

Product/Process Change Notification

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Initiation Date	April 02, 2018	Notification No.	20180402
Implementation Date	May 02, 2018	Initiator's Name	Felix Naylor
Beginning Date Code of Implemented Change			TBD

CHANGE DESCRIPTION:

Knowles will be changing to a new piezoelectric element supplier for microphones of the BL and BU series, due to the current supplier discontinuing the piezoelectric device.

As shown in the below characterization and reliability testing, the product passes specifications and there are no concerning differences from the current product.

Please continue to work with your Account Director if you have any questions or concerns to this Product Change Notification. Product samples are available upon request.

MODELS AFFECTED:

BL-21671-000	BL-23958-000	BU-23842-000	BU-30258-000
BL-21681-000	BL-27046-000	BU-23842-141	BU-3173-053
BL-21785-000	BL-27242-000	BU-27135-000	BU-7135-000
BL-21994-000	BU-1771-P25	BU-27135-141	BU-9864-000
BL-23497-000	BU-21771-000	BU-30009-053	
BL-23895-000	BU-23173-000	BU-30179-000	

SUPPORT INFORMATION:

Test	Acceptance Criteria	Model Tested	Sample Size	Test Results
Electroacoustic & Electrical Characterization	Performance comparable to current process	<u>Current Supplier</u> BU-23842-141 <u>Eval Supplier</u> BU-23842-141	210 ea	Pass <u>Average 1000Hz Sensitivity</u> Current: -27.1 dB Eval: -26.4 dB <u>Average 300 Hz Sensitivity (dB re 1000 Hz Sensitivity)</u> Current: -0.11 dB Eval: -0.09 dB <u>Average 3 kHz Sensitivity (dB re 1000 Hz Sensitivity)</u> Current: 1.2 dB Eval: 1.2 dB

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Test	Acceptance Criteria	Model Tested	Sample Size	Test Results
Noise	Performance comparable to current process	<u>Current Supplier</u> BU-23842-141 <u>Eval Supplier</u> BU-23842-141	210 ea	Pass <u>Average A-Weighted Noise @ 1kHz</u> Current: -112.7 dB SPL Eval: -112.3 dB SPL
Composite Temperature Humidity Cyclic IEC 68-2-38 (6 cycles, 25°C and 55°C temperatures, humidity per spec)	Sensitivity Change: < 3dB shift at 1KHz	<u>Current Supplier</u> BU-23842-141 <u>Eval Supplier</u> BU-23842-141	30 ea	Pass <u>Mean change in 1kHz Sensitivity</u> Current: 0.18 dB Eval: 0.47 dB
Damp Heat QAP-8040 500 hrs environment, 2 hr recovery at room temperature	Sensitivity Change: < 6dB shift at 1KHz	<u>Current Supplier</u> BU-23842-141 <u>Eval Supplier</u> BU-23842-141	30 ea	Pass <u>Mean change in 1kHz Sensitivity</u> Current: 0.90 dB Eval: 2.41 dB
Thermal Shock QAP8140 5 cycles: -40°C to +63°C, 15 minute soaks, <30 sec. transition	Sensitivity Change: < 3dB shift at 1KHz	<u>Current Supplier</u> BU-23842-141 <u>Eval Supplier</u> BU-23842-141	30 ea	Pass <u>Mean change in 1kHz Sensitivity</u> Current: -0.05 dB Eval: 0.11 dB
Low Temp Storage IEC 68-2-1 -40°C for 500 hrs environment, 2 hr recovery at room temperature	Sensitivity Change: < 3dB shift at 1KHz	<u>Current Supplier</u> BU-23842-141 <u>Eval Supplier</u> BU-23842-141	30 ea	Pass <u>Mean change in 1kHz Sensitivity</u> Current: -0.29 dB Eval: -0.07 dB
High Temp Storage IEC 68-2-2 +63°C for 500 hrs environment, 2 hr recovery at room temperature	Sensitivity Change: < 4dB shift at 1KHz	<u>Current Supplier</u> BU-23842-141 <u>Eval Supplier</u> BU-23842-141	30 ea	Pass <u>Mean change in 1kHz Sensitivity</u> Current: -0.57 dB Eval: -0.18 dB

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