

Digital-ONE™ NR+

Adaptive DSP Amplifier with **Layered Noise Reduction™**



100% Digital Processing for Exceptional Sound Quality

Layered Noise Reduction

- Syllabic layer reduces noise that is embedded in speech
- Environment layer slowly reduces noise when no speech is present
- Quick-Recovery layer gives noise reduction with fast recovery for speech onset
- All layers respond to noise of all intensities - replaces low-level expansion
- Programmable selection to maximize comfort or maximize speech quality

Advanced Adaptive Feedback Cancellation*

- **17-22 dB of Added Stable Gain**, depending on application
- 15 dB more fitting range than our previous generation of AFC
- Doesn't reduce gain like conventional adaptive notch filters
- Improved handling of tonal sounds

Four-Channel WDRC with Dynamic Contrast Detection™

- Better performance in noise and conversation

Digital Directional Processor

- Programmable directional patterns
- Switchable from Directional to Omni

Twelve-band Gain Adjustment

- Fine control of gain at all frequencies for precise target matching

Wideband Output Compression Limiting

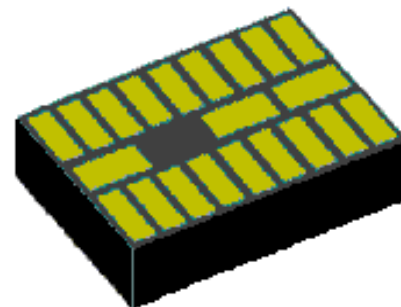
- Maximize comfort in loud environments

Up to Four Programmable Memories

- Supports pushbutton, toggle, slide, and paddle switches

Compact Hybrid Size

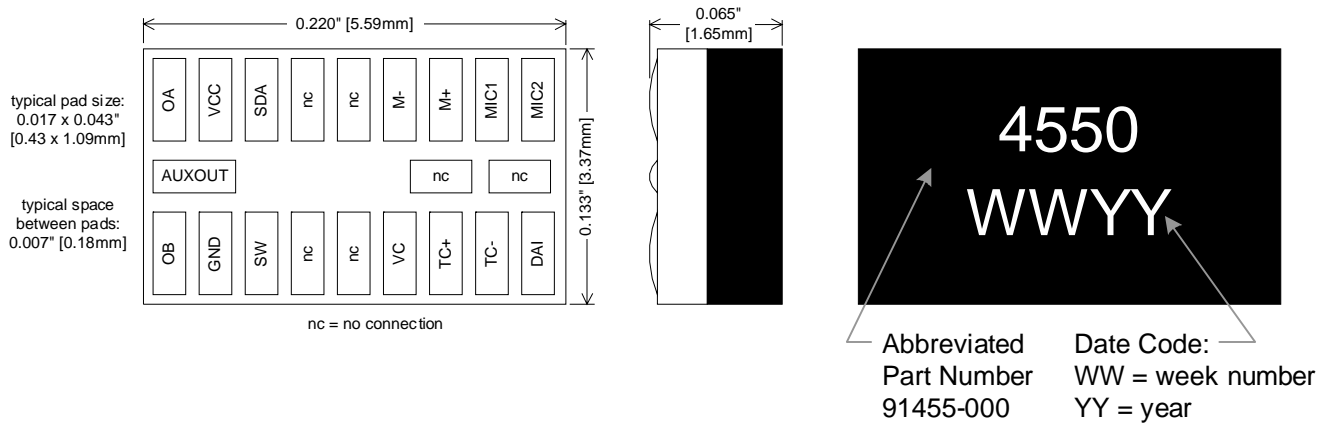
- 0.220 x 0.133 x 0.065" [5.6 x 3.4 x 1.7mm]
- Suitable for hand-wiring and reflow applications



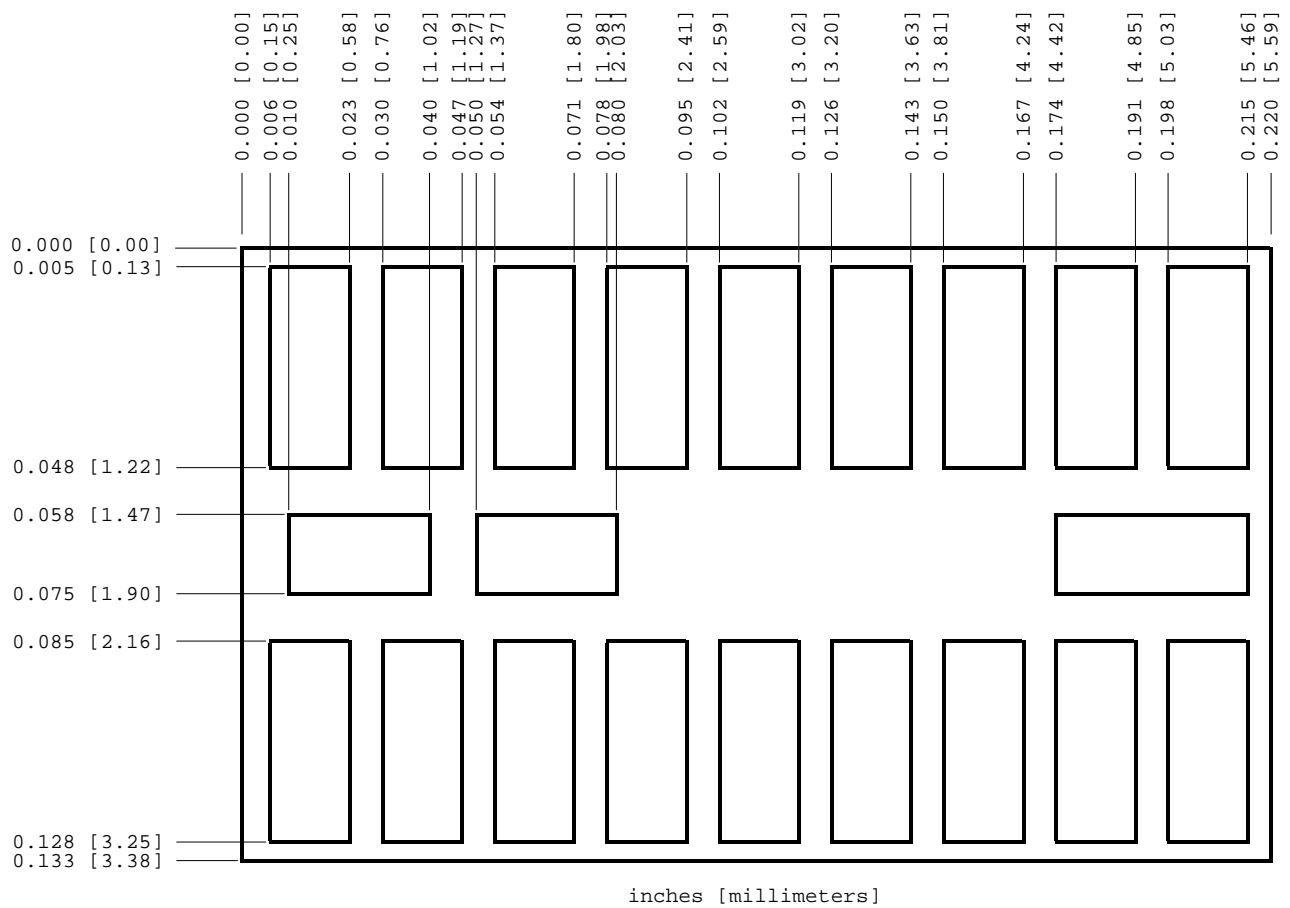
PCB Hybrid for Reflow and Hand-wire Applications

PCB Hybrid Package Information

part number 91455-000



Detail of Pad Positions



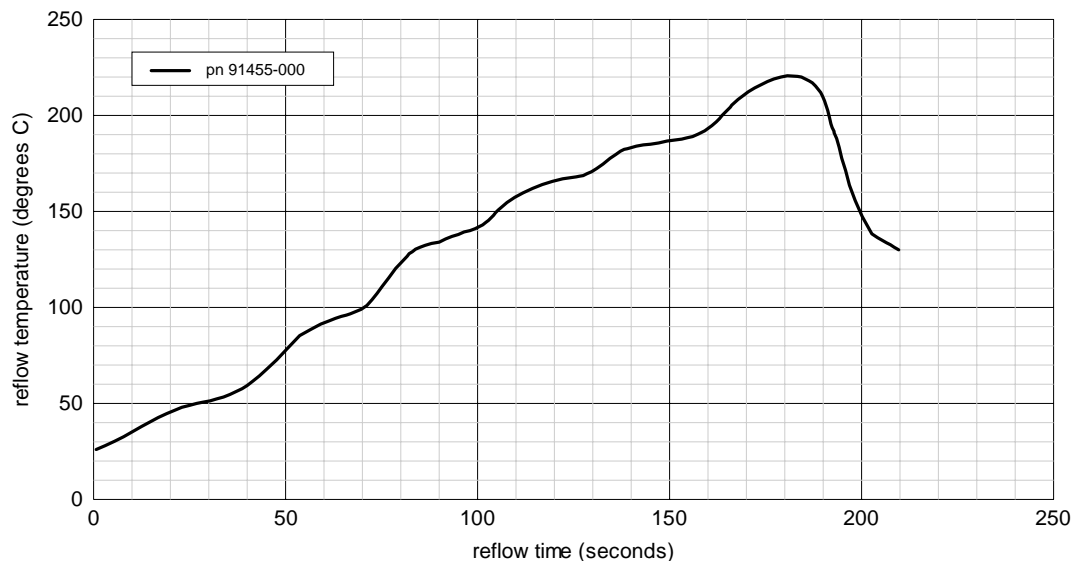
Parametric Data

parameter	minimum	typical	maximum	units	condition
minimum operating supply voltage	1.05	--	--	V	
maximum operating supply voltage	--	--	1.5	V	
supply current, AFC off	700	772	840	uA	
supply current, AFC on	--	863	--	uA	see note 1
clock frequency	2.534	2.560	2.586	MHz	
sampling frequency	--	16	--	kHz	
bandwidth	--	8	--	kHz	
input noise	--	4	--	uV	bandwidth 200-8Khz
dynamic range	--	84	--	dB	max input signal with THD < 2%
output impedance	--	10	--	ohms	
maximum output drive current	--	--	25	mA	
input impedance	385	550	715	ohms	
regulator voltage	0.89	0.95	1.05	V	120uA load
maximum regulator current	100	--	--		
PSRR	35	50	--	dB	
Power on Reset Threshold Voltage	0.55	0.7	0.85	V	

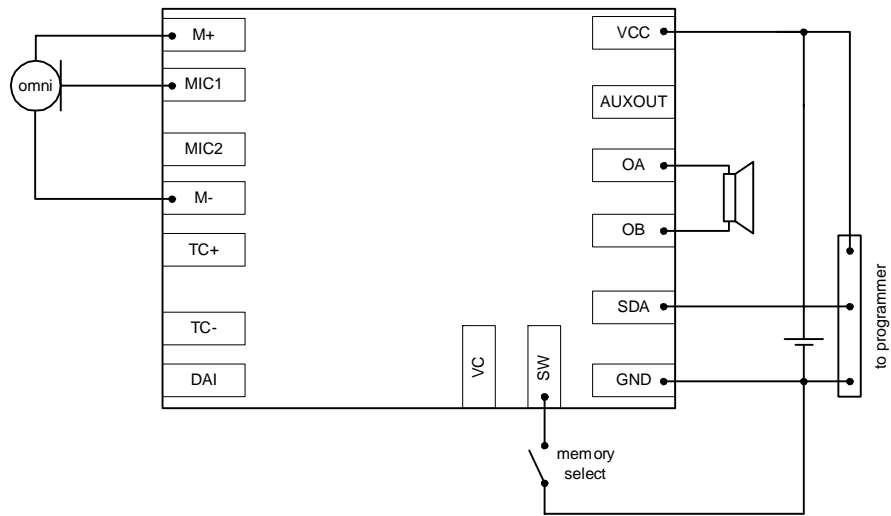
note 1: AFC turned on. 2kHz pure tone input at 200 uVrms amplitude.

Soldering Information

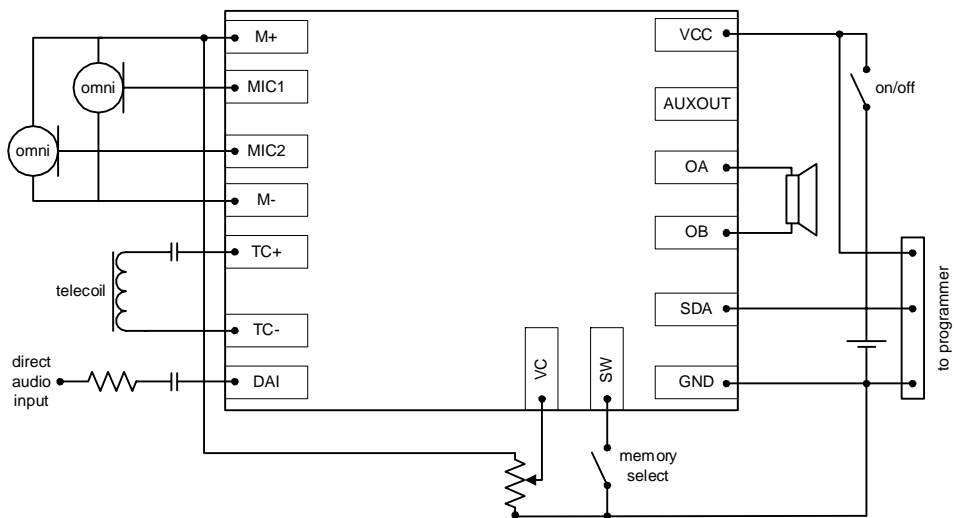
IntriCon Hybrid part number	Customer Attach process	Process Parameters	Max Hybrid Temp	Recommended materials to attach hybrid
91455-000	Hand solder wire	Set iron tip temp to 600-650 F. Max dwell time of 2 second. Allow 10 seconds between solder operations	225 C	Use Sn62, Pb36,Ag2 solder wire Or Sn63, Pb37 solder wire
91455-000	Flip Chip	Reflow in IR or Convection oven - See profile below for recommended reflow temperature	225 C	Print Sn62, Pb36, Ag2 or Sn63, Pb37 paste onto pads. Flip hybrid onto wet paste and reflow. Alternate method is to apply flux to the pads then flip hybrid onto fluxed pads and reflow. Recommended flux is Indalloy tac flux 009 (this is a water soluble flux.)



Wiring Schematic for Simple CIC Configuration



Wiring Schematic for Full Features



High Power Application using Conventional Class B Output Stage

