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Subject: Piezo Curves

Posted by [Andy G](#) on Sat, 07 Jul 2001 02:13:10 GMT

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The link below gives some scans of the piezo curves published in the Jaycar cattle dog. Hope they are useful!

Piezo curves

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Subject: Re: Piezo Curves

Posted by [Wayne Parham](#) on Sat, 07 Jul 2001 05:18:52 GMT

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Thanks for posting those response curves! I think I can speak for everyone when I say that we appreciate the time you spent scanning the images and putting them online. Paul C. loves those large format piezo compression drivers.

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Subject: Might be a good idea to save them to your computers. !!

Posted by [Andy G](#) on Sat, 07 Jul 2001 08:41:37 GMT

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Glad they are useful. :-))

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Subject: Thanks, Andy!

Posted by [Paul C.](#) on Sat, 07 Jul 2001 21:11:53 GMT

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Thanks, Andy! Looks like Wayne was right, with the 1188 the woofer should be rolled off at 600 hz rather than 800 hz. The KSN1188a looks very good, in fact, better than many more expensive units. This jives with what my ears tell me.

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Subject: Wayne, what's the scale on KSN1038?

Posted by [AudioLapDance](#) on Mon, 09 Jul 2001 20:27:39 GMT

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Hey Wayne, I'm trying to compare these piezos to the KSN1038 but I'm going blind trying to read the scale on the freq response graph--I swear that's why I'm going blind, it's not because of the "other thing" ;-). There seems to be 5 minor divisions per major division. In between 4k and 5k Hz, the response rises one minor div, is that ~3db? There's a trough after 10k to about 15k Hz, is that ~3dB? Thanks, Jeff

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Subject: Re: Wayne, what's the scale on KSN1038?

Posted by [Wayne Parham](#) on Tue, 10 Jul 2001 06:44:07 GMT

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The frequency response chart for the KSN-1038 is broken into a grid showing 5dB increments with bold lines, and 1dB increments with fine lines, in between. It shows output averaging 105dB with 4v RMS input, measured at a distance of 18". To translate this to 2.83v/M, subtract 9dB. The ripple shown is only about 3dB.

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Subject: Request of Andy G?

Posted by [AudioLapDance](#) on Wed, 11 Jul 2001 06:09:39 GMT

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Hey Andy, thanks again for those response graphs! Would you be able to post the responses for the KSN1038/1041 and the KSN1005? It would be great to compare them to Wayne's old spec sheet. Your efforts are appreciated muchly! Best regards, Jeff

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Subject: Re: Request of Andy G?  
Posted by [Andy G](#) on Wed, 11 Jul 2001 07:27:49 GMT  
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G'day Jeff, sorry for the delay. Jaycar doesn't sell the 1038 (so I can't help you there), but I'll scan the 1005A curves and add to the page asap. I'll also link the scans from my main pages. AG

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Subject: Done! nt  
Posted by [Andy G](#) on Wed, 11 Jul 2001 07:40:00 GMT  
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Subject: Hey Andy, are there any others that look flat?  
Posted by [AudioLapDance](#) on Thu, 12 Jul 2001 00:57:50 GMT  
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... and I don't mean the young ladies at the beach! :-0 If you wouldn't mind letting your fingers take a walk through the catalog; do any of the other piezos look flat? I was wondering about the KSN1177 or KSN1167? And if you have the time: KSN1133, KSN1148, KSN1130, any others

...Thanks a bunch,Jeff

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Subject: Hmm, not sure about these piezos ... Wayne?  
Posted by [AudioLapDance](#) on Thu, 12 Jul 2001 01:19:15 GMT  
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Hey Wayne, as you know (and are probably sick of!) I'm still looking for some cheap tweets to mate with the Delta 15. I WAS thinking of two KSN1025/1141. The response graph isn't as smooth as I hoped after hearing that it was praised in SpeakerBuilder from Paul C (maybe I just got spoiled by the 1038!?!). I guess that's my first question: should I consider these response graphs accurate? After looking over the graphs I notice that a single KSN1165 has a slightly smoother response and slightly more sensitivity than TWO of the 1025s! I guess that brings me to my second question: are the 0dB lines in these graphs a common reference or are they normalized to the listed sensitivity in the specifications (ie the KSN1188 is listed as 93 dB and that's the 0db line in the 1188 graph)? Thanks for the help, JeffPS I'm just listening to some good ol' Quadrophenia ... Keith Moon was a freaking animal!! What a loss! Him, Bonham, Hendrix ... What a loss!

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Subject: Re: Hmm, not sure about these piezos ... Wayne?  
Posted by [Wayne Parham](#) on Thu, 12 Jul 2001 03:05:34 GMT  
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Yeah, I tend to agree with you. From what I've seen in the response charts, I'm not real impressed with those large format piezos.

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Subject: Re: Hey Andy, are there any others that look flat?  
Posted by [Wayne Parham](#) on Thu, 12 Jul 2001 03:11:13 GMT

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Thanks again for taking the time to compile data on large format piezo drivers. I only use the KSN-1038, but there is obviously a lot of interest in some of the others you've listed. So having a site with data about them is very helpful for DIY'ers.

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**Subject: Hmm-ing, now aha-ing!**

Posted by [AudioLapDance](#) on Thu, 12 Jul 2001 05:10:23 GMT

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If Andy G's gracious graphs are calibrated so the 0dB line is the sensitivity in the spec sheet, then the KSN1165 is at LEAST 3 dB louder than the KSN1025/1141. The 1025 is usually rated between 95 and 98 dB so that implies that the 1165 is at least 98 or 99 dB. The KSN1188 should be using the same 0 dB calibration as the 1165 because both are rated as 93 dB/2.83V. The 1188 looks at least as sensitive as the 1165 so it should be around 99 dB too! Attacking from another direction, Paul C seems to know his terminals from his tractrix horns. Indeed, Andy G's KSN1005 graph explains why Paul was "less than impressed by the 5khz peak in the little KSN1005... a harsh one note cymbal sound." Paul's trumpeting of the 1188 strikes a cord with me. So I'm gonna go with the KSN1188 and hope it comes close to the 100-ish dB of the Delta 15. QED. Whew, that felt good! So now onto the 1188. The graph shows that it doesn't roll-up a la 3rd order like the other piezos. I'm thinking that this must be a measurement glitch since Paul said he successfully ran it with no crossover. The -3dB point looks like ~ 600 Hz (!wow!) so I'm thinking I'll put a 400 to 500 Hz second order on the Delta (does any one have a more precise suggestion?) I bet the Delta will like this low down, double crossing! ;- ) Do I need to worry about throat distortion with this horn trying to go so low? Thanks for your help guys, Best regards, Jeff

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**Subject: Re: Hey Andy, are there any others that look flat?**

Posted by [Andy G](#) on Thu, 12 Jul 2001 10:48:42 GMT

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Just scanning from the Jaycar cattledog. And that's all there is, sorry, no more in the book !!

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Subject: Big thanks to Andy!

Posted by [AudioLapDance](#) on Thu, 12 Jul 2001 14:42:29 GMT

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You've done more than expected already! Thanks so much for scanning and posting--we finally have some data to chew in the maw of decision! So here's to Andy, may he always be randy. Cheers, Jeff

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Subject: Ah, crap!

Posted by [AudioLapDance](#) on Sat, 14 Jul 2001 20:36:22 GMT

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On further study, the KSN 1165 and 1188 tweeters are just too peaky and I don't think they'll work for me. I'm looking for quality sound, not just sound reinforcement PA speakers. Best regards, Jeff

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Subject: Re: Piezo Curves

Posted by [Nihilist](#) on Wed, 06 Feb 2013 19:39:47 GMT

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Yeah, I know, I know, pulling a crusty skeleton from the crypt.

By any chance does anyone have the information that was in the link at the beginning of this thread, the link for "Piezo curves" ?

I would greatly appreciate it, or even if all you have is the data sheet/frequency curves for the KSN1167 .

Thanks much.

.....Blake

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Subject: Re: Piezo Curves

Posted by [JCDC](#) on Wed, 06 Feb 2013 20:55:13 GMT

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I'll I've got so far is the KSN1038 from waaaay back

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Subject: Re: Piezo Curves

Posted by [Wayne Parham](#) on Wed, 06 Feb 2013 21:15:22 GMT

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That brings back memories, doesn't it?

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Subject: Re: Piezo Curves

Posted by [Nihilist](#) on Wed, 06 Feb 2013 22:55:21 GMT

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Seems as though this company has taken up where CTS left off. Lots of graphs that seem to match original Motorola/CTS specs.

<http://www.bestgrouptechnologies.com/piezosource-products.php>

I sent them an email to see if they have a US distributor. I'll let you guys know what they say.

.....Blake

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Subject: Re: Piezo Curves

Posted by [JCDC](#) on Wed, 06 Feb 2013 23:12:13 GMT

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Nice Link Blake!

So I think the KSN1165 is close to your KSN1167

1165

#### File Attachments

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1) [KSN1165 fr.png](#), downloaded 3484 times

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Subject: Re: Piezo Curves

Posted by [JCDC](#) on Wed, 06 Feb 2013 23:20:40 GMT

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And the "new" KSN1038

#### File Attachments

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1) [KSN-1038 1056.pdf](#), downloaded 353 times

2) [KSN1038 1056 fr and polar.png](#), downloaded 3396 times

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Subject: Re: Piezo Curves

Posted by [JCDC](#) on Wed, 06 Feb 2013 23:31:37 GMT

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Hey that old dual one I have is pretty good! But would you get ripple as you moved side to side because of the interference of the two units?

#### File Attachments

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1) [KSN1177.png](#), downloaded 3239 times

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Subject: Re: Piezo Curves

Posted by [Nihilist](#) on Thu, 07 Feb 2013 03:05:58 GMT

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IDK about the off-axis response. I know a few guys on other forums reported liking the KSN1177.

The KSN1056 and the KSN1038 look very similar, but they are different somehow. If you look



through all the drivers on the website, they show a KSN1038, but don't have the specs up for download/viewing.

The KSN1165 looks very similar to the KSN1167 , but the KSN1165 has a larger/thicker piezo drive element. Also the horn throat is deeper and the overall diameter is larger than the KSN1167. KSN1165 is rated to about 3500-3800hz and up , while the KSN1165 is rated from 1800hz and up.

Here's a link about the Piezo drive elements. He makes a mistake and says KSN1038, but he is referring to the KSN1034.

<http://www.audioasylum.com/forums/hug/messages/2/29739.html>

Also, if you look into it, certain piezo tweeters had larger paper diaphragms too. So between different horn loadings (or none) , different size piezo drive elements , and different size paper diaphragms, you get a pretty big range of tweeters.

Here's another link about piezos <http://fullrangedriver.com/forum/viewtopic.php?id=1624>

.....Blake

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### File Attachments

1) [CTS piezo white paper.pdf](#), downloaded 927 times

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