

endrich news

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electronica Munich, 11.-14. November 2014



We present highlights such as:

Extremely high-quality TFT displays with or without touch panel/TFT displays in conjunction with Single Board Computer (SBC) or CoM boards/OLED displays

ISM-band and network modules/Panasonic Bluetooth modules/MEMS timing products from SiTime/ High gain patch antennas for GPS, GLONASS, Galileo, Compass, SDARS, DAB/Locosys GNSS modules

High-efficiency switching regulator of MPS - high efficiency, high load currents, small dimensions

Digital pyroelectric sensors - easy in application, insensitive to electromagnetic interference/Pt200 element for applications at ambient temperatures of up to +1000 °C

Everlight low, mid and high power LEDs/New 3rd generation of Citizen COB LED - 3W to 165.2 W, Ra 80, Ra 90 on B.B.L., Ra 90 below B.B.L., Ra 97/DALI LED Driver/New - LED driver from ELT

Panasonic polymer capacitors/Susumu ultra precision thin-film resistors and resistor networks, UL certified high voltage resistors/small and efficient power inductors up to +155 °C

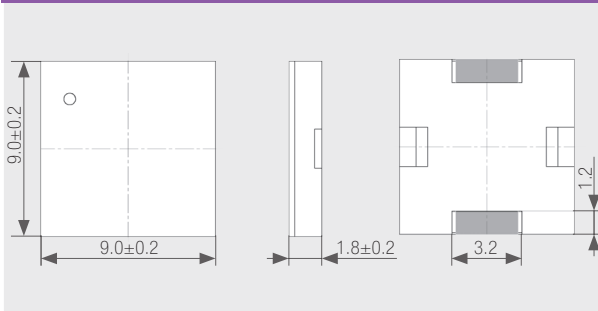
Please visit us – hall A5 booth 138!

NEW PIEZO CERAMIC SOUNDERS – SERIES CSPT09A03 (9×9×1.8 mm)

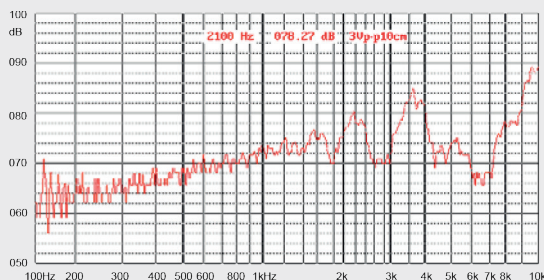


CSPT09A03-4.0F

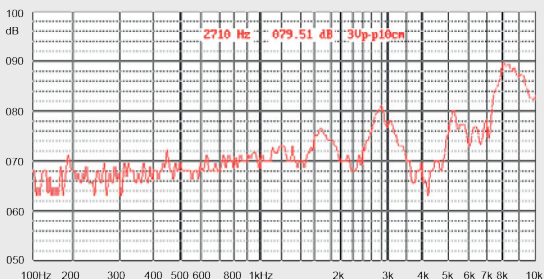
DIMENSIONS (mm)



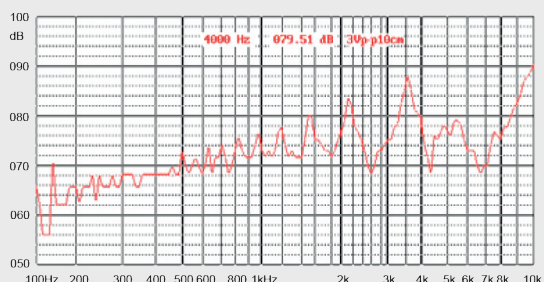
FREQUENCY CHARACTERISTICS



CSPT09A03-2.1F



CSPT09A03-2.7F



CSPT09A03-4.0F

From manufacturer Changzhou Chinasound we have brandnew in our programme the innovative product series SMD-Piezo-Sounder (Transducer) with the housing dimensions 9 mm×9 mm×1.8 mm. There are three different types, each optimized for the reproduction of specific sound frequencies: one for nominal 4.0 kHz, one for 2.7 kHz and one for 2.1 kHz. At this point in time, these sound components series represents the smallest size available for Piezoceramic sound components. The corresponding related part numbers are: CSPT09A03-4.0F, CSPT09A03-2.7F und CSPT09A03-2.1F.

The frequency response curves provided by the manufacturer prove a good ability also for the reproduction of different frequencies, where still a well-noticeable sound will be generated by these components. Details are shown in the product data sheets.

In practical, these new 9×9 mm piezo transducers are generating sound pressure values, that are at least equal to the well-known and established 12×12 mm size components.

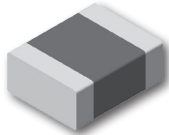
The current consumption is maximum 1mA, when driving the component at rated voltage ($3V_{p-p}$). These components are fully reflowable according to JEDEC standard J-STD-020D.

We strongly suppose that these component series is highly interesting for all customers who care on miniaturization of all components to a maximum extent.

FEATURES/TECHNICAL DATA

- » Currently, the smallest available piezo sounder
- » High reliability
- » Corrosion-resistant membrane
- » Flame-retardant housing
- » Lead free reflow solderable
- » Operating voltage: $20V_{p-p}$ max.
- » Resonant frequency: $4000\text{ Hz}\pm 500\text{ Hz}$
 $2700\text{ Hz}\pm 500\text{ Hz}$
 $2100\text{ Hz}\pm 500\text{ Hz}$
- » Sound pressure level: $75\text{ dB min. (@ }3V_{p-p}, 10\text{ cm resonant frequency)}$
- » Current consumption: $1\text{ mA max. (@ }3V_{p-p})$
- » Capacitance: $15000\text{ pF}\pm 30\% (@ 100\text{ Hz, }1V_{rms})$
- » Operating temperature: $-40\text{ }^\circ\text{C} \dots +105\text{ }^\circ\text{C}$
- » Storage temperature: $-40\text{ }^\circ\text{C} \dots +120\text{ }^\circ\text{C}$
- » Packaging: Taped on reel

POWER INDUCTORS – NEW SERIES WITH EXCELLENT FEATURES



MP Serie



DP Serie

FEATURES

DP series

- » Magnetic shielded inductors
- » High reliability
- » Low DC resistance and high saturation current
- » Inductances: 0.24 μ H to 4.7 μ H
- » Better characteristics than ferrite type inductors of same size
- » Low cost
- » Low moisture sensitivity

MP series

- » Newly developed multi-layer inductor
- » High current capacity
- » Low DC resistance
- » High reliability
- » Low height: 0.9 mm

ABC presents two series of power inductors which are added to the portfolio.

The **DP-Series** are very flat components of size 1.6×0.8 mm bis 2.5×2.0 mm. Wire-wound inductors in the chip package and iron powder/epoxy mixture as magnetic core material enable high efficiency at the same time the smallest of spaces. The innovative design enables a space-saving and cost-effective design. ABC indicates, due to the sophisticated designs with the DP series significantly better performance in terms of R_{DC} and I_{DC} compared with competitive products to achieve.

The **MP series** are new products from the multilayer portfolio. Compared with the previous ABC multilayer chip inductors they have higher power and lower resistance values.

Due to the low height of 0.9 mm and excellent reliability greater density mounting can be realized.

SPECIFICATIONS - DP-SERIES

PART NUMBER	DIMENSIONS [mm]	L [μ H]	R_{DC} [m Ω]	I_{SAT} [A]	I_{DC} [A]
DP2010-L	2.0 × 1.6 × 1.0	0.24~2.2	21~162	5.05 ~ 1.71	4.05 ~ 1.48
DP2510-L	2.5 × 2.0 × 1.0	0.47~2.2	32~117	4.50 ~ 2.16	3.51 ~ 2.07
DP2512-L	2.5 × 2.0 × 1.2	0.47 ~4.7	25~235	4.77 ~ 1.58	4.05 ~ 1.40

SPECIFICATIONS - MULTILAYER MP-SERIES

PART NUMBER	DIMENSIONS [mm]	L [μ H]	R_{DC} [Ω]	I_{DC} [mA]
MP2012-L	2.0 × 1.25 × 0.9	2.2~4.7	0.21~0.28	900 ~ 700
MP2016-L	2.0 × 1.60 × 0.9	2.2~4.7	0.15~0.20	1100 ~ 900
MP2520-L	2.5 × 2.00 × 0.9	1.0~4.7	0.06~0.13	1600 ~ 1100

ELT DRIVERS FOR HIGH POWER LED – NEW IN OUR PORTFOLIO



ELT constant current drivers for LED modules are designed and manufactured with branded components in Spain. The drivers provide a broad output voltage range and are therefore suitable for many available LED modules. All drivers have a galvanic separation between primary and secondary side to ensure electrical safety. For indoor applications drivers from 1 W to 90 W are available, many with TRIAC dimming and DALI control. IP67 drivers from 40W to 150W are for sale for outdoor applications. All drivers come with a 5-year warranty.

PART NUMBER	POWER [W]	OUTPUT VOLTAGE [V _o]	CONSTANT CURRENT [mA]	INPUT VOLTAGE [V _{ac} /V _{dc}]	DIMMING/SPECIALS	IP PROTECTION CLASS	DIMENSIONS H×W×L [mm]
LC 102/350-B	2	3-7	350	198-264	no	20	21 × 37 × 80
LC 103/500-B	3	3-7	500	198-264	no	20	21 × 37 × 80
LC 104/700-B	4	3-7	700	198-264	no	20	21 × 37 × 80
DLC 108/200-B	8	20-39	200	198-264	Primary, TRIAC	20	21 × 37 × 80
DLC 109/1050-B	9	3-9	1050	198-264	Primary, TRIAC	20	21 × 37 × 80
DLC 109/1050-EN	9	3-9	1050	198-264	Primary, TRIAC	67	34 × 41 × 67
LC 109/1050-B	9	3-9	1050	198-264	no	20	21 × 37 × 80
LC 109/1050-EN	9	3-9	1050	198-264	no	67	34 × 41 × 67
DLC 110/350-B	10	9-31	350	198-264	Primary, TRIAC	20	21 × 37 × 80
DLC 110/350-EN	10	9-31	350	198-264	Primary, TRIAC	67	34 × 41 × 67
DLC 110/500-B	10	9-21	500	198-264	Primary, TRIAC	20	21 × 37 × 80
DLC 110/500-EN	10	9-21	500	198-264	Primary, TRIAC	67	34 × 41 × 67
DLC 110/700-B	10	6-16	700	198-264	Primary, TRIAC	20	21 × 37 × 80
DLC 110/700-EN	10	6-16	700	198-264	Primary, TRIAC	67	34 × 41 × 67
LC 110/350-B	10	9-31	350	198-264	no	20	21 × 37 × 80
LC 110/350-EN	10	9-31	350	198-264	no	67	34 × 41 × 67
LC 110/500-B	10	9-21	500	198-264	no	20	21 × 37 × 80
LC 110/500-EN	10	9-21	500	198-264	no	67	34 × 41 × 67
LC 110/700-B	10	6-16	700	198-264	no	20	21 × 37 × 80
LC 110/700-EN	10	6-16	700	198-264	no	67	34 × 41 × 67
DLC 111/300-B	11	25-38	300	198-264	Primary, TRIAC	20	21 × 37 × 80
DLC 116/350-A	16	29-46	350	198-264	Primary, TRIAC	20	29 × 38 × 131
DLC 116/500-A	16	20-32	500	198-264	Primary, TRIAC	20	29 × 38 × 131
DLC 116/700-A	16	14-23	700	198-264	Primary, TRIAC	20	29 × 38 × 131
LC 116/350-A	16	12-46	350	198-264	no	20	29 × 38 × 131
LC 116/350-EN-2	16	12-46	350	198-264	no	67	33 × 49 × 209
LC 116/500-A	16	10-32	500	198-264	no	20	29 × 38 × 131
LC 116/500-EN-2	16	10-32	500	198-264	no	67	33 × 49 × 209

ELT DRIVERS FOR HIGH POWER LED – NEW IN OUR PORTFOLIO

PART NUMBER		POWER [W]	OUTPUT VOLTAGE [V _o]	CONSTANT CURRENT [mA]	INPUT VOLTAGE [V _{ac} /V _{dc}]	DIMMING/SPECIALS	IP PROTECTION CLASS	DIMENSIONS H×W×L [mm]
LC 116/700-A	16	6-23	700	198-264	no	20	29 × 38 × 131	
LC 116/700-EN-2	16	6-23	700	198-264	no	67	33 × 49 × 209	
DLC 120/1050-A	20	10-18	1050	198-264	Primary, TRIAC	20	29 × 38 × 131	
DLC 125/350-A	25	45-72	350	198-264	Primary, TRIAC	20	29 × 38 × 131	
DLC 125/500-A	25	32-50	500	198-264	Primary, TRIAC	20	29 × 38 × 131	
DLC 125/700-A	25	23-37	700	198-264	Primary, TRIAC	20	29 × 38 × 131	
LC 125/350-A	25	10-72	350	99-264	no	20	29 × 38 × 131	
LC 125/350-EN-2	25	10-72	350	99-264	no	67	33 × 49 × 209	
LC 125/500-A	25	10-50	500	99-264	no	20	29 × 38 × 131	
LC 125/500-EN-2	25	10-50	500	99-264	no	67	33 × 49 × 209	
LC 125/600-A	25	19-42	600	198-264	no	20	29 × 38 × 131	
LC 125/700-A	25	21-36	700	198-264	no	20	29 × 38 × 131	
LC 125/700-EN-2	25	21-36	700	198-264	no	67	33 × 49 × 209	
LC 142/1400-E (-FAN)	42	13-30	1400	198-264	no/ (-FAN) fan output	20	30 × 69 × 108	
LC 142/1400-E-C2 (-FAN)	42	13-30	1400	198-264	no/ (-FAN) fan output	20	32 × 70 × 170	
LC 142/600-C	42	35-70	600	198-264	no	20	28 × 40 × 230	
LC 142/700-C	42	34-60	700	198-264	no	20	28 × 40 × 230	
LC 148/1050-D	48	22-46	1050	198-264	no	20	21 × 30 × 360	
LC 148/1050-E (-FAN)	48	22-46	1050	198-264	no/ (-FAN) fan output	20	30 × 69 × 108	
LC 148/1050-E-C2 (-FAN)	48	22-46	1050	198-264	no/ (-FAN) fan output	20	32 × 70 × 170	
DLC 150/700-D-DALI	50	30-72	700	198-264	DALI	20	21 × 30 × 360	
LC 150/350-D	50	66-143	350	198-264	no	20	21 × 30 × 360	
LC 150/350-E (-FAN)	50	66-143	350	198-264	no/ (-FAN) fan output	20	30 × 69 × 108	
LC 150/350-E-C2 (-FAN)	50	66-143	350	198-264	no/ (-FAN) fan output	20	32 × 70 × 170	
LC 150/500-D	50	46-100	500	198-264	no	20	21 × 30 × 360	
LC 150/500-E (-FAN)	50	46-100	500	198-264	no/ (-FAN) fan output	20	30 × 69 × 108	
LC 150/500-E-C2 (-FAN)	50	46-100	500	198-264	no/ (-FAN) fan output	20	32 × 70 × 170	
LC 150/700-D	50	34-72	700	198-264	no	20	21 × 30 × 360	
LC 150/700-E (-FAN)	50	34-72	700	198-264	no/ (-FAN) fan output	20	30 × 69 × 108	
LC 150/700-E-C2 (-FAN)	50	34-72	700	198-264	no/ (-FAN) fan output	20	32 × 70 × 170	
LC 152/1050-C	52	35-50	1050	198-264	no	20	28 × 40 × 230	
LC 152/600-C	52	50-86	600	198-264	no	20	28 × 40 × 230	
LC 152/600-C-UN	52	35-86	600	99-264	no	20	28 × 40 × 230	
LC 152/650-C-UN	52	35-80	650	99-264	no	20	28 × 40 × 230	
LC 152/700-C-UN	52	35-75	700	99-264	no	20	28 × 40 × 230	
LC 156/650-C	56	50-86	650	198-264	no	20	28 × 40 × 230	
LC 160/700-C	60	34-86	700	198-264	no	20	28 × 40 × 230	
DLC 190/700-D-DALI	90	64-129	700	198-264	DALI	20	21 × 30 × 360	
LC 190/350-XT	90	114-258	350	198-264	no	20	38 × 93 × 154	
LC 190/500-XT	90	80-180	500	198-264	no	20	38 × 93 × 154	
LC 190/700-D	90	58-129	700	198-264	no	20	21 × 30 × 360	
LC 190/700-XT	90	57-129	700	198-264	no	20	38 × 93 × 154	
LC 190/1050-XT	90	38-86	1050	198-264	no	20	38 × 93 × 154	
LC 225/350-EN	2x25	9-72	350	198-264	no	67	34 × 89 × 198	
LC 225/500-EN	2x25	12-55	500	198-264	no	67	34 × 89 × 198	
LC 225/700-EN	2x25	3-37	700	198-264	no	67	34 × 89 × 198	

SUPER PULSE CAPACITORS – SPC SERIES



The EVE design and production of the super pulse capacitor **EVE-SPC** is a momentary high-current discharge energy storage devices can be achieved within a temperature range of -40°C to +85°C pulse discharge.

The **EVE-ES** pulse power are long life lithium batteries and super pulse capacitor in parallel with the power system. It is the ideal power source for long-term standby and high-current pulse applications.

In terms of design, EVE uses a unique safety valve and sealing, to ensure power supply in the use of process safety and reliability.

KEY FEATURES

- » High and stable voltage 3.6V (optional 3.9V)
- » High pulse current capability
- » No passivation effects
- » Wide temperature range (-40°C to +85°C)
- » Very low self discharge (less than 2% per year)
- » End of life indication capability
- » Light weight
- » Safe design (Anti-explosion valve device)

APPLICATIONS

- » Utility meters
- » GPS tracking devices / GSM modems
- » Asset, Container & Cargo tracking
- » RFID transponders
- » Sonar buoys
- » Data Loggers
- » Communication equipment
- » Emergency & Medical devices

SPECIFICATIONS

MODEL	SYSTEM PACK	NOMINAL CAPACITY	NOMINAL DISCHARGE CURRENT [mA]	MAX. CHARGING CURRENT [mA]	DIMENSIONS [mm]
Super Pulse Capacitors SPC Series					
SPC0920		30 As@3.67 V 45 As@3.90 V	150	6	9.0 × 21.0
SPC1520		140 As	500	50	15.0 × 20.5
SPC1530		250 As@3.67 V 380 As@3.90 V	750	50	15.1 × 26.7
SPC1550		560 As	100	2000	15.0 × 50.5
ES Power System Packs					
ES141520	SPC1520+ER14xxx	2400 mAh	2		16.5 × 75.0
ES261520	SPC1520+ER26xxx	8500 mAh	3		29.0 × 67.0
ES341520	SPC1520+ER34xxx	19000 mAh	4		34.0 × 78.0
ES141550	SPC1550+ER14xxx	2400 mAh	2		55.0 × 32.0 × 16.0
ES261550	SPC1550+ER26500	8500 mAh	3		55.0 × 44.0 × 28.0
ES341550	SPC1550+ER34615	19000 mAh	4		64.0 × 50.0 × 35.0

LOW NOISE, LOW POWER RAIL-TO-RAIL OUTPUT CMOS OP-AMPLIFIER



NJU77806F3

FEATURES

- » Equivalent Input Noise Voltage
f=10Hz 11nV/√Hz
f=1kHz 5.5nV/√Hz
- » Supply Current 500μA typ.
- » Gain Bandwidth Product 4.4MHz
- » Slew Rate 1.1V/μs
- » Supply Voltage
Single Supply 1.8V to 5.5V
Dual Supply ±0.9V to ±2.75V
- » Rail-to-Rail Output (RL=10kΩ) 50mV from rail
- » Ground Sense
- » Common-Mode
Input Voltage Range VSS-0.1V to VDD-0.9V
- » Input Offset Voltage 2mV max.
- » Input Offset Voltage Drift 1.5μV/°C typ.
- » RF-Noise Immunity

APPLICATIONS

- » Low-noise microphone amplifier
- » Photodiode preamplifier
- » Shock Sensor application
- » Acceleration sensor application
- » Security equipment
- » Wireless LAN
- » Radio systems

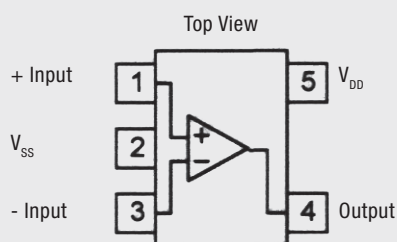
The **NJU77806** is a single low noise rail-to-rail output CMOS operational amplifier offer a low input voltage noise density of 5.5nV/√Hz at 1kHz while consuming only 500μA of supply current, and have wide gain bandwidth of 4.4MHz and slew rate of 1.1V/μs. These characteristics makes NJU77806 ideal when excellent performance is required in low noise and low power applications.

The very low noise of 5.5nV/√Hz at 1kHz and low 1/f noise of 11nV/√Hz at 10Hz while consuming only 500μA of supply current, give the NJU77806 the wide dynamic range necessary for preamps in microphones, audio amplifiers, active filters and sensor amplifiers. NJU77806 guaranteed from 1.8V to 5V specifications. In addition to low noise and low supply current, the NJU77806 operate on supplies as low as 1.8V. These features makes NJU77806 ideal for battery powered applications.

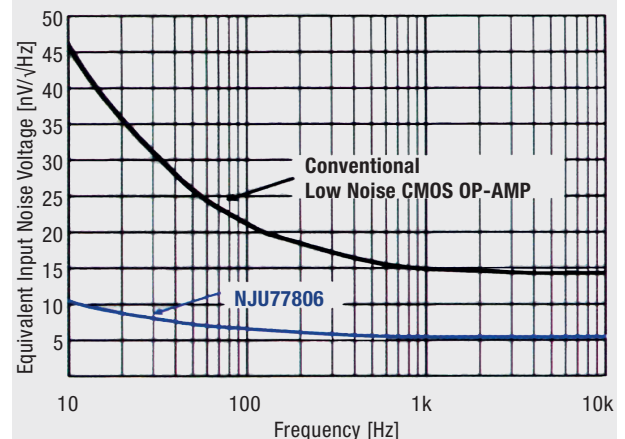
The NJU77806 is high RF-immunity to reduce malfunctions caused by RF noises from mobile phones and others.

The NJU77806 is available in space saving 5-pin SC-88A. The small package saves space on PC boards, and enables the design of small portable electronic devices.

PIN CONFIGURATION



TYPICAL CHARACTERISTICS



ESMT MEMORY – PRODUCT TECHNOLOGY COVERAGE

DRAM Family							
16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb	2Gb
SDRAM 90/70/65/60/40nm							
				DDR SDRAM 70/65/60/50/40nm			
		Mobile SDRAM 90/65/60/40nm					
			Mobile DDR SDRAM 65/60/40nm				
				DDR2 SDRAM 70/65/60/50/40/30nm			
						DDR3 40/30nm	

NOR Flash Family									
512Kb	1Mb	2Mb	4Mb	8Mb	16Mb	32Mb	64Mb	128Mb	
								Serial NOR 130/90/65nm	

NAND Flash Family				
512Mb	1Gb	2Gb	4Gb	
				NAND 50/40nm

NAND-Based MCP Family			
1G+256M	1G+512M	2G+1G	4G+2G
MCP 50/40nm NAND + 65/60/40/30nm mSD/mDDR/LPDDR2			

new

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