



PRODUCT INFORMATION



PART #	CEPB418160-515C29W120R	Revision: 1-2016
PIEZOELECTRIC BUZZER		

DESCRIPTION
Challenge Electronics Piezoelectric Buzzer; 41.8 mm Diameter; I style, Round with Flange screw mounting case; 16.0 mm High; 5-15 Vdc Operating Voltage; Continuous Tone Extra Loud; Resonant Frequency 2,900 Hz; Minimum Sound Pressure Level at 100 dB(A) at 100 cm and Nominal Voltage; Wire Leads 120 mm Long Termination; RoHS Compliant

- FEATURES**
- Flame Retardant Plastic
 - RoHS, Lead Free REACH (SVHC) Compliant
 - ISO 9001 Certified



REACH DECLARATION COMPLIANCE

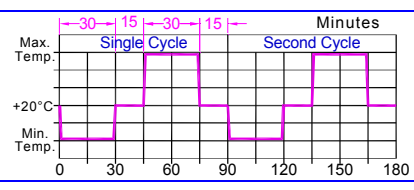
The Piezoelectric-Ceramic-Disc article contains more than 0.1% (w/w) of REACH Candidate List SVHC Lead-Zirconium-Titanium-Oxide (CAS 12626-81-2), which is a key ingredient of the Piezoelectric-Ceramic-Disc in the Alarm operation.
See section Substance Of Very High Concern and RoHS Compliance, page # 2, for full details.

SPECIFICATIONS

Alarm Type	Extra Loud, Continuous Tone		Sound Frequency	2,900 ± 500 Hz.	Cycle Rate	
Operating Voltage	5-15 Vdc		Nominal Voltage	12 Vdc		
Sound Pressure Level	At 5 Vdc	Minimum 90 dB(A) Typical 94 dB(A)	At 12 Vdc	Minimum 100 dB(A) Typical 103 dB(A)	At 15 Vdc	Minimum 102 dB(A) Typical 105 dB(A)
	In production, SPL is measured at 15 Vdc, AQL tested at 5 Vdc, 12 Vdc, and 15 Vdc of SPL, Current, and Frequency SPL is measured at 39.37" (100 cm), 25°C, Sound Level meter # 2240, Type 2, Fast Response, A-Weighted					
Operating Current	At 5 Vdc	Typ. 7 mA, Max. 12 mA	At 12 Vdc	Typ. 27 mA, Max. 35 mA	At 15 Vdc	Typ. 39 mA, Max. 50 mA
Surge Voltage	10% over maximum Operating Voltage for less than 5 minutes					
Operating Temperature	-20°C to + 70°C		Storage Temperature	-30 °C to + 80°C		
Material	Housing	Plastic, ABS 757, UL 94HB Flame Retardant, or equal, Black		Sound Port Opening	Top	
	Diaphragm	Stainless Steel Disc 304		Encapsulation	Plastic Plate Back Cover	
	Termination	Wire leads, 28 (7X36) AWG, 80°C, UL 1571, 120 mm Long, Struck 2.0 mm Color Coded: Red = Positive, Black = Negative				
Physical Dimensions	Diameter	41.8 mm Ø	Height	16.0 mm	Total Length	60.0 mm
Approximate Weight	11 grams		Removable Washing Label	No	Compliance	RoHS, Lead Free, and REACH (SVHC)
Options						

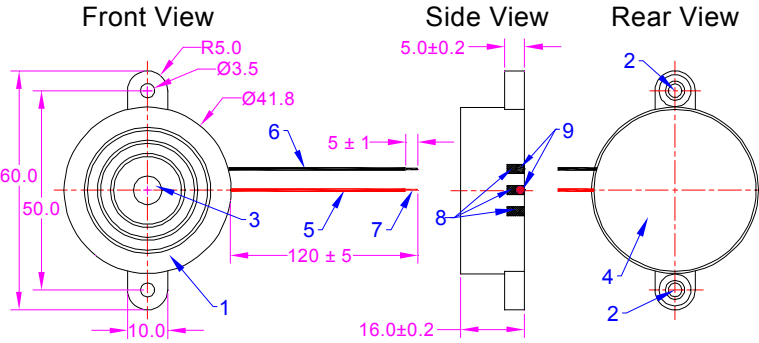
RELIABILITY * Reliability Test Performance After 3 hours cooling time, Parts should conform within ± 3 dB(A) to original performance

Thermal Operating Temperature Test	96 hours continuous operation at Rated Voltage, at Maximum Rated Operating Temperature *
	96 hours continuous operation at Rated Voltage, at Minimum Rated Operating Temperature *
Thermal Storage Temperature Test	96 hours storage at Maximum Rated Storage Temperatures *
	96 hours storage at Minimum Rated Storage Temperatures *
Thermal Shock Test	5 cycles of Minimum and Maximum Operating Temperature Each cycle shall be set per diagram below and is three (3) hours long. Make sure to limit temperature range to specifications listed above *
Humidity Test	120 Hours at +60±2°C 90-95% RH *
Insulation Test	A minimum of 10 MΩ, measured with 100 Vdc Insulation Resistance Meter, between the Electrical Terminals and the Transducer Case
Vibration Test	2 Hours of at 1.5 mm with 10 to 55 Hz. vibration frequency to each of 3 perpendicular directions *
Termination Strength	Maximum of 9.8 N (1.0 Kg) load pull test, applied to each terminal in axial direction for 10 seconds
Drop Test	Dropped naturally from 750 mm height onto the surface of 40 mm wooden board, 3 axes (X,Y,Z) directions, 3 times (6 times total) *
Solderability	Lead terminals are immersed in rosin for 5 seconds then immersed in solder with Solder-Iron 350±5°C for 3±0.5 seconds
Life Test	Intermittent 1,000 hours of a 1 minute on 4 minutes off cycle at room temperature and maximum rated voltage
	Continuous 250 hours continuous operation at maximum rated Voltage and maximum Operating Temperatures
Warranty	For a period of one (1) year from date of shipping under normal operations conditions This warranty does not apply to products damaged through misuse, abuse, improper installation, alteration, rework, or attempt to repair



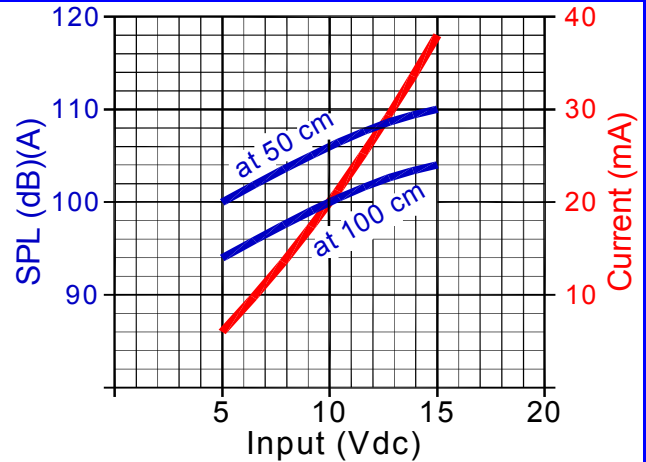


DIMENSIONS Units in: mm Tolerance: ± 0.5 mm



# 1: Plastic, ABS 757, UL 94HB, Black	# 6: Negative, Black, Wire Lead
# 2: Mounting Holes for Screws	# 7: Wire Leads are striped 5 mm from the end
# 3: Alarm Sound Port	# 8: Wire Leads Exit Holes
# 4: Plastic Cover Plate	# 9: Black Glue covers Exit Holes
# 5: Positive, Red, Wire Lead	

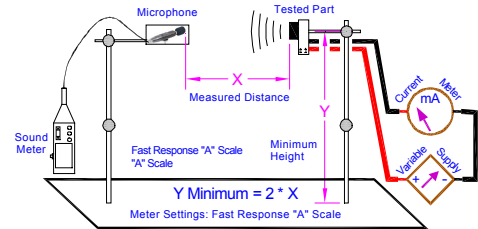
SPL and Current vs. Input Voltage Response



ALARM MAKING

On side Case or Back:	Part Number Sound Type Operating Voltage Range / Date Code Challenge Electronics Made in China
On Back:	Polarity Identification (when required)
Date Code:	Date Code consists of 2 Digits for year number and 2 Digits for week

Standard SPL & Current Measurement Process



SUBSTANCE OF VERY HIGH CONCERN (REACH) and RoHS LEAD FREE COMPLIANCE

This product does NOT contain any of the REACH Substances of Very High Concern (SVHC), and complies with European Union REACH Regulation No.1907/2006 regarding chemical substances that must be registered and disclosed

Lead (Pb) / Lead Compounds	≤1,000 ppm	≤ 10,000 ppm (*)	Poly Brominated Diphenyl Ethers (PBDE)	≤1,000 ppm	In compliance
Mercury (Hg) / Mercury Compounds	≤1,000 ppm	In compliance	Bis (2-Ethylhexyl) Phthalate (DEHP)	≤1,000 ppm	In compliance
Cadmium (Cd) / Cadmium Compounds	≤ 100 ppm	In compliance	Butyl Benzyl Phthalate (BBP)	≤1,000 ppm	In compliance
Hexavalent Chromium (Cr _{VI})	≤1,000 ppm	In compliance	Dibutyl Phthalate (DBP)	≤1,000 ppm	In compliance

(*) European Union Directive 2011/65/EU (RoHS Directive) of the European Parliament, and of the Council of 8 June 2011 and all subsequent amendments, The ANNEX III of the Directive Applications exempted from the restriction in Article 4(1): 7(c)-I. Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. Piezoelectric devices, or in a glass or ceramic matrix compound Piezoelectric is also known as Lead Zirconate Titanate (PZT) ceramics. Piezoelectric Ceramic disc, (PZT), lead as high covalent compound in the ceramic matrix to achieve good ferroelectric properties in a wide temperature range. The best-known performances can be reached with PZT ceramics, which are a mixture of PbTiO₃ and PbZrO₃. The lead content, homogeneous material compound is between 58% and 68% by weight depending on the proportion of zirconium (Zr) and titanium (Ti)

- According to the REACH terminology, Challenge Electronics acknowledge being Producers, Importers and Marketer of Sound Devices Articles, which do not contain Substances of Very High Concern (SVHC's) to be intentionally released
- Challenge Electronics hereby declares, to the best of our knowledge and based on our China Manufacturers and Fabricators information, that, all Challenge Electronics Sound Devices Articles are chemically safe, and should not harm any human, animals, or the environment
- It should be noted that SVHC items are not banned from inclusion, but are Reportable per current REACH regulations
 - With the exception of The Piezoelectric-Ceramic-Disc article that CONTAINS more than 0.1% (w/w) of REACH Candidate List SVHC Lead-Zirconium-Titanium-Oxide (CAS 12626-81-2), which is a key ingredient of the Piezoelectric-Ceramic-Disc in the Alarm operation. See also the RoHS Compliance ANNEX III of the Directive Applications exempted from the restriction in Article 4(1)
 - Some SMD and Dip type Capacitors CONTAINS one of the following Lead Oxides published in the ECHA SVHC Candidate List at or greater than 0.1% of total weight: Lead monoxide (CAS 1317-36-8), Lead titanium zirconium oxide (CAS 12626-81-2)
- In all cases, the lead substance is chemically combined in Capacitors and presents no hazard to humans or the environment under normal handling and use. In addition, Challenge Electronics complies with the restrictions stated in Annex XVII of REACH

IMDS Guide for Piezoelectric

Automotive Industry Interpretation Guide for ELV Annex II (2016/774/EU) with IMDS Information added by the IMDS Steering Committee

- Interpretation Guide for ELV Annex II (2016/774/EC) Version 3.0
- Definition/interpretation of -Exemption (10a)

Examples for components covered by (10a)

a) Piezoceramics

Piezoceramics are characterized through their ability to transform mechanical energy in electrical energy and reciprocal. They fulfil technical functions as actuators, sensors, generators and motors. They are used for instance in Actuators for diesel and gasoline injection valves, knock sensors, resonator and filter, actuators, bending actuators for pneumatic valves, tire Pressure Sensors, ceramic sensors (like ABS, air bag, pressure, car navigation sensors), **Piezoelectric Alarms, Piezoelectric buzzers, Piezoelectric Sound Transducers, Ultrasonic Sensor and Transmitter.** The lead content in the Piezoceramics ceramics is around 50 to 70% by weight, depending on the content of dopants, required functional properties and on the proportion of Zirconium (Zr) and Titanium (Ti)

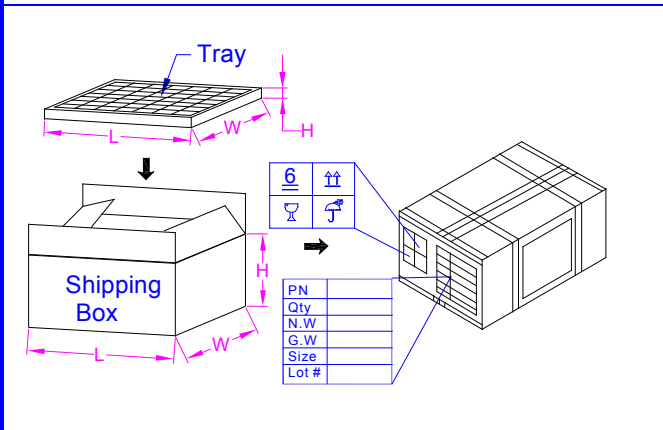
Lead Zirconium Titanium Oxide Information Basic information

Density:	7.7 g/cm ³	CAS #:	12626-81-2	EC #:	235-727-4	Inclusion Date:	12/19/2012	DN:	ED/169/2012	Product Categories:	Inorganics
Safety Information:		RIDADR:	UN1993	TSCA:	Yes	Hazard Class:	3	Packing Group:	III		

In Challenge Electronics role as Supplier, we have taken the necessary steps towards our China Manufacturing in order to get a written confirmation about their knowledge of the Regulation and their analysis of the impact on their company



PACKAGING



Shipping Box MARKING		TRAY	
Part Number	Dimensions	L	30 cm
Other PN (if required)		W	28.5 cm
Lot and/or Date Code		H	5 cm
Quantity	Quantity	50	
PO Number	SHIPPING BOX		
Net Weight	Dimensions	L	59 cm
Gross Weighjt		W	31 cm
Box Number of Boxes		H	31 cm
RoHS Lead Free Compliance	Quantity	500	
	Approximate Weight	7.5 Kg	
	Dimensions Weight	9.45 Kg	
	Volume	0.0567 M ³	
	Made in	China	

Revision	Description	By	Date
1-2016	Changed UL ratings for the wire leads, clarify the SPL testing voltage, added Surge Voltage	E. Zofan	8/8/2016