MN3005 BBD Analog Delay IC
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As a result of my plan to have a number of large format Blacet Time Machines professionally assembled, I searched for sources of obsolete MN3005 BBD (bucket brigade delay) IC. The history of difficulty sourcing these ICs is well- documented in a number of forums:

http://freestompboxes.org/viewtopic.php?f=17&t=8116&p=90518&hilit=mn3005
http://www.diystompboxes.com/smfforum/index.php?action=printpage;topic=95978.0
http://www.madbeanpedals.com/forum/index.php?topic=645.0
http://electro-music.com/forum/post-278819.html
http://www.thegearpage.net/board/archive/index.php/t-1028286.html

Having invested the time to find these ICs in a meaningful quantity, it was important to provide documentation to overcome concerns about the validity of the ICs. We established a simple process for evaluating them:

1) Buying parts only from suppliers who have a track record of being able to provide genuine MN3005s in the past- no random e-bay buys. These sources are well-documented in the various forum posts as providing legit MN3005s. These 'recognized' suppliers act as the first line of defense against fakes. Approximately 3/4 of all orders placed were identified as 'fakes' by the supplier before shipping to me.
    a. Of eleven 'named' suppliers, seven claimed to have stock of the MN3005, only four actually did.
    b. The average price I paid across 160+ ICs is about $33 per.
2) Checking each IC against the visual clues that indicate fakes. These are well-documented in various forum posts, and include such items as pin size and length, condition of the top and bottom surfaces, expected logo and date codes, etc. Another good reference is http://www.aeri.com/counterfeits.html
3) Testing each IC against a reference chip by installing it in a testbed Blacet Time Machine- fully documented in youtube videos -- http://www.youtube.com/watch?v=cD6i3osyfZg

    a. Acoustic test- video documentation of each IC demonstrated from 'no delay' to 'full delay' to compare the sound quality against a reference IC
    b. Scope test- screenshot .jpg files for each IC for 'no delay' and 'full delay' states, to compare against the screenshots for the reference IC- using the Oscium scope app for the iPad
    c. Visual inspection photos- macro-scale photos top and bottom for each IC

ICs that failed are also documented – like this one. Example here :
http://www.youtube.com/watch?v=IIV0KsThoRc&feature=youtube_gdata

I find it useful to show how bad chips act, for comparison with the good chips. For those of you who care, the failure rate is about one in thirteen ICs across my sample set of 160+ chips.

Why the Blacet Time Machine?
It's a unique module. Synth designers like Blacet (and others like him) deserve to have their good work recognized. The older parts make it special and unlikely to be replicated.

'Families' of MN3005 BBD IC
From the 160+ ICs I bought, there appear to be three 'families.' I do not have any production documentation from Panasonic nor Matsushita, but the 'families' could relate to different production facilities and/or timeframes.

A) 'Shiny Top' Triangle Logo ICs- these appear to be the oldest ICs. They have a shiny top surface, and the text is faded relative to the other ICs. They do not have the characteristic edge band around the circumference of the top. These ICs' have an indent on the top of the chip that is ABOVE the logo and date code. The bottom indent lacks any text.
B) 'Edge Band' Triangle Logo ICs- these ICs have the visible edge band around the top of the IC and the triangle logo. These ICs have an indent on the top of the chip that is BELOW the logo and date code. The bottom indent contains some combination of letters and numbers usually two items but sometimes three.
C) 'Circle Logo' ICs- these have the logo described by an 'M' inside of a rounded box and would appear to be the newest of the ICs in this assortment.

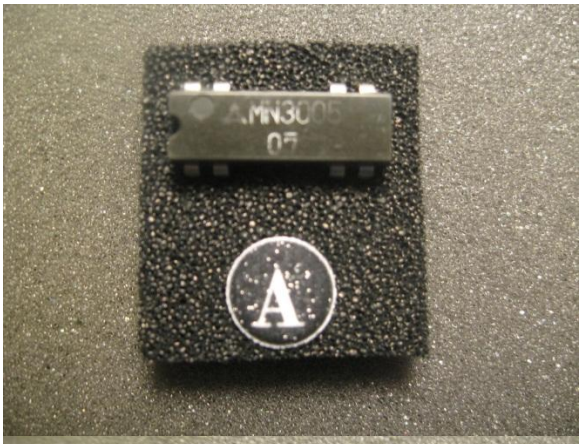
When you listen to the videos, and view the scope traces, you'll see very little correlation between the families and their resultant sounds; in other words, they appear to be interchangeable across families.

Disclaimers

I have acted in good faith to buy and test these ICs. I am a hobbyist I did this because I enjoy these devices and helping others enjoy them. I am not an engineer and this is not a full-time job. I cannot guarantee that these are 'genuine'-- only that they work as demonstrated in the videos and pictures. These are electrostatically sensitive devices and although I take ESD precautions, they are subject to damage from static discharge. There is a good reason that highly qualified people like Steve Daniels at smallbearelec.com don't have them anymore. Some of these are NOS and some are pulls, and you can evaluate that based on the photos and documentation. I have invested my own money in buying and testing a bunch of these.

Ref ID	Logo	Top Edge Band?	Date Code	Bottom Indent Code	Top Indent- Above/Below Logo?	Note
!	Circle M	N	78 7	a3	B	
A	Triangle	N	07 -	none/illegible	A	shiny top
AB	Triangle	Y	4N9	12D	B	TESTED BAD
AC	Triangle	Y	4N -	H7	B	
AD	Triangle	N	illegible	none/illegible	A	shiny top
AE	Triangle	N	89 -	none/illegible	A	shiny top
AF	Triangle	Y	26 -	D4	B	TESTED BAD
AG	Triangle	Y	34 -	A3	B	
AH	Triangle	Y	5N -	D2	B	
AI	Triangle	Y	illegible	F4	B	faded text/some abrasion on top
B	Circle M	Y	96 -	2D	B	slight chip- right edge/faded text
BK	Triangle	Y	55 -	B6	B	some wear on top
BL	Triangle	Y	35 -	M4	B	
BM	Triangle	Y	40 -	A6	B	TESTED BAD
C	Triangle	N	21 -	none/illegible	A	shiny top
D	Circle M	Y	26 1	15H	B	
E	Triangle	Y	illegible	L8	B	faded text
EC	Circle M	Y	53 7	A7	B	
ED	Circle M	Y	53 7	16L	B	
EF	Circle M	Y	53 7	K7	B	
EG	Circle M	Y	53 7	15H	B	
EH	Circle M	Y	53 7	16	B	
F	Triangle	N	1N (?)	none/illegible	A	shiny top
G	Circle M	Y	10 4	7B	B	slight scratch on top
H	Triangle	Y	64 -	M7	B	slight scratch on top
I	Triangle	Y	86 -	G5	B	
IA	Circle M	Y	53 7	6G	B	
IE	Circle M	Y	53 7	10K	B	
IF	Circle M	Y	53 7	F3	B	
IG	Circle M	Y	53 7	9J	B	
IH	Circle M	Y	53 7	1G	B	
IJ	Circle M	Y	53 7	M4	B	
IK	Triangle	Y	57 -	B2	B	
IL	Triangle	Y	39 -	J6	B	
IM	Triangle	Y	59 -	E1	B	
IN	Triangle	N	55 -	C7	B	
IO	Triangle	Y	69 -	F4	B	
IP	Triangle	Y	50 -	F4	B	
IQ	illegible	N	illegible	none/illegible	A	shiny top
IR	Circle M	Y	53 7	9D	B	
J	Triangle	Y	83 -	J3	B	
JS	Circle M	Y	53 7	13B	B	
JT	Circle M	Y	53 7	12S	B	
K	Triangle	Y	30 -	K1	B	TESTED BAD
L	Triangle	Y	57 -	D7	B	
LA	Circle M	Y	53 7	10J	B	
LE	Circle M	Y	53 7	9D	B	
LF	Circle M	Y	53 7	8E	B	
LG	Circle M	Y	53 7	5J	B	
LH	Circle M	Y	53 7	4K	B	
LI	Circle M	Y	53 7	3K	B	
LJ	Circle M	Y	53 7	F1	B	
LM	Circle M	Y	53 7	13S	B	TESTED BAD
LP	Circle M	Y	53 7	E3	B	
LR	Circle M	Y	53 7	G8	B	
M	Triangle	Y	50 -	G1	B	
MA	Circle M	Y	53 7	E2	B	
ME	Circle M	Y	53 7	14D	B	
MH	Circle M	Y	53 7	K1	B	TESTED BAD
MI	Circle M	Y	53 7	5P	B	
MJ	Circle M	Y	53 7	G7	B	
N	Triangle	Y	26 -	K6	B	
NL	Circle M	Y	53 7	K8	B	
NM	Circle M	Y	53 7	4B	B	
NP	Circle M	Y	53 7	5H	B	
NQ	Circle M	Y	53 7	5H	B	
NR	Circle M	Y	53 7	15K	B	
O	Triangle	Y	57 -	L2	B	
OC	Triangle	Y	3D -	K8	B	chipped edge
OD	Triangle	Y	3N -	C3	B	
OE	Triangle	Y	97 -	L6	B	TESTED BAD
OF	Triangle	Y	86 -	A6	B	
OG	Triangle	Y	86 -	G7	B	
OH	Triangle	N	90 -	none/illegible	A	shiny top
OK	Triangle	Y	30 -	D5	B	
P	Triangle	Y	5N -	M8	B	
Q	Triangle	Y	57 -	H4	B	
R	Triangle	N	3? -	none/illegible	A	shiny top
R0	Circle M	Y	53 7	M8	B	

Ref ID	Logo	Top Edge Band?	Date Code	Bottom Indent Code	Top Indent- Above/Below Logo?	Note
R1	Circle M	Y	53 7	16P	B	
R2	Circle M	Y	53 7	6D	B	
R3	Circle M	Y	53 7	E8	B	
R4	Circle M	Y	53 7	D4	B	
R5	Circle M	Y	53 7	13M	B	
S	Triangle	Y	40 -	J1	B	
SA	Circle M	Y	53 7	K6	B	
SC	Circle M	Y	53 7	1E	B	
SD	Circle M	Y	53 7	15A	B	
SE	Circle M	Y	53 7	H7	B	
SF	Circle M	Y	53 7	F4	B	TESTED BAD
SG	Circle M	Y	53 7	3L	B	
SH	Circle M	Y	53 7	16L	B	
SP	Circle M	Y	53 7	4D	B	
SR	Circle M	Y	53 7	6G	B	
ST	Circle M	Y	53 7	15M	B	
SU	Circle M	Y	53 7	H1	B	
SV	Circle M	Y	53 7	2H	B	
T	Triangle	Y	58 -	L2	B	
TA	Circle M	Y	53 7	2N	B	
TB	Circle M	Y	53 7	L4	B	
TC	Circle M	Y	53 7	15G	B	
TD	Circle M	Y	53 7	6S	B	
TE	Circle M	Y	53 7	5C	B	
TF	Circle M	Y	53 7	E1	B	
TG	Circle M	Y	53 7	1R	B	
TR	Circle M	Y	53 7	3H	B	
TV	Circle M	Y	53 7	F1	B	
TW	Circle M	Y	53 7	3C	B	
TX	Circle M	Y	53 7	D6	B	
U	Triangle	Y	89 -	C6	B	
U0	Circle M	Y	53 7	5E	B	
UA	Circle M	Y	53 7	8M	B	
UB	Circle M	Y	53 7	14G	B	
UC_a	Triangle	Y	82 -	E1	B	
UC_b	Circle M	Y	53 7	A1	B	
UD_a	Triangle	Y	5N -	J1	B	
UD_b	Circle M	Y	53 7	14F	B	
UE_a	Triangle	Y	82 -	F1	B	
UE_b	Circle M	Y	53 7	7E	B	
UF_a	Triangle	Y	83 -	B1	B	
UF_b	Circle M	Y	53 7	1K	B	
UG_a	Triangle	Y	80 -	K5	B	
UG_b	Circle M	Y	53 7	2L	B	
UH_a	Triangle	Y	64 -	H2	B	
UH_b	Circle M	Y	53 7	8F	B	
UK_a	Triangle	Y	67 -	K4	B	
V	Triangle	Y	86 -	L5	B	
VA	Circle M	Y	53 7	7N	B	
VB	Circle M	Y	53 7	12E	B	
VC	Circle M	Y	53 7	5G	B	
VD	Circle M	Y	53 7	A5	B	
VE	Circle M	Y	53 7	11G	B	
W	Triangle	Y	65 -	J5	B	
WA	Circle M	Y	53 7	C5	B	
WB	Circle M	Y	53 7	A4	B	
WC	Circle M	Y	53 7	1M	B	TESTED BAD
WD	Circle M	Y	53 7	14M	B	
WE	Circle M	Y	53 7	11H	B	
X	Triangle	Y	62 -	G7	B	
Y	Triangle	Y	72 -	D4	B	
Y0	Circle M	Y	53 7	2C	B	
Y1	Circle M	Y	53 7	E1	B	
Y2	Circle M	Y	53 7	8R	B	
Y3	Circle M	Y	53 7	13A	B	
Y4	Circle M	Y	53 7	16C	B	
Y5	Circle M	Y	53 7	K3	B	
Y6	Circle M	Y	53 7	5D	B	
Y7	Circle M	Y	53 7	C8	B	
Y8	Circle M	Y	53 7	9J	B	
Y9	Circle M	Y	53 7	9A	B	
YA	Circle M	Y	53 7	A3	B	
YB	Circle M	Y	53 7	C7	B	
YR	Circle M	Y	53 7	A7	B	
YV	Circle M	Y	53 7	F6	B	
YW	Circle M	Y	53 7	7L	B	
YX	Circle M	Y	53 7	9C	B	
YZ	Circle M	Y	53 7	13H	B	TESTED BAD
Z	Triangle	Y	87 -	E2	B	
ZZ	Circle M	Y	53 7	14L	B	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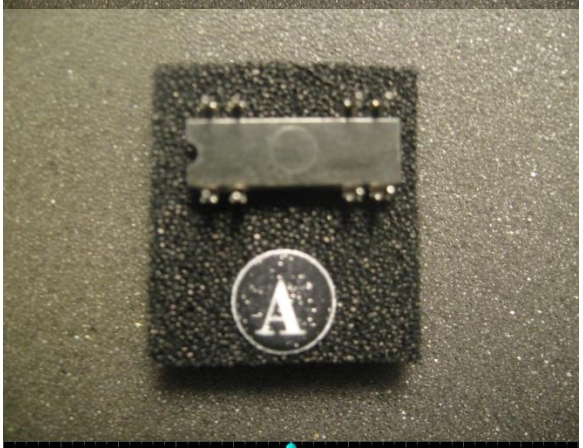
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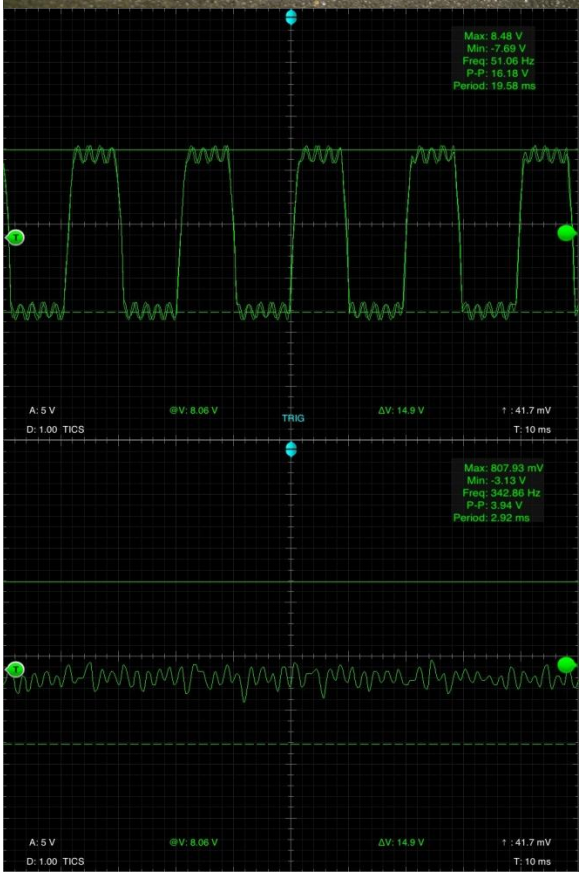
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@V: 8.06 V
TRIG
ΔV: 14.9 V
↑ : 41.7 mV
D: 1.00 TICS
T: 10 ms
Max: 807.93 mV
Min: -3.13 V
Freq: 342.86 Hz
P-P: 3.94 V
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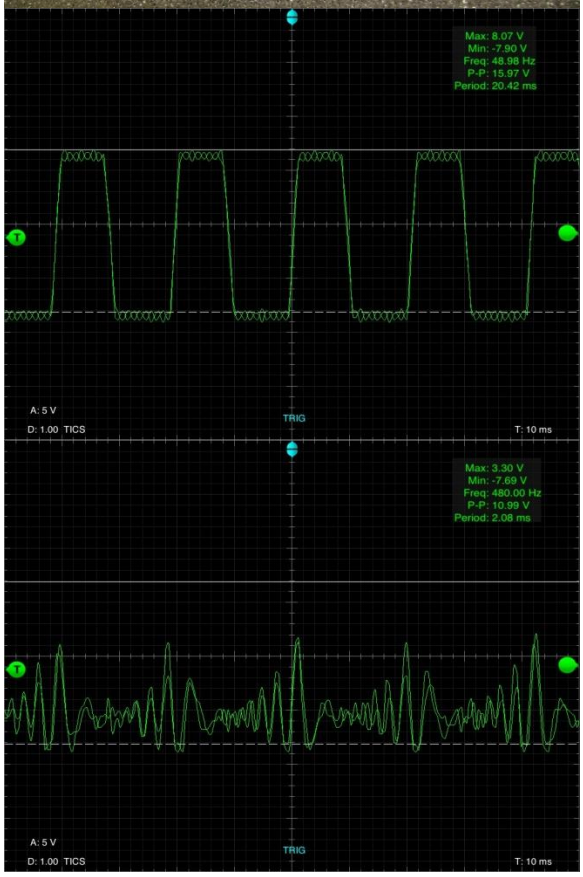
ΔV: 14.9 V
↑ : 41.7 mV
D: 1.00 TICS
T: 10 ms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T: 10 ms
Max: 3.30 V
Min: -7.69 V
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T: 10 ms

MM3005
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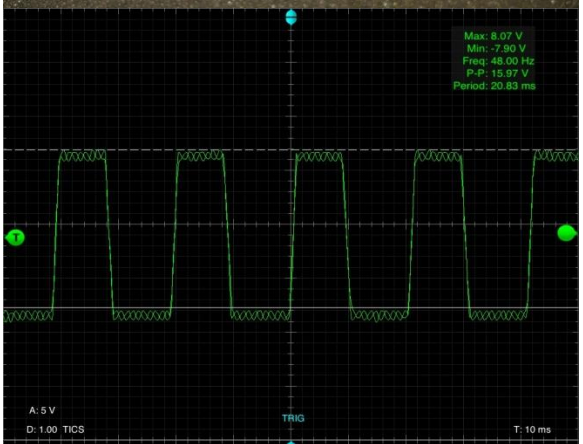
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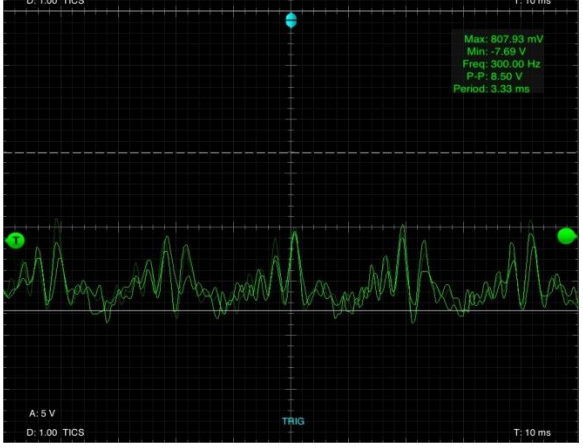
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TRIG
T: 10 ms