



## PUNCH 45 25 TO LIFE (2005, Limited Edition)

# VS

## PUNCH 45 HD MOSFET (1990-1992)

### RATED SPECIFICATIONS

- 4 Ohms:  
22.5 Watts per channel RMS, both channels driven  
from 20 - 20,000 Hertz, at 1.0% THD+N  
measured at 14.4 Battery Volts
- 2 Ohms:  
35 Watts per channel RMS, both channels driven  
from 20 - 20,000 Hertz, at 1.0% THD+N  
measured at 14.4 Battery Volts
- 4 Ohms Bridged:  
70 Watts RMS, bridged  
from 20 - 20,000 Hertz, at 1.0% THD+N  
measured at 14.4 Battery Volts

- 4 Ohms:  
22.5 Watts per channel continuous power,  
both channels driven, from 20 - 20,000 Hertz,  
with less than 0.5% THD+N
- 2 Ohms:  
35 Watts per channel continuous power,  
both channels driven, from 20 - 20,000 Hertz,  
with less than .10% THD+N
- 4 Ohms Bridged:  
70 Watts continuous power, bridged  
from 20 - 20,000 Hertz,  
with less than .10% THD+N

### ACTUAL MEASUREMENTS, BOTH CHANNELS DRIVEN, 14.4 VOLTS

- RMS Power @ 1.0% THD, 1 KHz input  
82 Watts x 2 @ 4 Ohms  
131 Watts x 2 @ 2 Ohms  
264 Watts x 1 @ 4 Ohms
- THD, 1 KHz input @ Rated Power  
.024%, 4 ohms per channel  
.047%, 2 ohms per channel  
.025%, 4 ohms bridged

Efficiency at 2 Ohm Stereo, 1.0% THD+N (1 KHz): 66%  
Input Signal Voltage Range into 4 ohm stereo @ 1.0% THD+N: 152 mV - 4.59V  
A-weighted S/N (1 VRMS input @ 1 KHz, 1 Watt output into 4 ohms): -93 dbA  
A-weighted S/N (1 VRMS input @ 1 KHz, full power into 4 ohms): -112 dbA  
Channel Separation with 1 KHz input, minimum gain to rated power: Ch.A -58dB  
Ch.B -58dB

- RMS Power @ 1.0% THD, 1 KHz input  
50 Watts x 2 @ 4 Ohms  
76 Watts x 2 @ 2 Ohms  
100 Watts x 1 @ 4 Ohms
- THD, 1 KHz input @ Rated Power  
.025%, 4 ohms per channel  
.04%, 2 ohms per channel  
.04%, 4 ohms bridged

Efficiency at 2 Ohm Stereo, 1.0% THD+N (1 KHz): 58%  
Input Signal Voltage Range into 4 ohm stereo @ 1.0% THD+N: 135 mV - 2.36V  
A-weighted S/N (1 VRMS input @ 1 KHz, 1 Watt output into 4 ohms): -87 dbA  
A-weighted S/N (1 VRMS input @ 1 KHz, full power into 4 ohms): -103 dbA  
Channel Separation with 1 KHz input, minimum gain to rated power: Ch.A -76dB  
Ch.B -73dB

### FEATURES

- 4 AWG Power and Ground Inputs
- 8 AWG Speaker Wire Outputs
- Remote Punch Bass, 0 to +18dB @ 45 Hz
- On-board 30 Amp ATC fuse
- Variable 12dB/oct crossover
- RCA Pass-Thru Outputs
- Limited Edition, numbered (only 2,500 will be built)

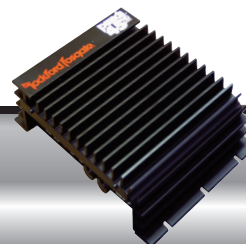
- 12 AWG Power and Ground Inputs
- Speaker Pigtail, 16 AWG wire
- Punch Bass, 0 to +18dB @ 45 Hz
- Punch Treble, 0 to +12dB @ 20,000 Hz

PUNCH 45  
25 TO LIFE



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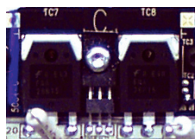
PUNCH 45  
HD MOSFET



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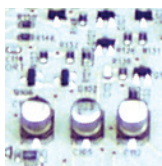
## PUNCH 45 HD MOSFET (1990-1992)



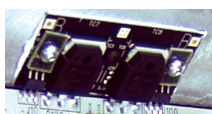
- 1 Custom Designed TO-247 MOSFETs**  
60% more tab area than the old TO-220 provides greater power handling, cooling, and reliability. Not happy with an "off the shelf" TO-247, RF engineers custom designed it to their vigorous specifications.



- 2 "Booted" Toroid**  
By eliminating the long leads, RF engineers have been able to all but eliminate mechanical transformer noise while improving manufacturing efficiency.



- 3 Discrete Surface Mount Components**  
DSM components are laser etched to meet a particular value and are of a very low tolerance. This lower tolerance improves circuit efficiency, decreases cross-talk, and lowers operating temperature.



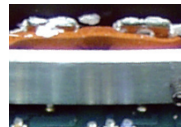
- 4 MOSFETs Mounted via MEHSA Technology**  
Maximum Efficiency Heat Sink Application - offers a 20% lower thermal impedance when compared to clamp bar / SilPad mounting. This lowers MOSFET temps, reduces distortion, increases durability . . . and allows RF engineers to squeeze MORE power from the MOSFETs. Ain't fair, is it?



- 5 Focused Mass Heatsink**  
RF engineers use the latest software to focus or place the critical heatsink mass around the power components that need it the most. In conjunction with MEHSA, the heatsink runs HOT while the internals run COOL!



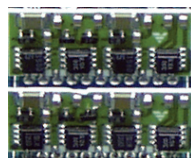
- 6 8 AWG Speaker Outputs**  
**7 Port for Remote Punch Bass Controller**  
**8 Adjustable Low/High Pass Crossover Network**  
**9 Recessed RCA Inputs and PassThrus**  
**10 4 AWG Power and Ground Inputs**



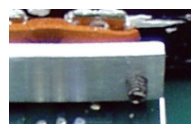
- 1 TO-220 MOSFETs**  
Jim Fosgate began using these devices in Fosgate amplifiers in 1976 and they served us well for 18 years. But, given the power requirements of the new Punch platform, a MUCH larger device was in order.



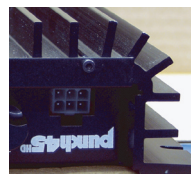
- 2 Toroid Suspended Off PCB**  
This "old school" way could lead to mechanical transformer noise as a function of the production process.



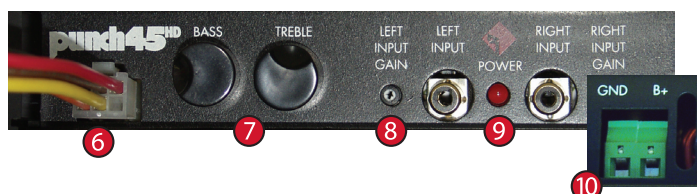
- 3 Vertical "Hybrid" Surface Mounted Modules**  
"Hybrid Design" or HD amplifiers used the very first surface mount components in Rockford's history. Over the years, we've progressed from surface mount modules to surface mounting right on the printed circuit boards.



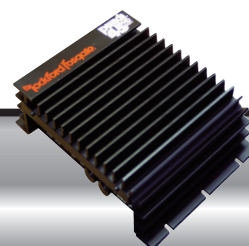
- 4 FETS Clamped to Heatsink via Bars and SilPads**  
This "old school" way of transferring heat from the devices to the heatsink just won't do when it comes to coaxing every last watt out of a MOSFET. By the way, this is how most of our competitors' amps are built today!



- 5 Extruded Aluminum Heatsink**  
The MOSFETs are clamped to the vertical sides of the heatsink only - over 50% of the amplifiers' heat-sinking mass is not near the devices. This "old school" design reduces high volume play time before thermal protection sets in.



- 6 16 AWG Speaker Pigtail**  
**7 Punch Bass and Treble Controls**  
**8 Input Gain**  
**9 RCA Inputs**  
**10 12 AWG Power Connector**

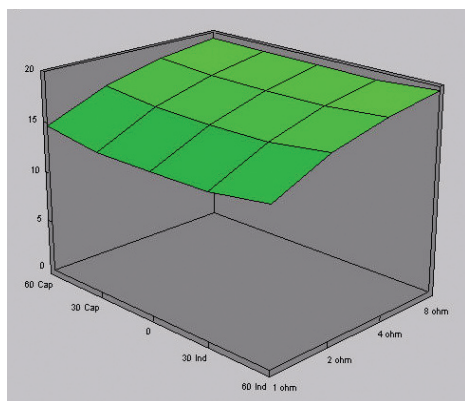


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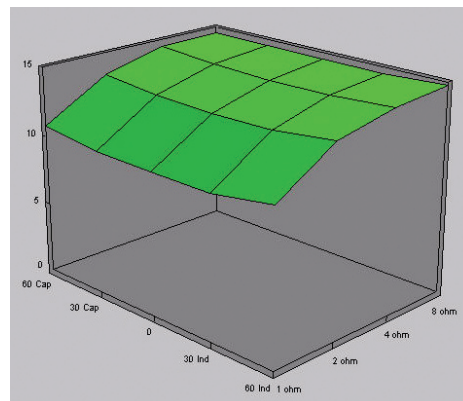
## PUNCH 45 HD MOSFET (1990-1992)

The below Audiograph PowerCube™ results are designed to test an amplifier's capability of delivering linearly short term currents into capacitive and inductive (not just resistive) speaker loads. These tests do not mean an amplifier will drive a 1-ohm load. It's designed specifically to mimic an amplifier's ability to perform under real-world 4-ohm loudspeaker loads.



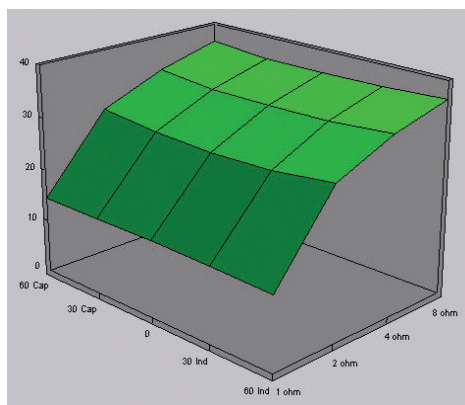
25 TO LIFE PUNCH 45 DATA

8 Ohm 60° Cap 47 W	4 Ohm 0° Res 82 W	2 Ohm 60° Ind 150 W
8 Ohm 30° Cap 46 W	4 Ohm 30° Ind 83 W	1 Ohm 60° Cap 216 W
8 Ohm 0° Res 46 W	4 Ohm 60° Ind 88 W	1 Ohm 30° Cap 192 W
8 Ohm 30° Ind 46 W	2 Ohm 60° Cap 147 W	1 Ohm 0° Res 190 W
8 Ohm 60° Ind 48 W	2 Ohm 30° Cap 138 W	1 Ohm 30° Ind 192 W
4 Ohm 60° Cap 86 W	2 Ohm 0° Res 136 W	1 Ohm 60° Ind 217 W
4 Ohm 30° Cap 83 W	2 Ohm 30° Ind 137 W	



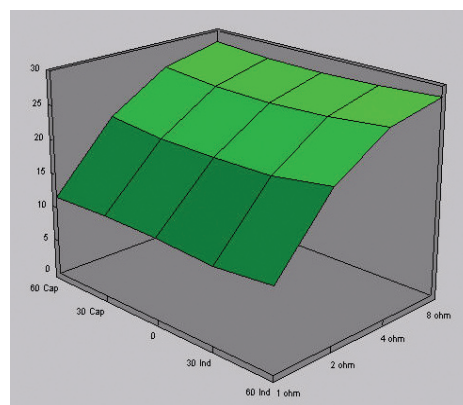
PUNCH 45 HD DATA

8 Ohm 60° Cap 27 W	4 Ohm 0° Res 49 W	2 Ohm 60° Ind 91 W
8 Ohm 30° Cap 26 W	4 Ohm 30° Ind 50 W	1 Ohm 60° Cap 116 W
8 Ohm 0° Res 26 W	4 Ohm 60° Ind 52 W	1 Ohm 30° Cap 104 W
8 Ohm 30° Ind 26 W	2 Ohm 60° Cap 90 W	1 Ohm 0° Res 104 W
8 Ohm 60° Ind 27 W	2 Ohm 30° Cap 84 W	1 Ohm 30° Ind 104 W
4 Ohm 60° Cap 52 W	2 Ohm 0° Res 83 W	1 Ohm 60° Ind 118 W
4 Ohm 30° Cap 50 W	2 Ohm 30° Ind 84 W	



25 TO LIFE PUNCH 45 BRIDGED DATA

8 Ohm 60° Cap 167 W	4 Ohm 0° Res 263 W	2 Ohm 60° Ind 410 W
8 Ohm 30° Cap 159 W	4 Ohm 30° Ind 266 W	1 Ohm 60° Cap 213 W
8 Ohm 0° Res 159 W	4 Ohm 60° Ind 284 W	1 Ohm 30° Cap 209 W
8 Ohm 30° Ind 161 W	2 Ohm 60° Cap 409 W	1 Ohm 0° Res 212 W
8 Ohm 60° Ind 168 W	2 Ohm 30° Cap 374 W	1 Ohm 30° Ind 202 W
4 Ohm 60° Cap 282 W	2 Ohm 0° Res 365 W	1 Ohm 60° Ind 195 W
4 Ohm 30° Cap 264 W	2 Ohm 30° Ind 373 W	



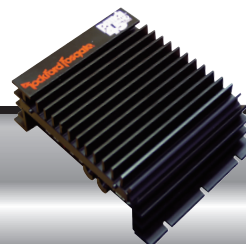
PUNCH 45 HD BRIDGED DATA

8 Ohm 60° Cap 101 W	4 Ohm 0° Res 162 W	2 Ohm 60° Ind 236 W
8 Ohm 30° Cap 96 W	4 Ohm 30° Ind 167 W	1 Ohm 60° Cap 137 W
8 Ohm 0° Res 96 W	4 Ohm 60° Ind 180 W	1 Ohm 30° Cap 140 W
8 Ohm 30° Ind 97 W	2 Ohm 60° Cap 224 W	1 Ohm 0° Res 138 W
8 Ohm 60° Ind 102 W	2 Ohm 30° Cap 207 W	1 Ohm 30° Ind 125 W
4 Ohm 60° Cap 175 W	2 Ohm 0° Res 204 W	1 Ohm 60° Ind 144 W
4 Ohm 30° Cap 164 W	2 Ohm 30° Ind 207 W	

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