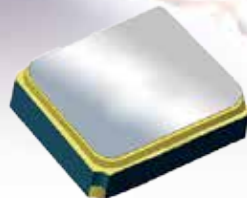




Abracon

Solutions Guide



Reach your local sales team at **1.800.CALL.TTI**



Why Buy from the Specialist in Electronic Component Distribution?

Founded in 1971, TTI has steadily grown to become the world's leading interconnect, passive, electromechanical and discrete component distributor in the industry. The company was founded on the premise that passive component purchasing could be made more efficient by offering product specialization, customer-driven service, and proprietary supply chain solutions.



Knowledgeable Product Experts

Specialization allows TTI product managers to provide much better product insight to support your manufacturing from design through production. TTI Specialists' commitment to our customers is key to our continued success.



Broader and Deeper Inventories

TTI maintains extensive component inventories, stocking more than 500,000 part numbers in North America and over 850,000 globally – that's more interconnect, passive, electromechanical and discrete inventory available than from any other source.



AIM - Advanced Inventory Management Platform

TTI's proprietary supply chain system is specifically designed for managing IP&E products and partnerships with premier manufacturers. This allows us to provide the BOM coverage necessary to deploy comprehensive solutions that reduce total cost of ownership and mitigate line down risk.

Quality and Reliability

TTI is the first distributor to have all global warehouse locations ISO registered and currently are certified to ISO 9001 with AS9100C and ISO 14001 in North America, ISO 9001, EN 9100, ISO 14001 and EN 9120 in TTI Europe and ISO 9001 in TTI Asia.

Year after year, customers rate our inventory availability, on-time delivery and accuracy among the very best in the industry – call your local TTI Specialists at 1.800.CALL.TTI and discover why.

TIMING & SYNCHRONIZATION

Real Time Clock with Integrated Quartz Crystal	4
22nA Industry Leading Power Consumption RTC.....	4
Standard SMD Quartz Crystals	5
General Purpose Quartz Crystal Oscillators (XO)	6
32kHz Quartz Crystals (Tuning Fork Crystals).....	6
Precision XO/VCXO/TCXO/OCXO's offering sub 0.1ps to 0.5ps rms phase jitter.....	8
Quartz & watch-MEMS 32.768 kHz Clock Oscillators	9
High Performance MEMS.....	9
General Purpose MEMS Oscillators.....	10
Automotive and Industrial Grade Crystals	10

RF & CONNECTIVITY

RFID Solutions.....	13
Discrete Ethernet LAN Transformers.....	14
Featured RF Inductor Solutions.....	14
Single Port Shielded POE, POE+ and POE++ RJ45 Jacks with Integrated Magnetics	15
Single Port Shielded 10G/1000/100/10 Base-T RJ45 Jacks with integrated Magnetics	15
Shielded RJ45 Jacks with Integrated Magnetics & USB Combo	15
Shielded Single Port RJ45 Jacks with Integrated Magnetics	15

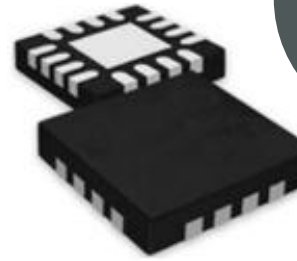
POWER & ENERGY

ASPI Series Low Profile SMD Power Inductors.....	16
High Power Toroid Inductors.....	16
Power Inductors	17
Standard Wireless Charging Coils	18


 ULTRA
LOWER POWER
22nA

Leading the industry with 22nA low power real time clock (RTC) solutions

Abracon offers industry leading solutions ideal for the industrial IoT, wearables, and battery operated applications.



22nA Industry Leading Power Consumption RTC

Stand-alone real time clocks (RTC) using external crystals deliver industry leading low time keeping current consumption solutions that extend battery life.

SERIES	PACKAGE SIZE (mm)	PACKAGE (mm)	FEATURES	VDD OPTIONS (V)	INTERFACE	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE
AB0805	3.0 x 3.0	16-QFN	Alarm, Leap Year, SRAM, Trickle-Charger, Watchdog Timer	1.5 ~ 3.6	I2C, 2-Wire Serial	-40°C to +85°C
AB0815	3.0 x 3.0	16-QFN	Alarm, Leap Year, SRAM, Trickle-Charger, Watchdog Timer	1.5 ~ 3.6	SPI	-40°C to +85°C
AB1805	3.0 x 3.0	16-QFN	Power Management, Alarm, Leap Year, SRAM, Trickle-Charger, Watchdog Timer	1.5 ~ 3.6	I2C, 2-Wire Serial	-40°C to +85°C
AB1815	3.0 x 3.0	16-QFN	Power Management, Alarm, Leap Year, SRAM, Trickle-Charger, Watchdog Timer	1.5 ~ 3.6	SPI	-40°C to +85°C

Real Time Clock with Integrated Quartz Crystal

Stand-alone real time clocks (RTC) with integrated quartz crystals external crystals offer variety of industry leading low power or high accuracy temperature compensated (TCXO) solutions.

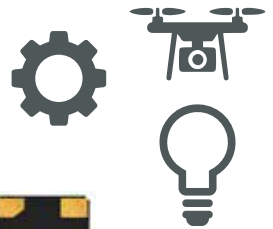


SERIES	PACKAGE SIZE (MM)	PACKAGE (MM)	FEATURES	VDD OPTIONS (V)	INTERFACE	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE
AB-RTCMC-32.768kHz-AIGZ-S7	3.2 x 1.5	8-CLCC	Alarm, Leap Year, Watchdog Timer	1.3 ~ 4.4	I2C, 2-Wire Serial	-40°C to +85°C
AB-RTCMK-32.768kHz	3.2 x 2.5	8-VDFN	Alarm, Leap Year, Square Wave Output, TCXO	1.3 ~ 5.5	I2C, 2-Wire Serial	-40°C to +85°C
AB-RTCMC-32.768kHz-IBO5-S3	3.7 x 2.5	10-VDFN	22nA IDD, Alarm, Leap Year, Trickle-Charger, Watchdog Timer, Countdown Timer, Century Flag, Square Wave Output	1.5 ~ 3.6	I2C, 2-Wire Serial	-40°C to +85°C
AB-RTCMC-32.768kHz-EOA9-S3	3.7 x 2.5	10-VDFN	Alarm, EEPROM, TCXO, Trickle-Charger	2.1 ~ 5.5	SPI	-40°C to +125°C
AB-RTCMC-32.768kHz-EOZ9-S3	3.7 x 2.5	10-VDFN	Alarm, EEPROM, TCXO, Trickle-Charger	2.1 ~ 5.5	I2C, 2-Wire Serial	-40°C to +125°C
AB-RTCMC-32.768kHz-B5GA-S3	3.7 x 2.5	10-VDFN	Alarm	1.8 ~ 5.5	I2C, 2-Wire Serial	-40°C to +85°C
AB-RTCMC-32.768kHz-B5ZE-S3	3.7 x 2.5	10-VDFN	Alarm	1.6 ~ 5.5	I2C, 2-Wire Serial	-40°C to +85°C
AB-RTCMC-32.768kHz-ZIZE-S2	5.0 x 3.2	10-TDFN	Alarm, Watchdog Timer	1.6 ~ 5.5	SPI	-40°C to +85°C

The Heartbeat of the IoT™

Featuring Abracon Low CL and Low ESR Quartz Crystals

What makes the IoT tick? Abracon's low equivalent series resistance (ESR) and low load plating capacitance (CL) crystals are ideal for green and energy saving MCUs and portable communications chipsets. In the race to lower power consumption, many on-chip oscillators are being starved of output drive and often cannot sustain oscillation using standard crystals. Abracon's newest line of quartz crystals for micro power applications overcome these challenges.



1.6 x 2.0 x 0.4mm

Description	Frequencies
ABM12-115	26.000MHz
ABM12-116	26.000MHz
ABM12-117	27.120MHz
ABM12-118	27.120MHz



2.0 x 1.6 x 0.5mm

Description	Frequencies
ABM11-140	26.000MH
ABM11-141	26.000MHz
ABM11-142	27.120MHz
ABM11-143	27.120MHz



2.5 x 2.0 x 0.5mm

Description	Frequencies
ABM10-166	12.000MHz
ABM10-167	12.000MHz

Standard SMD Quartz Crystals

SERIES	PACKAGE SIZE (mm)	HEIGHT (mm)	FREQUENCY RANGE (MHz)	TOLERANCE OPTIONS (±ppm)	STABILITY OPTIONS (± ppm)	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE
ABM13	1.2 x 1.0	0.3	36 to 80	10	30/20/15/10	-40°C to +85°C
ABM12	1.6 x 1.2	0.5	24 to 80	15	30/20/15	-40°C to +85°C
ABM11	2.0 x 1.6	0.6	16 to 50	15	20/15/10	-40°C to +85°C
ABM10	2.5 x 2.0	0.5	12 to 55	10	50/20/15/10	-40°C to +125°C
ABM8	3.2 x 2.5	0.8	10 to 125	50/10	100/15/10	-40°C to +125°C
ABM8G	3.2 x 2.5	1.0	12 to 50	10	20/15/10	-40°C to +85°C
ABM8X-101	3.2 x 2.5	0.6	24 to 24	10	25	-40°C to +125°C
ABM9	4.0 x 2.5	0.8	12 to 32	10	15/10	-40°C to +85°C
ABM3	5.0 x 3.2	1.3	8 to 80	15	50/20/15/10	-40°C to +125°C
ABM3B	5.0 x 3.2	1.1	8 to 125	10	100/50/20/15/10	-55°C to +125°C
ABM3C	5.0 x 3.2	1.3	10 to 50	20	30	-40°C to +85°C
ABM3X	5.0 x 3.2	0.9	24 to 24	10	25	-40°C to +125°C
ABLS6M	6.0 x 3.0	1.9	12 to 30	10	100/50/30/20/15	-40°C to +125°C
ABM7	6.0 x 3.5	1.4	8 to 50	10	100/20/15	-40°C to +105°C
ABMM2	6.0 x 3.6	1.2	7.3728 to 110	10	50/20/10	-40°C to +125°C
ABLS7M	7.0 x 4.1	2.3	12 to 40	10	100/50/30/20/15	-40°C to +125°C
ABLS7M2	7.0 x 4.1	2.0	12 to 40	10	100/50/30/20/15	-40°C to +125°C
ABMM	7.0 x 5.0	1.3	6 to 125	10	20/15/10	-40°C to +85°C
ABMM1	7.2 x 5.2	1.2	6 to 125	10	50/20/15	-40°C to +125°C
ABM2	8.0 x 4.5	1.4	8 to 100	20/10	100/80/30/15/10	-55°C to +125°C
ABLS	11.4 x 4.7	4.2	3.579545 to 75	10	50/15	-40°C to +125°C
ABLS2	11.4 x 4.7	3.3	3.579545 to 70	10	50/15	-40°C to +125°C
ABLS3	11.4 x 4.7	2.5	3.579545 to 70	10	50/15	-40°C to +125°C

32kHz Quartz Crystals (Tuning Fork Crystals)

SERIES	PACKAGE SIZE (mm)	HEIGHT (mm)	FREQUENCY RANGE (kHz)	TOLERANCE OPTIONS (+/- ppm)	ESR MAX (k Ω)	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE	PACKAGE TYPE
ABS05	1.6 x 1.0	0.5	32.768	10	90	-40°C to +85°C	SMD
ABS06	2.0 x 1.2	0.6	32.768	10	90, 110	-55°C to +125°C	SMD
ABS06-107-32.768kHz	2.0 x 1.2	0.6	32.768	20	80	-40°C to +85°C	SMD
ABS07	3.2 x 1.5	0.9	32.768	10	60	-55°C to +125°C	SMD
ABS07-LR	3.2 x 1.5	0.9	32.768	20	50	-40°C to +85°C	SMD
ABS07L	3.2 x 1.5	0.4	32.768	20	80	-40°C to +85°C	SMD
ABS07-120-32.768kHz	3.2 x 1.5	0.9	32.768	20	60	-40°C to +85°C	SMD
ABS09	4.1 x 1.5	0.9	32.768	10	70	-40°C to +85°C	SMD
ABS10	4.9 x 1.8	1.0	32.768	10	70	-40°C to +85°C	SMD
AB26T	6.2 x 2.1	2.1	32.768	20	35	-10°C to +60°C	Thru Hole
ABS13	6.9 x 1.4	1.3	32.768	20	65	-40°C to +85°C	SMD
ABS25	8.0 x 3.8	2.5	30 to 100	10	50	-40°C to +85°C	SMD
AB38T	8.3 x 3.2	3.2	32.768	15	30	-20°C to +70°C	Thru Hole

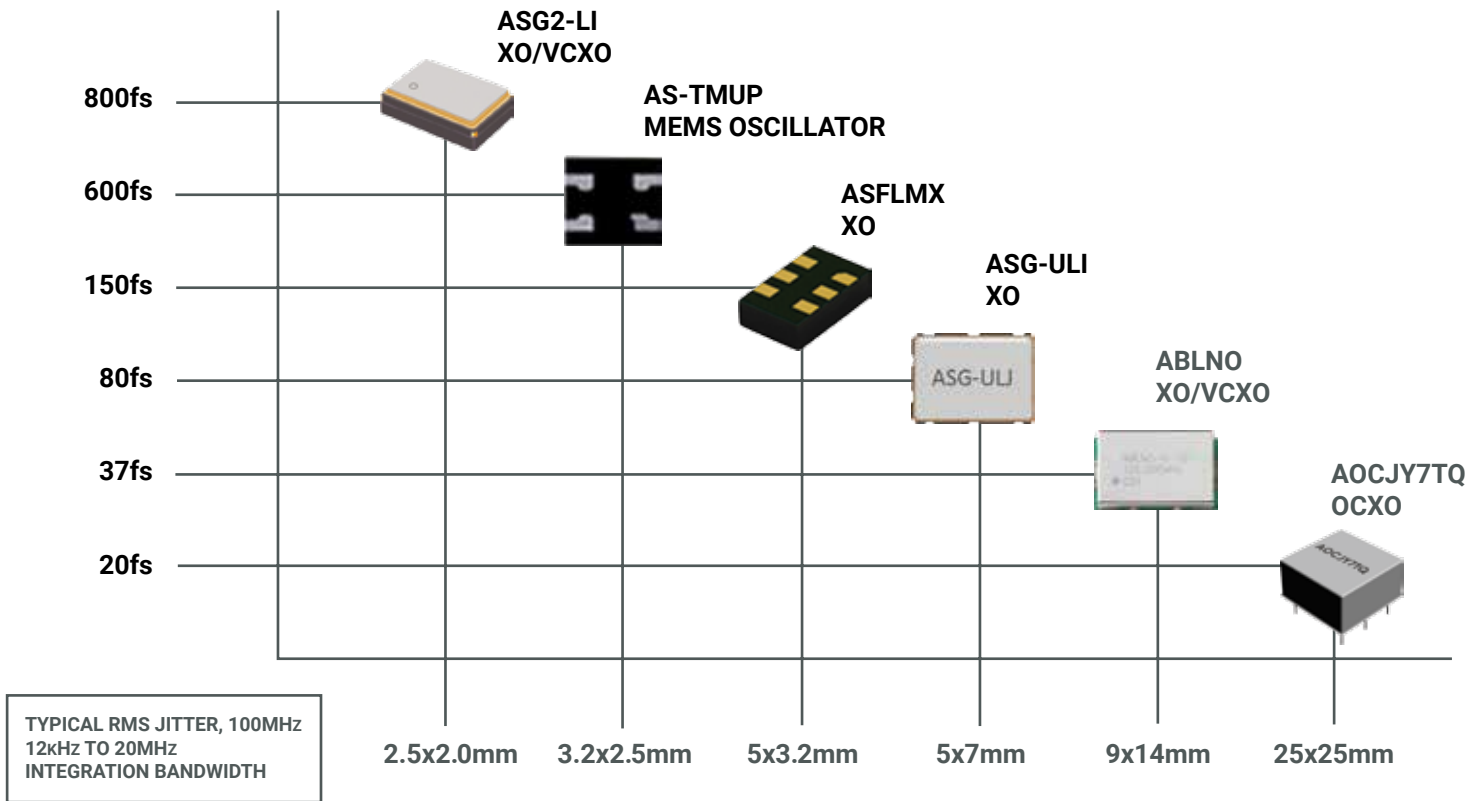
General Purpose Quartz Crystal Oscillators (XO)

Fixed frequency quartz crystal oscillators are available with a variety of temperature stability options and single-ended or differential output logic types. VDD operation up to 5V and legacy through-hole package options available. Contact Abracon for additional information.

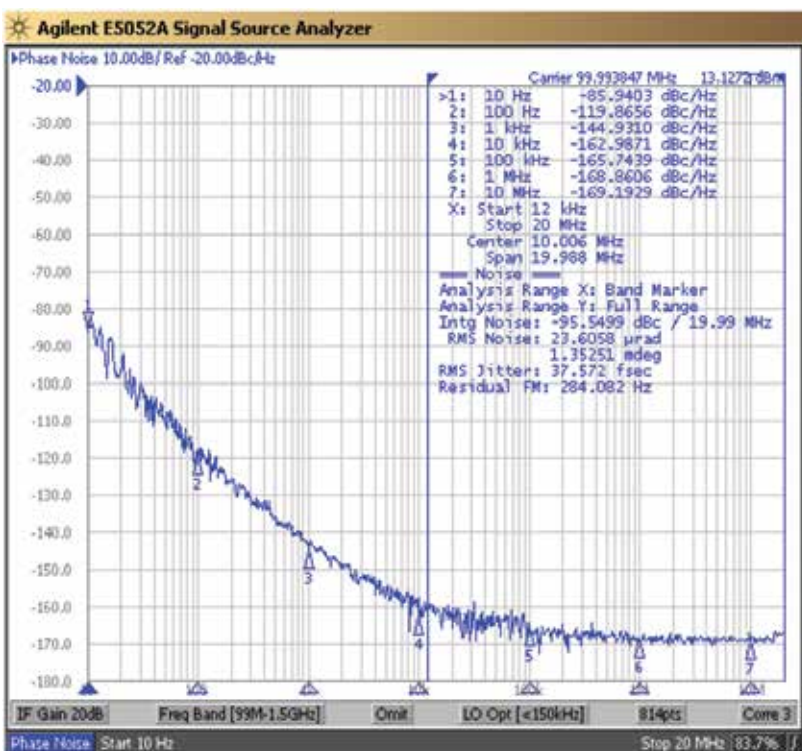
SERIES	PACKAGE SIZE (mm)	HEIGHT (mm)	FREQUENCY RANGE (MHz)	VDD OPTIONS (V)	OUTPUT LOGIC TYPE	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE	PACKAGE TYPE
ASCO	1.6 x 1.2	0.7	7 to 80	1.8, 2.5, 3.3	LVC MOS	-40°C to +85°C	SMD
ASA	2.0 x 1.6	0.7	1 to 80	1.8, 2.5, 3.3	LVC MOS, TTL	-40°C to +85°C	SMD
ASD	2.5 x 2.0	1.0	0.75 to 60	1.0, 1.8, 2.5, 3.0, 3.3	LVC MOS	-40°C to +125°C	SMD
ASG2-C	2.5 x 2.0	1.0	8 to 200	2.5, 3.3	LVC MOS	-40°C to +85°C	SMD
ASG2-D	2.5 x 2.0	1.0	8 to 1500	2.5, 3.3	LVDS	-40°C to +85°C	SMD
ASG2-LJ	2.5 x 2.0	1.0	8 to 1500	2.5, 3.3	LVC MOS, LVPECL, LVDS	-40°C to +85°C	SMD
ASG2-P	2.5 x 2.0	1.0	8 to 1500	2.5, 3.3	LVPECL	-40°C to +85°C	SMD
ASE	3.2 x 2.5	1.2	0.625 to 200	3.3, 2.5, 1.8, 1.35, 1	LVC MOS	-40°C to +85°C	SMD
ASFL1	5.0 x 3.2	1.3, 1.4, 1.1	0.321 to 133.33, 0.321 to 125, 0.5 to 125	3.3, 2.5, 1.8	LVC MOS, TTL	-40°C to +85°C	SMD
ABFM	7.0 x 5.0	1.8	30 to 280	3.3, 2.5	LVC MOS, LVDS, LVPECL	-40°C to +85°C	SMD
ASG-C	7.0 x 5.0	2.0	10 to 250	2.5, 3.3	LVC MOS	-40°C to +85°C	SMD
ASG-D	7.0 x 5.0	2.0	10 to 1500	2.5, 3.3	LVDS	-40°C to +85°C	SMD
ASG-P	7.0 x 5.0	2.0	10 to 1500	2.5, 3.3	LVPECL	-40°C to +85°C	SMD
ASV	7.0 x 5.0	1.8	0.312 to 200	1.8, 2.5, 3.3	LVC MOS, TTL	-40°C to +85°C	SMD
ASV1	7.0 x 5.0	1.6	0.5 to 200	1.8, 2.5, 3.3	LVC MOS, TTL	-40°C to +85°C	SMD
ASV2	7.0 x 5.0	1.4	0.5 to 133	1.8, 2.5, 3.3	LVC MOS, TTL	-40°C to +85°C	SMD
ACH	12.7 x 12.7	5.6	0.032768 to 200	5	LVC MOS, TTL	-40°C to +85°C	Thru Hole
ACHL	13.2 x 13.2	5.5	0.4 to 160	3.3	HCMOS, TTL	-40°C to +85°C	Thru Hole
ACHL1	13.2 x 13.2	5.5	1 to 80	2.5	HCMOS, TTL	-40°C to +85°C	Thru Hole
ACO	20.2 x 12.6	5.1	0.32 to 200	5	HCMOS, TTL	-40°C to +85°C	Thru Hole
ACOL	20.2 x 12.8	6.0	0.32 to 200	3.3	HCMOS, TTL	-40°C to +85°C	Thru Hole

Industry Leading Ultra-low Jitter Solutions

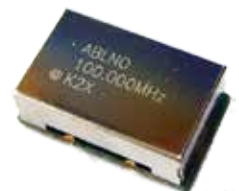
For Communications, Servers, Cloud Computing, Networking, and RF



Industry Leading ABLNO Series Offers 37 Fsec RMS Phase Jitter



ABRACON's flagship ABLNO series offers ultra-low phase noise fixed clock or voltage controlled crystal oscillator (VCXO) solutions in industry standard 9x14mm footprint. With 37fs typical rms jitter over 12 kHz to 20MHz bandwidth @ 100MHz carrier, ABLNO is ideal for performance driven communications, RF, wireless backhaul, and instrumentation applications.



Applications

- Wireless backhaul
- RF and radar
- Satellite Modem Communication Systems
- COTS - Military communications
- Low Phase Noise Signal Sources
- High Definition TV
- Test & Measurement
- Ultra Low Jitter RF Communication Circuitry

Precision XO/VCXO/TCXO/OCXO's Offering sub 0.1ps to 0.5ps rms Phase Jitter

Low sub-0.1ps to 0.5ps rms jitter oscillators and precision TCXO and OCXO options available for communications, RF, radar, instrumentation and data center/server applications.

SERIES	PACKAGE SIZE (mm)	HEIGHT (mm)	FREQUENCY RANGE (MHz)	VDD OPTIONS (V)	OUTPUT LOGIC TYPE	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE	TYPE
ASFLMX	5.0 x 3.2	1.4	25 to 860	2.375 ~ 3.3V	LVC MOS, LVPECL, LVDS, HCSL	-40°C to +85°C	XO
ASG-ULJ	7.0 x 5.0	1.5	1 to 705.8	3.3, 2.5	LVC MOS, LVDS, LVPECL	-40°C to +85°C	XO
ASVMX	7.0 x 5.0	1.4	25 to 860	2.375 ~ 3.3V	LVC MOS, LVPECL, LVDS, HCSL	-40°C to +85°C	XO
ABNM	7.0 x 5.0	1.8	1 to 160	3.3, 2.5	LVC MOS, LVDS, LVPECL	-40°C to +85°C	XO
ABLJO	14.3 x 8.7	5.5	80 to 200	3.3	LVC MOS	-40°C to +85°C	XO
ABLNO	14.3 x 8.7	5.5	50 to 156.25	3.3	LVC MOS	-40°C to +85°C	XO
ASVV	7.0 x 5.0	1.6	1 to 200	3.3	LVC MOS, TTL	-40°C to +85°C	VCXO
ASTX-13	2.0 x 1.6	0.8	13 to 52	1.8, 2.8, 3.0	Clipped Sine	-40°C to +85°C	TCXO/VCTCXO
ASVTX-13	2.0 x 1.6	0.8	13 to 52	1.8, 2.8, 3.0	Clipped Sine	-40°C to +85°C	TCXO/VCTCXO
ASTX-12	2.5 x 2.0	0.9	13 to 52	1.8, 2.5, 2.8, 3.0	Clipped Sine	-40°C to +85°C	TCXO/VCTCXO
ASTX-H12	2.5 x 2.0	0.9	3.2 to 55	3.3, 2.8, 2.5	HCMOS	-40°C to +85°C	TCXO/VCTCXO
ASTX-11	3.2 x 2.5	0.9	10 to 40	2.5, 2.8, 3.0, 3.3	Clipped Sine	-40°C to +85°C	TCXO/VCTCXO
ASTX-H11	3.2 x 2.5	1.0	2.5 to 55	3.3, 2.8, 2.5	HCMOS	-40°C to +85°C	TCXO/VCTCXO
ASTX-09	5.0 x 3.2	1.5	6 to 45	2.5, 3.0, 3.3, 5.0	Clipped Sine	-40°C to +85°C	TCXO/VCTCXO
ASTX-H09	5.0 x 3.2	1.2	5 to 50	3.3, 3.0	HCMOS	-40°C to +85°C	TCXO/VCTCXO
ASGTX	9.0 x 7.0	2.2	10 to 1500	3.3	LVC MOS, LVPECL, LVDS	-40°C to +85°C	TCXO/VCTCXO
AST3TQ	7.0 x 5.0	1.9	10 to 40	3.3	LVC MOS, Clipped Sine Wave	-55°C to +95°C, -40°C to +75°C	Stratum-III, TCXO/VCTCXO
AOCJY1	20.8 x 13.2	8.2	10 to 100	3.3, 5	LVC MOS, Sinewave	-40°C to +75°C	OCXO
AOCJY2	21 x 21	11.0	10 to 100	3.3, 5	LVC MOS, Sinewave	-40°C to +75°C	OCXO
AOCJY	25.4 x 22.1	12.7	10 to 100	3.3, 5	LVC MOS, Sinewave	-40°C to +75°C	OCXO
AOCJY7	25.4 x 25.4	12.7	100 to 100	12	Sinewave	-20°C to +70°C	OCXO
AOCJY7TQ	25.5 x 25.5	12.7	100 to 100	12	Sinewave	-40°C to +85°C	OCXO
AOCTQ5	36.1 x 27.1	12.1	10 to 10	5	CMOS, Sinewave	-55°C to +85°C	OCXO
AOCJY4	36.1 x 27.2	13.0	10 to 40	5, 12	LVC MOS, Sinewave	-40°C to +75°C	OCXO
AOCJY5	36.1 x 27.2	13.0	10 to 10	12	Sinewave	-55°C to +85°C	OCXO
AOCJY6	51 x 41	25.0	10 to 10	12	Sinewave	-20°C to +70°C	OCXO
AOCJYR	9.7 x 7.5	4.3	10 to 10	3.3	LVC MOS	-40°C to +85°C	OCXO

kHz xtal, the OLD



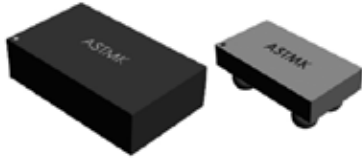
watch-MEMS®

kHz MEMS OSC, the NEW



μA

IoT • Wearables



ASTMK, the worlds smallest 32kHz clocking solution

The ASTMK saves space in wearables and IoT applications. It is shock and vibration proof, robust and provides temperature compensated options down to +/-5ppm. For more information, contact your local Abracon representative.

Quartz & watch-MEMS 32.768 kHz Clock Oscillators

SERIES	PACKAGE SIZE (mm)	HEIGHT (mm)	FREQUENCY RANGE (kHz)	VDD OPTIONS (V)	TECHNOLOGY	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE
ASTMK	2.0 x 1.2mm, 1.54 x 0.84mm	0.6	0.001 to 32.768	1.5~3.63	MEMS	-40°C to +85°C
ASTMKJ	1.54 x 0.84mm	0.6	32.768	1.5~3.63	MEMS	-40°C to +85°C
ASTMTXK	1.54 x 0.84mm	0.6	32.768	1.5~3.63	MEMS	-40°C to +85°C
ASTMK06	2.0 x 1.2mm, XTAL footprint compatible	0.6	32.768	1.5~3.63	MEMS	-40°C to +85°C
ASTMKH	2.0 x 1.2mm	0.6	32.768	1.5~3.63	MEMS	-40°C to +85°C
ASAK	2.0 x 1.6mm	0.7	32.768	1.8, 2.5, 3.3	Quartz	-40°C to +85°C
ASDK	2.5 x 2.0mm	0.95	32.768	1.8, 2.5, 3.3	Quartz	-40°C to +85°C
ASH7K	3.2 x 1.5mm	1	32.768	3.3	Quartz	-40°C to +85°C
ASH7KW	3.2 x 1.5mm	1	32.768	1.2~5.5	Quartz	-40°C to +85°C
ASEK	3.2 x 2.5mm	1.2	32.768	1.8, 2.5, 3.3	Quartz	-40°C to +85°C
ASHEK	3.2 x 2.5mm	0.9	32.768	1.5, 1.8, 2.8, 3.3, 5.0	Quartz	-40°C to +85°C
ASFLK	5.0 x 3.2mm	1.3	32.768	2.5, 3.0, 3.3, 5.0	Quartz	-40°C to +85°C
ASVK	7.0 x 5.0mm	1.8	32.768	2.8, 3.0, 3.3	Quartz	-40°C to +85°C

High Performance MEMS

High performance 0.6ps typical rms phase jitter for communications, networking, PCI Express, data center, server applications.

PRODUCT SERIES	PACKAGE SIZE (mm)	HEIGHT (mm)	FREQUENCY RANGE (MHz)	VDD OPTIONS (V)	OUTPUT LOGIC TYPE	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE
ASTMUPCD	2.7 X 2.4	0.75	1 to 220	1.8, 2.5, 2.8, 3.3	LVC MOS	-40°C to +85°C
ASTMUPCE	3.2 x 2.5	0.75	1 to 220	1.8, 2.5, 2.8, 3.3	LVC MOS	-40°C to +85°C
ASTMUPLDE	3.2 x 2.5	0.75	1 to 625	2.5, 3.0, 2.25-3.63	LVDS	-40°C to +85°C
ASTMUPLPE	3.2 x 2.5	0.75	1 to 625	2.5, 3.0, 2.25-3.63	LVPECL	-40°C to +85°C
ASTMUPCFL	5.0 x 3.2	0.75	1 to 220	1.8, 2.5, 2.8, 3.3	LVC MOS	-40°C to +85°C
ASTMUPLDFL	5.0 x 3.2	0.75	1 to 625	2.5, 3.0, 2.25-3.63	LVDS	-40°C to +85°C
ASTMUPLPFL	5.0 x 3.2	0.75	1 to 625	2.5, 3.0, 2.25-3.63	LVPECL	-40°C to +85°C
ASTMUPCV	7.0 x 5.0	0.9	1 to 220	1.8, 2.5, 2.8, 3.3	LVC MOS	-40°C to +85°C
ASTMUPLDV	7.0 x 5.0	0.9	1 to 625	2.5, 3.0, 2.25-3.63	LVDS	-40°C to +85°C
ASTMUPLPV	7.0 x 5.0	0.9	1 to 625	2.5, 3.0, 2.25-3.63	LVPECL	-40°C to +85°C

General Purpose MEMS Oscillators

Abrakon's MEMS oscillator product lines feature high-temperature operation with stability options as low as ± 10 ppm, resistance to shock and vibration and compact form factors enabling space savings in IoT and wearable applications.

PRODUCT SERIES	PACKAGE SIZE (mm)	HEIGHT (mm)	FREQUENCY RANGE (MHz)	VDD OPTIONS (V)	OUTPUT LOGIC TYPE	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE
ASTMHTA	2.0 x 1.6	0.75	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-55°C to +125°C
ASTMLPA	2.0 x 1.6	0.75	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-40°C to +85°C
ASD MB	2.5 x 2.0	0.85	1 to 150	1.8~3.3	LVC MOS	-40°C to +105°C
ASD MDC	2.5 x 2.0	0.85	2.3 to 170	2.25~3.6	LVC MOS	-55°C to +125°C
ASD MP	2.5 x 2.0	0.85	10 to 460	2.25~3.6	LVC MOS, LVDS, LVPECL, HCSL	-55°C to +125°C
ASTMHTD	2.5 x 2.0	0.75	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-55°C to +125°C
ASTMLPD	2.5 x 2.0	0.75	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-40°C to +85°C
ASEMB	3.2 x 2.5	0.85	1 to 150	1.8~3.3	LVC MOS	-40°C to +105°C
ASEMCC	3.2 x 2.5	0.85	10 to 170	2.25~3.6	LVC MOS	-55°C to +125°C
ASEMP	3.2 x 2.5	0.85	10 to 460	2.25~3.6	LVC MOS, LVDS, LVPECL, HCSL	-55°C to +125°C
ASTMHTE	3.2 x 2.5	0.75	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-55°C to +125°C
ASTMLPE	3.2 x 2.5	0.75	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-40°C to +85°C
ASTMLPT	3.5 x 3.0	0.25	1 to 110	1.8, 2.5, 2.8, 3.3	LVC MOS	-40°C to +85°C
ASFLMB	5.0 x 3.2	0.85	1 to 150	1.8~3.3	LVC MOS	-40°C to +105°C
ASTMHTFL	5.0 x 3.2	0.75	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-55°C to +125°C
ASTMLPFL	5.0 x 3.2	0.75	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-40°C to +85°C
ASTMHTV	7.0 x 5.0	0.9	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-55°C to +125°C
ASTMLPV	7.0 x 5.0	0.9	1 to 137	1.8, 2.5, 2.8, 3.0, 3.3	LVC MOS	-40°C to +85°C
ASVMB	7.0 x 5.0	0.85	1 to 150	1.8~3.3	LVC MOS	-40°C to +105°C
ASVMP	7.0 x 5.0	0.85	10 to 460	2.25~3.6	LVC MOS, LVDS, LVPECL, HCSL	-55°C to +125°C

Automotive and Industrial Grade Crystals

SERIES	TYPE	FOOTPRINT	FREQUENCY RANGE	WIDEST TEMP OPTION
ABM11AIG	XTAL	2.0 x 1.6mm	16 to 50MHz	-40°C to 125°C
ABM10AIG	XTAL	2.5 x 2.0mm	12 to 62.5MHz	-40°C to 125°C
ABS07AIG	XTAL	3.2 x 1.5mm	32.768 kHz	-40°C to 125°C
ABM8GAIG	XTAL	3.2 x 2.5mm	10 to 30MHz	-40°C to 125°C
ABM3CAIG	XTAL	5.0 x 3.2mm	8 to 20MHz	-40°C to 150°C
ABM4AAIG	XTAL	7.0 x 5.0mm	6 to 25MHz	-40°C to 125°C
ASAAIG	XO	2.0 x 1.6mm	4 to 50MHz	-40°C to 105°C
ASDAIG	XO	2.5 x 2.0mm	20 to 48MHz	-40°C to 125°C
ASH7KAIG	XO	3.2 x 1.5mm	32.768 kHz	-40°C to 85°C
ASEAIG	XO	3.2 x 2.5mm	1.75 to 60MHz	-40°C to 125°C
ASVTXAIG-12	VCTCXO	2.5 x 2.0mm	13 to 52MHz	-40°C to 85°C
ASVTXAIG-13	VCTCXO	2.5 x 2.0mm	13 to 52MHz	-40°C to 85°C
ASTXAIG-12	TCXO	2.5 x 2.0mm	13 to 52MHz	-40°C to 85°C
ASTXAIG-13	TCXO	2.5 x 2.0mm	13 to 52MHz	-40°C to 85°C

TS16949 Certified AEC-Q200 Qualified PPAP Level I/II/III Ready

Applications requiring the highest levels of quality and reliability benefit from our TS16949 qualified and PPAP ready crystals and oscillators.



ASGTX high frequency TCXO/VCTCXO's offer low phase noise with ± 1 ppm stability over 10MHz to 1.5GHz

TCXO's and VCTCXO's are traditionally available over a narrow frequency range below 52MHz. This imposes limitations on non-standard frequencies and impacts time to market for end equipment manufacturers. The ASGTX series eliminates this limitation by offering functionality with any frequency available in short lead time from 10MHz to 1.5GHz.



ASGTX: High frequency TCXO/VCTCXO | Tight Stability | Economical | 1 to 5 days Lead-time

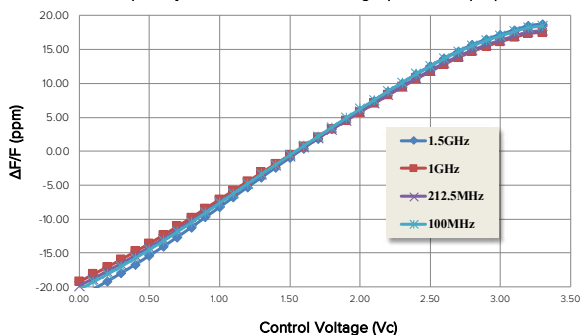
Applications:

- Satellite Modem Communications Systems
- COTS - Military Communication Circuitry
- WiMax
- LTE, BTS
- CATV, LAN, LMDS
- Test & Measurement Equipment
- Avionics
- A/D and D/A Converters
- DDS based architecture
- Phase Locked Loops
- Point-to-Point Communication Networks

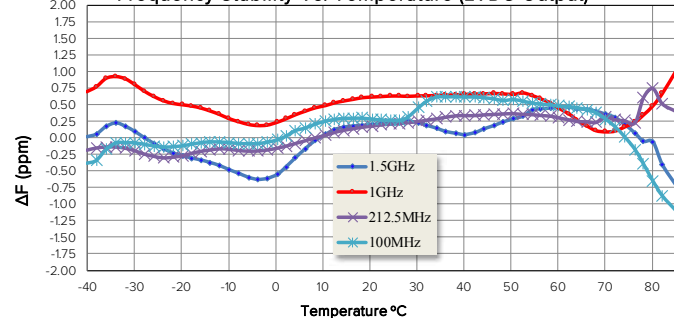
What ASGTX series offers designers ?

- Any frequency from 10MHz to 250 MHz: LCVMOS
- Any frequency from 10 MHz to 1.50GHz: LVDS..LVPECL
- Wide operating temperature range (-40°C to +85°C)
- ± 1.00 ppm over -30°C to + 70°C and ± 2.00 ppm over -40C to +80C stability
- 10ppm max. All inclusive stability (including aging) over 10 years.
- 10 ppm minimum frequency pullability in VCTCXO mode
- 1ps typical rms jitter with 1,80ps maximum @1.5GHz carrier
- +3.3V (5%) operating voltage
- 9.0 x 7.0 x 2.24 mm RoHS Compliant SMT package

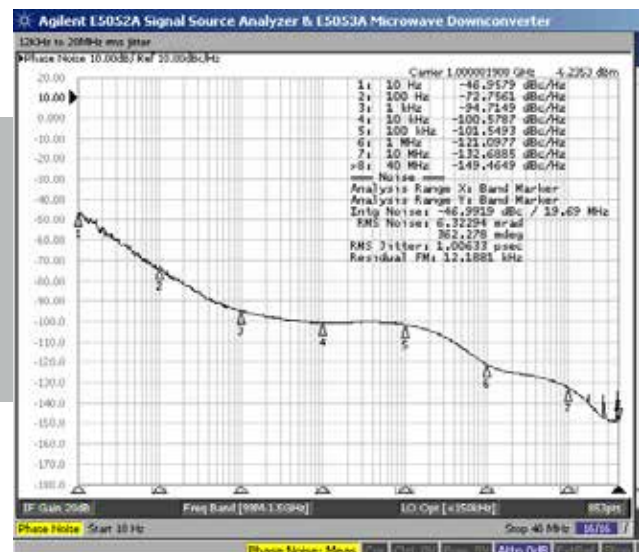
Frequency Pull Vs. Control Voltage (LVDS Output)



Frequency Stability Vs. Temperature (LVDS Output)



**1 PS RMS Jitter at
1.00 GHz Carrier**



The Perfect Antenna Awaits You



ART SERIES RFID

ARTXXX-IC Series are passive UHF RFID tags are designed for use on multiple surface materials including metal. These tags are passive, have read ranges up to 9.0 meters and incorporate Alien H3 IC's with 96 bits of EPC and 512 bits of user memory. The tags operate at 915MHz and comply with the ISO 18000-6C/EPC Class1 Gen2 protocol. Key attributes of ceramic tags are read range, robustness, ability to operate over wide temperature ranges and their ability to be attached to metal objects unlike film tags. The ARTXXX-IC Series antennas are ideal for asset tracking applications in industrial, heavy machinery, cloud computing, and transportation segments.

RFID Solutions

COMPLETE RFID TAG		PASSIVE PATCH ANTENNA		RFID READER ANTENNA	
PN	BANDS AVAILABLE (MHz)	PN	BANDS AVAILABLE (MHz)	PN	BANDS AVAILABLE (MHz)
ART923X1015B3YZ10-IC ART915X3030YZ30-IC ART915X252503MA-IC ART915X2509EP60-IC ART915X250903AM-IC ART915X2117225TX21-IC ART915X1620TX16-IC ART915X130930TX13-IC ART915X130930TX13-IC ART915X100503JA-IC ART915X100202TO-IC ART915X050503OP-IC	902~928MHz	APAE868R2540JBDB2-T (EU) APAE915R2540ABDB1-T (USA) APAES868R8060C16-T (EU) APAES915R6460C16-T (USA) APAES915R80C16-T (USA) APAES923R3640C16-T (USA) APAES923R4560C16-T (USA)	868.00MHz 915.00MHz 868.00MHz 915.00MHz 915.00MHz 923.00MHz 923.00MHz	ARRAN5-868.000MHZ ARRAN5-915.000MHZ ARRCN5-868.000MHZ ARRCN5-915.000MHZ ARRRN5-868.000MHZ ARRRN5-915.000MHZ ARRSN5-868.000MHZ ARRSN5-915.000MHZ ARRTN5-868.000MHZ ARRTN5-915.000MHZ ARRUN5-868.000MHZ ARRUN5-915.000MHZ	868 ±3MHz 915 ±3MHz 868 ±3MHz 915 ±3MHz 868 ±3MHz 915 ±3MHz 868 ±3MHz 915 ±3MHz 868 ±3MHz 915 ±3MHz 868 ±3MHz 915 ±3MHz

Bluetooth Modules

Abrakon offers a selection of bluetooth modules supporting V 1.2 to V4.1 compliance. Design in support is available. To learn more about the entire offering, please visit: www.abracon.com



ABBTM-NVC-MDCS71-MESH

- Bluetooth Spec v2.0+EDR Compliant
- Complete 2.4GHz Bluetooth® System
- 1.8V operation for Bluetooth® core
- Profiles Supported: SPP
- Internal antenna



ABBTM-NVC-MDCS71

- Single mode Bluetooth v4.1 low energy
- 4 dBm TX power/ -92.5dBm RX sensitivity, RSSI monitoring for proximity applications
- Support iBeacon, GATT-based Profile: Proximity, Find Me, Heart Rate, HID and etc.
- UART/I2C master/SPI master interfaces
- 9 digital PIOs/3 analog IOs
- 10bit ADC IOs
- Wakeup interrupt and watchdog timer
- SMT pads for easy and reliable PCB mounting, Internal chip antenna
- 19.50x12.50x2.4mm
- FCC ID: OC3BM1871*
- QDID: B020997*

*Note: ABBTM-NVC-MDCS71 crosses to NovaComm P/N: NVC-MDCS71. BQB/FCC certification documentation is under P/N: NVC-MDCS71



Ask about our comprehensive list of compatible Ethernet PHYs.

Ethernet PHY and magnetics compatibility resource is available NOW at www.abracon.com/ALAN_PHY. ALAN series magnetics are compatible with hundreds of standard PHY IC's

Discrete Ethernet LAN Transformers

PART SERIES	SPEED	FEATURE	NUMBER OF PORTS	TEMPERATURE (°C)
ALAN-101	10/100 Base-T		Single	-40°C to 85°C
ALAN-102	10/100 Base-T	PoE	Single	-40°C to 85°C
ALAN-2201	10/100 Base-T	PoE	Single	-40°C to 85°C
ALAN-2202	10/100 Base-T	PoE+	Single	-40°C to 85°C
ALAN-2204	10/100 Base-T	PoE+	Single	-40°C to 85°C
APT-106	10/100 Base-T		Single	-40°C to 85°C
ALAN-508	10/100 Base-T		Single	-40°C to 85°C
ALAN-1002	1000 Base-T		Single	-40°C to 85°C
ALAN-2301	1000 Base-T	PoE+	Single	-40°C to 85°C
ALAN-409	10/100 Base-TX		Quad	-40°C to 85°C

Featured RF Inductor Solutions

These solutions are optimal for RF applications including VCOs, impedance matching networks and filters. Abracon offers a variety of technologies including wire-wound, thin film, air coil, ceramic and leaded.

SERIES	INDUCTOR TYPE	INDUCTANCE RANGE (NH)	CURRENT RATING RANGE (MA)	DCR RANGE (Ω)	SMALLEST FOOTPRINT AVAILABLE
ATFC	Thin Film	0.1 to 33	75 to 850	0.05 to 3.5	0.6 x 0.3 x 0.23
AIMC	Ceramic	1 to 220	50 to 1000	0.05 to 3.6	0.6 x 0.3 x 0.3
AIAC	Air Coil	2.5 to 538	1 to 4800	0.8 to 42.2	2.85 x 1.80 x 2.10
AIAM	Axial Leaded	22nH to 1.0mH	28 to 2400	0.025 to 72	2.41 x 6.35
AISC-0402	Wire-Wound	1 to 150	80 to 1360	1.12 to 2.9	1.0 x 0.5 x 0.5
AISC-0402F	Wire-Wound	18 to 200	390 to 1400	0.046 to 0.47	1.1 x 0.6 x 0.6
AISC-0402HP	Wire-Wound	2 to 68	320 to 2100	0.038 to 0.95	1.00 x 0.55 x 0.50
AISC-0603	Wire-Wound	1.8 to 560	70 to 1000	0.043 to 8.1	1.80 x 1.12 x 1.02
AISC-0603F	Wire-Wound	47 to 22000	70 to 1200	0.06 to 11.4	1.6 x 1.0 x 1.0
AISC-0603HC	Wire-Wound	1.6 to 24	1800 to 2400	0.03 to 0.105	1.80 x 1.12 x 1.02
AISC-0603HP	Wire-Wound	1.7 to 390	180 to 2100	0.033 to 3.8	1.80 x 1.12 x 1.02
AISC-0805	Wire-Wound	12 to 1000	150 to 600	1 to 2.3	2.3 x 1.7 x 1.55
AISC-0805HQ	Wire-Wound	2.5 to 51	1000 to 1600	0.02 to 0.12	2.29 x 1.73 x 1.52
AISC-0805LP	Wire-Wound	1.8 to 1000	1.7 to 800	0.03 to 3.5	2.29 x 1.73 x 1.03
AISC-1008	Wire-Wound	4.7 to 8200	150 to 1000	0.08 to 1.68	2.92 x 2.79 x 2.29
AISC-1008F	Wire-Wound	330 to 10000	300 to 700	0.17 to 2.95	2.92 x 2.79 x 2.29
AISC-1008HQ	Wire-Wound	3 to 100	1000 to 1600	0.04 to 0.16	2.60 x 2.10 x 1.70
AISC-1008LP	Wire-Wound	3.3 to 1000	300 to 1000	0.03 to 3.7	2.92 x 2.79 x 1.4
AISC-1206	Wire-Wound	3.3 to 1200	300 to 1000	0.07 to 3.2	3.56 x 2.16 x 1.52
AISC-1210	Wire-Wound	3.9 to 8600	200 to 1000	0.05 to 9	3.65 x 2.95 x 2.70

Single Port Shielded POE, POE+ and POE++ RJ45 Jacks with Integrated Magnetics



SERIES	MOUNT	FUNCTIONALITY	LED	ORIENTATION
ARJ-139	Thru Hole	1000 Base-T, PoE++	Green, Yellow - Green	90° Angle (Right)
ARJ-199	Thru Hole	10/100 Base-T, PoE+	Green, Orange - Yellow	90° Angle (Right)
ARJ-146	Thru Hole	10/100/1000 Base-T, PoE	No LED	90° Angle (Right)
ARJP11A	Thru Hole	10/100 Base-TX, PoE	Green - Yellow	90° Angle (Right)
ARJP11C	Thru Hole	10/100 Base-T, PoE	Green - Yellow	90° Angle (Right)

Single Port Shielded 10G Base-T RJ45 Jacks with integrated Magnetics

SERIES	MOUNT	FUNCTIONALITY	LED	ORIENTATION
ARJE-1034	SMD	10G Base-T	No LED	90° Angle (Right)
ARJ-128	Thru Hole	10G Base-T	Green - Yellow	90° Angle (Right)

Shielded RJ45 Jacks with Integrated Magnetics & USB Combo



SERIES	MOUNT	FUNCTIONALITY	LED	ORIENTATION
ARJ-150A	Thru Hole	1000 Base-T w/ 2x USB	Green - Yellow	90° Angle (Right)
ARJ-150C	Thru Hole	1000 Base-T w/ 2x USB	Green, Orange - Yellow	90° Angle (Right)
ARJU31B	Thru Hole	10/100/1000 Base-TX w/ 2x USB	Green - Green, Orange	90° Angle (Right)
ARJ-196	Thru Hole	10/100/1000 Base-T w/ 1x USB, AutoMDIX	Green, Orange - Yellow	90° Angle (Right)
ARJU31A	Thru Hole	10/100 Base-TX w/ 2x USB	Green, Orange - Yellow	90° Angle (Right)
ARJ-150B	Thru Hole	10/100 Base-T w/ 2x USB	Green - Yellow	90° Angle (Right)
ARJE-0029	Thru Hole	10/100 Base-T w/ 2x USB	Green, Orange - Yellow	90° Angle (Right)
ARJ-169	Thru Hole	10/100 Base-T w/ 1x USB, AutoMDIX	Green, Orange - Yellow	90° Angle (Right)
ARJE-0032	Thru Hole	10/100 Base-T w/ 1x USB	Green, Orange - Yellow	90° Angle (Right)

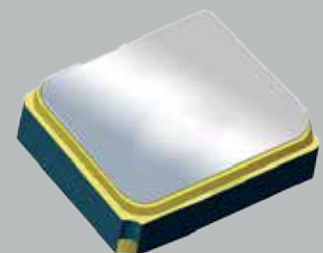


Single Port Shielded RJ45 Jacks with Integrated Magnetics

PRODUCT SERIES	MOUNT	FUNCTIONALITY	ORIENTATION
ARJE-0040	PIH Thru Hole	10/100/1000 Base-TX	90° Angle (Right)
ARJE-0041	PIH Thru Hole	10/100 Base-T	90° Angle (Right)
ARJ-102S	SMD	10/100/1000 Base-T, SMD	90° Angle (Right)
ARJE-0034	SMD	10/100 Base-T, SMD	90° Angle (Right)
ARJ-101D	Thru Hole	10/100 Base-T	90° Angle (Right)
ARJ11A	Thru Hole	10 Base-T	90° Angle (Right)
ARJ11B	Thru Hole	10/100 Base-T	90° Angle (Right)
ARJ11C	Thru Hole	10/100/1000 Base-T	90° Angle (Right)
ARJ11D	Thru Hole	10/100 Base-T	90° Angle (Right)
ARJ11E	Thru Hole	10/100/1000 Base-TX	90° Angle (Right)
ARJ11F	Thru Hole	10/100/1000 Base-T	90° Angle (Right)
ARJ11G	Thru Hole	10/100 Base-T	Vertical
ARJ-148	Thru Hole	10/100/1000 Base-TX	Vertical
ARJ-205	Thru Hole	10/100/1000 Base-TX	90° Angle (Right)
ARJE-0025	Thru Hole	10/100/1000 Base-T, Low Profile	90° Angle (Right)
ARJE-0026	Thru Hole	10/100 Base-T	90° Angle (Right)
ARJE-0027	Thru Hole	10/100/1000 Base-T	90° Angle (Right)
ARJE-0028	Thru Hole	10/100 Base-T	90° Angle (Right)
ARJE-0030	Thru Hole	10/100/1000 Base-T	90° Angle (Right)
ARJE-0031	Thru Hole	10/100 Base-T	90° Angle (Right)
ARJE-0051	Thru Hole	10/100/1000 Base-T, AutoMDIX	Vertical

Miniature 1.4x1.1mm & 2.0x1.6mm SAW band-pass filters available over 719MHz to 2.4GHz

Improving selectivity for PCS, GPS, ZigBee, Bluetooth & other wireless architectures. Contact Abracon for available band-pass frequencies.





High Power Toroid Inductors by Abracon

Abracon's ATCA line of toroid inductors utilizing high efficiency, powdered iron core are designed for high power applications where through-hole assembly technology is used. Unshielded, the toroidal form-factor minimizes electromagnetic emissions. Supporting either vertical or horizontal orientations, these inductors can be placed with orthogonal orientation with respect to each other, further reducing coupling and crosstalk due to EMI. With current rating up to 10A and extended operating temperature range of -40°C to 105°C, ideal applications include industrial, high power and LED ballasts.

High Power Toroid Inductors

PART NUMBER (NOT INCLUDING INDUCTANCE CODE)	INDUCTANCE RANGE (μ H)	DCR RANGE (m Ω)	IDC RANGE (A)
ATCA-01-XXXM	20-220	21-190	1.0-5.0
ATCA-02-XXXM	22-470	14-286	1.0-5.0
ATCA-03-XXXM	25-230	16-159	1.0-5.0
ATCA-04-XXXM	50-960	22-150	1.0-5.0
ATCA-05-XXXM	90-1800	34-680	1.0-5.0
ATCA-06-XXXM	820-780	33-342	1.0-5.0
ATCA-07-XXXM	30-850	9-211	2.0-10.0
ATCA-08-XXXM	75-680	14-105	5.0-10.0



ASPI Series Low Profile SMD Power Inductors



SERIES	SIZE / DIMENSION (mm)	HEIGHT (mm)	INDUCTANCE (μ H)						@10 μ H		@1 μ H	
			0.01	0.1	1	10	100	1000	IRATED (A)	DCR (Ω)	IRATED (A)	DCR (Ω)
ASPI-2010	2.00 x 1.60	1.00		0.47	10						1.45	0.114
ASPI-2510	2.50x 2.00	1.00		6.80	10				0.56	0.712	1.75	0.070
ASPI-2515	2.50 x 2.00	1.50		0.47	10				0.75	0.445	2.20	0.049
ASPI-0309	3.00 x 3.00	0.90			2.20	47			0.43	0.640		
ASPI-0315FS	3.00 x 3.00	1.50			1.00	100			0.80	0.220	2.30	0.028
ASPI-0418FS	4.00 x 4.00	1.80		0.82	220				1.30	0.150	3.70	0.019
ASPI-4030S	4.00 x 4.00	3.00		0.91	120				1.50	0.100	4.15	0.014
ASPI-0428S	4.70 x 4.70	3.00			1.20	180			1.00	0.128		
ASPI-0530LR	5.60 x 5.20	3.00			1.50	5.60						
ASPI-0615FS	6.00 x 6.00	2.20		0.50	47				1.50	0.090		
ASPI-6045S	6.00 x 6.00	4.50		0.82	330				2.45	0.048	5.14	0.011
ASPI-0403S	6.60 x 4.45	2.92			1.00	1000			1.00	0.075	3.00	0.040
ASPI-0630LR	7.20 x 6.65	3.00		0.47	22				4.00	0.068	12.00	0.009
ASPI-7318	7.30 x 6.80	3.00		0.10	22				3.00	0.105	11.00	0.010
ASPI-8040S	8.00 x 8.00	4.20		0.82	330				3.30	0.029	6.30	0.008
ASPI-104S	10.10 x 10.00	4.00			7.00	470			3.80	0.035		
ASPI-1040HI	11.15 x 10.00	4.00		0.16	10				7.50	0.030	18.00	0.003
ASPI-1367	14.00 x 12.90	6.70		0.10	10				10.00	0.019		
ASPI-1306T	18.54 x 15.24	7.11		1.00	1000				4.30	0.031	8.60	0.009

Miniature, High Performance, and Standard Power Inductors



Abracon's ASMPH and ASMCI chip inductors feature small size, down to 1.6 x 0.8 x 0.8mm. Ideal for IoT and wearable applications.

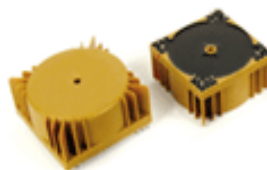


The AISM family of power inductors are ideally suited for medium to high power applications including industrial, lighting, instrumentation, and medical.

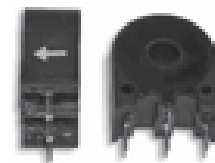
SERIES	INDUCTOR TYPE	INDUCTANCE RANGE (μH)	CURRENT RATING RANGE (mA)	DCR RANGE (Ohms)	SMALLEST FOOTPRINT AVAILABLE (mm)
ASMPH-0603	Chip	0.22 to 2.2	300 to 1250	0.1 to 0.3	1.6 x 0.8 x 0.8
ASMPH-0805	Chip	0.47 to 4.7	280 to 1200	0.08 to 0.25	2.0 x 1.25 x 0.9
ASMPH-0806	Chip	0.47 to 4.7	220 to 1500	0.08 to 0.14	2.0 x 1.6 x 0.9
ASMPH-1008	Chip	0.47 to 4.7	320 to 1500	0.04 to 0.11	2.5 x 2.0 x 0.9
ASMCI-0603	Power	0.1 to 10	50 to 700	0.14 to 0.9	1.6 x 0.8 x 0.8
ASMCI-0805	Power	0.1 to 10	60 to 1000	0.07 to 0.5	2.0 x 1.25 x 1.25
AISM-1008	Molded Wire-Wound	0.01 to 100	60 to 550	0.26 to 21	2.5 x 2.0 x 1.8
AISM-1210	Molded Wire-Wound	0.01 to 330	40 to 450	0.13 to 34	3.2 x 2.5 x 2.2
AISM-1812	Molded Wire-Wound	0.1 to 820	30 to 800	0.2 to 43	4.8 x 3.5 x 3.5
AISM-1812H	Molded Wire-Wound	1 to 330	90 to 1050	0.11 to 13	4.5 x 3.2 x 3.2
AISM-2220	Molded Wire-Wound	1 to 1000	85 to 1800	0.03 to 15	5.8 x 5.2 x 5.2
AISC-1206H	Unshielded	45nH to 0.68mH	0.3 to 4400	0.027 to 8.45	3.2 x 1.6 x 1.8
AISC-1210HS	Wire-Wound	2.2 to 33	220 to 800	1 to 5	3.2 x 3.05 x 1.3
AISC-1812H	Unshielded	1 to 2200	30 to 1080	0.08 to 65	4.5 x 3.2 x 2.6
AISC-2220H	Unshielded	120nH to 10mH	50 to 6000	0.01 to 140	5.7 x 5.0 x 4.7
AIAP	Axial Leaded	1uH to 120mH	39 to 15500	0.007 to 85	9.14 x 3.3
AIAS	Axial Leaded	100nH to 100mH	3 to 1790	0.025 to 678	10.4 x 4.11
AICC	Axial Leaded	100nH to 1mH	28 to 1380	0.08 to 20	4.06 x 2.54
AIML-0402	Ferrite	0.047 to 27	1 to 50	1 to 2	1.0 x 0.5 x 0.5
AIML-0603HC	Ferrite	3.3 to 4.7	60 to 80	0.4 to 0.5	1.6 x 0.8 x 0.8
AIML-0805	Ferrite	0.047 to 47	4 to 300	1 to 1	2.00 x 1.25 x 0.85
AIML-0805HC	Ferrite	1 to 22	40 to 400	0.085 to 0.7	2.00 x 1.25 x 1.15
AIML-1206	Ferrite	0.047 to 39	5 to 300	1 to 900	3.2 x 1.6 x 1.1
AIML-1206HC	Ferrite	1 to 10	100 to 300	0.1 to 0.5	3.20 x 1.60 x 1.10
AIPT-92	High Power Toroids	14.8 to 436.3	2000 to 10000	0.013 to 0.2	Size Vary
AIRD	Drum Core	1uH to 19mH	500 to 27000	0.002 to 0.7	21.0 x 16.5
AISR-01	Drum Core	1mH to 120mH	8 to 390	1.5 to 97	10.5 x 10.5
AISR-04	Drum Core	10 to 820	430 to 3900	0.02 to 1.3	10.5 x 10.5
AISR-875	Drum Core	10uH to 10mH	84 to 2900	0.05 to 33	7.5 x 7.8
AIUR	Drum Core	1uH to 68mH	20 to 95000	0.012 to 80	7.5 x 8.5

Custom Transformers, Current Sense, Flyback & Power

Abracon supports a broad range of magnetic technologies suitable for current sense, flyback and other power transformers. Standard and custom configurations are available. Contact Abracon for details.



Power



Current Sense



Flyback

20W Dual Mode RX Wireless Charging Coil

For Use in the SEMTECH LINKCHARGE™ 20 TSDMRX-19V20W-EVM Reference Design

Abrakon's AWCCA-RX350300-101 wireless charging coil is optimized to meet the requirements of Semtech's LinkCharge™ 20 TSDMRX-19V20W-EVM reference design board.

As part of Semtech's complete wireless charging solution delivering up to 85% efficiency at 20W, this coil implements the receive side of the wireless charging solution. Designed for compact applications, it features a 35mm diameter achieving in a high power density.

The AWCCA-RX350300-101 wireless charging coil is optimized for 19V/20W operation and 25uH inductance. It is 35mm diameter, 3.15mm height, and has high permeability shielding to protect sensitive electronics. The durable construction reaches industrial -25°C to 85°C operating temperatures and is compatible with SEMTECH 19V/20W dual mode LinkCharge 20™ TSDMRX-19V20W-EVM chipset to jumpstart your design.

PART NUMBER	INDUCTANCE	DC RESISTANCE	Q
AWCCA-RX350300-101	25μH±10%	<150mΩ Typ	90 Typ
Test Condition	100KHz / 1V	20±15°C	100KHz/1V
Test Equipment	HP4284A, HP42841A , Agilent 34420A or equivalent		
Test Environment	Temperature: 20±15°C, RH: 65% ±20%.		



Standard Wireless Charging Coils

ABRACON PART NUMBER	TYPE RATIO	FUNCTION (TX OR RX)	INDUCTANCE (μH)	DC RESISTANCE (mΩ)
AWCCA-15N15H06-C01-B	1 Coil, 1 Layer	TX/RX	14.9μH±10	1.00±20%
AWCCA-20N20H20-C01-B	1 Coil, 1 Layer	TX/RX	6.3μH±10	150Ω
AWCCA-20R20H08-C01-B	1 Coil, 1 Layer	RX	12μH±10%	290Ω±20%
AWCCA-28R15H08-C01-B	1 Coil, 1 Layer	RX	7.5μH±10%	500Ω±20%
AWCCA-30N30H20-C01-B	1 Coil, 1 Layer	RX	6.3μH±10%	140Ω±20%
AWCCA-30R30H05-C01-B	1 Coil, 1 Layer	RX	29.5μH±10%	1.8Ω±20%
AWCCA-37R37H18-C01-B	1 Coil, 1 Layer	RX	29.5μH±10%	1.8Ω±20%
AWCCA-38R32H09-C01-B	1 Coil, 1 Layer	RX	11.1uH	250±20%
AWCCA-48R32H11-C01-B	1 Coil, 1 Layer	RX	10.5uH	190±20%
AWCCA-53N53H50-C01-B	1 Coil, 1 Layer	TX/RX	24uH	72±20%
AWCCA-53N53H50-C02-B	1 Coil, 1 Layer	TX/RX	6.3uH	72±20%
AWCCA-42R38H08-C03-B	1 Coil, 1 Layer	RX	12μH	350 mΩ max
AWCCA-26R26H08-C01-B	1 Coil, 1 Layer	RX	10μH	320 ±20% mΩ
AWCCA-36R36H08-C51-B	1 Coil, 1 Layer	RX	12μH	350 mΩ max
AWCCA-98T56H38-C01-B	3 Coils, 2 Layers	TX	12μH (lower coils), 11.5μH (upper coils)	56 ± 20% mΩ
AWCCA-12R12H11-C01-B	1 Coil, 1 Layer	RX	8μH	520 mΩ max
AWCCA-18R18H10-C01-B	1 Coil, 1 Layer	RX	10.5μH	330 mΩ max
AWCCA-50N50H30-C21-B	1 Coil, 1 Layer	TX/RX	6.3μH	38±20% mΩ
AWCCA-50N50H16-C51-B	1 Coil, 1 Layer	TX/RX	12.5μH	80±20% mΩ
AWCCA-47R38H08-C01-B	1 Coil, 1 Layer	RX	11.5μH	160±20% mΩ
AWCCA-107T52H40-C01-B	3 Coil, 2 Layer	TX	Upper 11.5uH/ Lower 12.0uH	56±20%

Additional Services

Abracon offers multiple services that streamline your product development process.

Did it PAS?™

Abracon provides an advanced proprietary Pierce analyzer test service that validates quartz crystal performance and long term operation in-circuit. The ability to sustain oscillation for a given quartz crystal oscillator design depends heavily on the crystal's motional parameters, board parasitics and oscillator circuit characteristics. The oscillator circuit is a closed loop system that sustains oscillation at an operating frequency depending on the crystal parameters including crystal plating capacitance (CL), crystal equivalent series resistance (ESR), external loading capacitors, trace parasitics and as the oscillator amplifier's gain & phase response. Taking all variables into account enables operation at the optimal operating point. The PAS test service provides a direct measurement of all variables associated with the quartz crystal oscillation.

Stand alone quartz crystal characteristics including:

- Motional parameters (Cm, Lm, ESR, Co)
 - Motional parameters
 - Narrow band frequency response plot
 - Wide band frequency response plot
 - Admittance versus susceptance plot
 - Frequency dependence versus load capacitance plot
- Circuit design margin calculation
- Recommendations for achieving optimal operating point

This service can be ordered through any franchised distributor with turn-around time from 2-4 weeks.

Antenna Optimization Services

Abracon offers in-system tuning services for chip and patch antennas. By directly testing antenna coupling gain and center frequency in the end system, this service takes the guess work out of RF verification while offering corrective measures that re-tune the system. This provides maximum system efficiency delivering many benefits including extended RF range, improved sensitivity and may reduce the required power consumption for a given level of transmit range.

This service is offered for the APEA series of passive patch antennas covering a variety of RF bands from 800MHz to 1600MHz including applications such as ISM radios, RFID, GPS/GLONASS and Iridium. Patch antennas are compact with excellent coupling gain and are easy to use. However exact tuning may depend on layout and the design of the ground plane. If de-tuned center frequency or gain is discovered during testing, a new patch antenna design can be constructed based on the existing one but with adjustments that match the layout for maximum gain at the center frequency of the application.

This service also applies to the ACA, ACAJ and AMCA series of chip antennas. Chip antennas such as the ACA-102 with 1.2x2.0mm footprint are ultra-compact with good gain that increases sensitivity for applications such as Bluetooth, Bluetooth Low Energy (BLE), WiFi/WLAN, Zigbee, GPS/BEIDOU/GNSS and UWB. They require a matching pi-network that optimizes gain and center frequency. Direct testing of these RF parameters enables exact verification of the pi-network used to match the chip antenna to the rest of the system. If the center frequency or gain is off center, an improved matching network is recommended.

The test requires a fully functional system to be shipped to Abracon and typically takes 4 weeks to complete.

TTI Inc. – The Specialist in Electronic Component Distribution

Americas
817.740.9000
ttiinc.com

Europe
++49.8142.6680.0
ttieurope.com

Asia
+65.6788.9200
ttiasia.com



TTI carries a broad and deep inventory of available to sell Abracon components for frequency control, signal conditioning, precision timing and magnetics. As a leader in components for the Internet of Things, Abracon strengthens TTI's position as the Specialist in electronic components for IoT. With specifically tuned antennas and chip antennas, and wired connection solutions, Abracon and TTI ensure reliable connectivity to a networked world.



1.800.CALL.TTI • ttiinc.com



07/17
1000