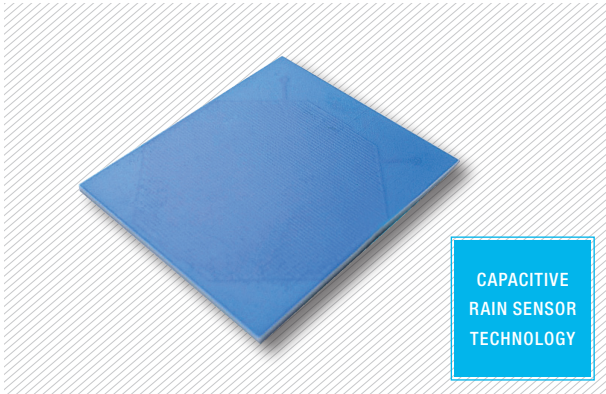
This integrated TVS diode solution is designed to protect the interface against surge events by using two devices (PLR3343) to protect both pairs of Ethernet lines. Circuit assumes magnetics will provide 1500 V isolation to external surges.

SOLUTION

- 2 x PLR3343 in DFN-10 Package
- Stand-Off Voltage V_{WM} : 3.3 Volts
- Breakdown Voltage V_{Bmin} : 5.6 Volts
- $V_C @ I_P$: 25 V @ 5 A
- Leakage Current IR: 1.0 μA
- Typ. Capacitance: 0.5 pF IO to GND



RAIN CAPACITIVE SENSOR



AUR°EL S.p.A: has developed a capacitive sensor-component able to notice the presence of water on its surface. It's realized on ceramic substrate and thanks to its sensitivity area is able to change the capacity depending on the ratio water accumulated on it.

The technology (glassy coverage of substrate) guarantees **high reliability** due to the great stability of the support and the inalterability of the surface "sensitive", also after cleaning with solvents and/or heavy external conditions of employment. A double layer of a dielectric material has been screen printed for giving an higher immunity against weathering problems. Moreover in presence of the water, the capacitance goes to high values compared to dry conditions and the ratio changing is over 400%.

On the back side of the capacity sensor it is available a NTC temperature sensor is available with a nominal resistance value of 100 KOhm at 25°C.

The NTC components can be used to monitor the environment temperature and to control the heater against hard environmental condition such as frost and dump deposits on the capacity area.

FOR THE NTC COMPONENT VALUES REFER TO EPCOS/ TDK P/N: B57471V2104J062 DATASHEET.

- Voltage supply: 12 VDC
- Consumption: 0.25 mA
- NTC: 100 KOhm/25°C
- Dimension: 30.5 x 35.56 x 2 mm

APPLICATIONS

- Control systems in home automation: awnings, venetian blinds
- Irrigation systems for agriculture & monitoring
- Weather stations
- Control systems in industrial automation

NOTE: Depending on quantities, it's possible to receive the capacitive sensor with cabling and connector, under customer request

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