

# Amplificatore HLA 305

## List of components

|              |                |          |            |                |          |      |           |
|--------------|----------------|----------|------------|----------------|----------|------|-----------|
| C 1          | = 10 pF        | 50V      | NP0        | C 25 - C 26    | = 1300pF | 500V | Mica      |
| C 2          | = 100 nF       | 50V      |            | C 27 to C 30   | = 100 nF | 500V | SMD       |
| C 3          | = 10 nF        | 50V      |            | C 31 to C 32   | = 470 pF | 200V | SMD       |
| C 4          | = 220 nF       | 50V      | Multilayer | C 33           | = 220 pF | 500V | Mica      |
| C 5          | = 10 pF        | 50V      | NP0        | C 34           | = 470 pF | 200V | SMD       |
| C 6          | = 22 pF        | 50V      | NP0        | C 35           | = 22 pF  | 500V | NP0       |
| C 7          | = 82 pF        | 50V      | NP0        | C 36           | = 39 pF  | 500V | Mica      |
| C 8          | = 4,7 pF       | 50V      | NP0        | C 37           | = 39 pF  | 500V | Mica      |
| C 9          | = 22 µF        | 25V      |            | C 38           | = 12 pF  | 500V | Mica      |
| C 10 - C 11  | = 100 nF       | 50V      |            | C 39           | = 56 pF  | 500V | Mica      |
| C 12         | = 470 µF       | 25V      |            | C 40           | = 56 pF  | 500V | Mica      |
| C 13 - C 14  | = 2x470 pF     | 50V N750 |            | C 41           | = 68 pF  | 500V | Mica      |
| C 15         | = 100 nF       | 50V      |            | C 42           | = 18 pF  | 500V | Mica      |
| C 16         | = non presente |          |            | C 43           | = 39 pF  | 500V | Mica      |
| C 17         | = non presente |          |            | C 44           | = 47 pF  | 500V | Mica      |
| C 18         | = non presente |          |            | C 45           | = 39 pF  | 500V | Mica      |
| C 19 to C 20 | = 100 pF       | 50V      | NP0        | C 46           | = 39 pF  | 500V | Mica      |
| C 21 to C 24 | = 4,7 nF       | 50V      |            | C 47           | = 12 pF  | 500V | Mica      |
| C 49         | = 68 pF        | 500V     | Mica       | C 48           | = 68 pF  | 500V | Mica      |
| C 50         | = 68 pF        | 500V     | Mica       | C 122          | = 100 nF | 50V  |           |
| C 51         | = 18 pF        | 500V     | Mica       | C 123          | = 4,7 pF | 50 V | NP0       |
| C 52         | = 39 pF        | 500V     | Mica       | C 124          | = 470 pF | 200V | SMD       |
| C 53         | = 39 pF        | 500V     | Mica       | C 125 - C 126  | = 10 nF  | 50V  |           |
| C 54         | = 51 pF        | 500V     | Mica       | C 127          | = 100 nF | 50 V |           |
| C 55         | = 51 pF        | 500V     | Mica       | C 128          | = 220 pF | 500V | Mica      |
| C 56         | = 15 pF        | 500V     | Mica       | C 129          | = 1,0 nF | 50V  |           |
| C 57         | = 91 pF        | 500V     | Mica       | C 130          | = 10 nF  | 50V  |           |
| C 58         | = 91 pF        | 500V     | Mica       | C 131          | = 1,0 nF | 500V |           |
| C 59         | = 91 pF        | 500V     | Mica       | C 132          | = 470 nF | 100V | Polyester |
| C 60         | = 56 pF        | 500V     | Mica       | C 133          | = 10 nF  | 50V  |           |
| C 61         | = 56 pF        | 500V     | Mica       | C 134          | = 1,0 nF | 500V |           |
| C 62         | = 56 pF        | 500V     | Mica       | C 135          | = 470 nF | 100V | Polyester |
| C 63         | = 180 pF       | 500V     | Mica       | C 136 to C 140 | = 100 nF | 50 V |           |
| C 64         | = 180 pF       | 500V     | Mica       | C 141          | = 68 pF  | 500V | Mica      |
| C 65         | = 39 pF        | 500V     | Mica       | C 142          | = 330 pF | 500V | Mica      |
| C 66         | = 200 pF       | 500V     | Mica       | C 143          | = 330 pF | 500V | Mica      |
| C 67         | = 200 pF       | 500V     | Mica       | C 144          | = 390 pF | 500V | Mica      |
| C 68         | = 100 nF       | 50 V     |            | C 145          | = 180 pF | 500V | Mica      |
| C 69         | = 200 pF       | 500V     | Mica       | C 146          | = 220 pF | 500V | Mica      |
| C 70         | = 120 pF       | 500V     | Mica       | C 147          | = 220 pF | 500V | Mica      |
|              |                |          |            | C 148          | = 750 pF | 500V | Mica      |

|                |               |      |            |
|----------------|---------------|------|------------|
| C 71           | = 100 pF      | 500V | Mica       |
| C 72           | = 100 pF      | 500V | Mica       |
| C 73           | = 220 pF      | 500V | Mica       |
| C 74           | = 220 pF      | 500V | Mica       |
| C 75           | = 10 $\mu$ F  | 25 V |            |
| C 76           | = 470 $\mu$ F | 25 V |            |
| C 77           | = 220 pF      | 50 V | N750       |
| C 78 - C 79    | = 220 nF      | 50V  | Multilayer |
| C 80           | = 10 $\mu$ F  | 25 V |            |
| C 81           | = 100 nF      | 50 V |            |
| C 82           | = 22 $\mu$ F  | 25 V |            |
| C 83 - C 84    | = 100 nF      | 50 V |            |
| C 85 to C 87   | = 220 nF      | 50V  | Multilayer |
| C 88           | = 100 nF      | 50 V |            |
| C 89 - C 90    | = 220 nF      | 50V  | Multilayer |
| C 91 to C 93   | = 100 nF      | 50 V |            |
| C 94           | = 100 $\mu$ F | 35 V |            |
| C 95 to C 103  | = 100 nF      | 50 V |            |
| C 103          | = 10 $\mu$ F  | 25 V |            |
| C 104 - C 105  | = 470 $\mu$ F | 25 V |            |
| C 106          | = 100 nF      | 50 V |            |
| C 107          | = 470 nF      | 100V | Polyester  |
| C 108 to C 112 | = 100 nF      | 50 V |            |
| C 113 to C 116 | = 100 nF      | 500V | SMD        |
| C 117          | = 220 nF      | 50V  | Multilayer |
| C 120          | = 100 nF      | 50V  |            |
| C 121          | = 10 nF       | 50V  |            |

|                |                  |      |           |
|----------------|------------------|------|-----------|
| C 149          | = 750 pF         | 500V | Mica      |
| C 150          | = 150 pF         | 500V | Mica      |
| C 151          | = 750 pF         | 500V | Mica      |
| C 152          | = 750 pF         | 500V | Mica      |
| C 153          | = 750 pF         | 500V | Mica      |
| C 154          | = 430 pF         | 500V | Mica      |
| C 155          | = 510 pF         | 500V | Mica      |
| C 156          | = 510 pF         | 500V | Mica      |
| C 157 - C 158  | = 10 nF          | 50V  |           |
| C 159 - C 164  | = 100 nF         | 50V  |           |
| C 165          | = 10 nF          | 50V  |           |
| C 166          | = 100 nF         | 50V  |           |
| C 167 - C 168  | = 10 nF          | 50V  |           |
| C 169          | = 100 nF         | 63V  | Polyester |
| C 170          | = 10 nF          | 50V  |           |
| C 171 to C 179 | = 100 nF         | 50V  |           |
| C 180          | = 100 $\mu$ F    | 35 V |           |
| R 1            | = 22 K $\Omega$  | ¼W   |           |
| R 2            | = 47 K $\Omega$  | ¼W   |           |
| R 3            | = 1,0 K $\Omega$ | ¼W   |           |
| R 4 - R 5      | = 100 K $\Omega$ | ¼W   |           |
| R 6 - R 7      | = 330 $\Omega$   | ¼W   |           |
| R 8            | = 10 K $\Omega$  | ¼W   |           |
| R 9 to R 11    | = 2,2 $\Omega$   | 1W   |           |
| R 12           | = 1,0 K $\Omega$ | ¼W   |           |
| R 13           | = 470 K $\Omega$ | ¼W   |           |
| R 14           | = 1,0 K $\Omega$ | ¼W   |           |

|                               |    |                         |                  |
|-------------------------------|----|-------------------------|------------------|
| R 15 to R 17 = 4,7 K $\Omega$ | ¼W | TRIM 2 = 10 K $\Omega$  |                  |
| R 18 = 2,2 $\Omega$           | 1W | TRIM 3 = 1,0 K $\Omega$ |                  |
| R 19 = 10 K $\Omega$          | ¼W | Att 1 = -3 dB           |                  |
| R 20 = 1,0 K $\Omega$         | ¼W | D 1 - D 5 = 1N4148      |                  |
| R 21 = 33 $\Omega$            | 5W | D 6 = 1N5711            |                  |
| R 22 - R 23 = 10 K $\Omega$   | ¼W | D 7 to D 9 = 1N4148     |                  |
| R 24 = 10 $\Omega$            | 5W | D 10 - D 11 = 1N5711    |                  |
| R 25 = 1,0 $\Omega$           | ¼W | D 12 = 1N4007           |                  |
| R 26 - R 27 = 10 K $\Omega$   | ¼W | D 13 = 1N5400           |                  |
| R 28 = 4,7 K $\Omega$         | ¼W | D 14 = 1N4148           |                  |
| R 29 = 10 K $\Omega$          | ¼W | D 15 = 1N4007           |                  |
| R 30 = 10 K $\Omega$          | ¼W | D 16 = BAT41            |                  |
| R 31 to R 32 = 10 $\Omega$    | 5W | D 17 - D 18 = 1N4148    |                  |
| R 33 = 10 K $\Omega$          | ¼W | D 19 - D 20 = 1N4007    |                  |
| R 34 = 100 $\Omega$           | 2W | D 22 to D 28 = 1N4007   |                  |
| R 35 to R 38 = 2,2 $\Omega$   | 1W | D 29 to D 31 = 1N5400   |                  |
| R 39 to R 42 = 8,2 $\Omega$   | 1W | Led 19 = Alarm          |                  |
| R 43 = 100 $\Omega$           | 5W | Led 20 = TX             |                  |
| R 44 = 10 K $\Omega$          | ¼W | Tr 1 = BF199            |                  |
| R 45 - R 46 = 10 K $\Omega$   | ¼W | Tr 2 to Tr 4 = BC547B   |                  |
| R 47 to R 50 = 1,0 K $\Omega$ | ¼W | Tr 5 = BC337-25         |                  |
| R 51 - R 52 = 47 $\Omega$     | ½W | Tr 6 = BDX53BFP         |                  |
| R 53 = 1,0 K $\Omega$         | ¼W | Tr 7 - Tr 10 = MRF455   |                  |
| R 54 - R 55 = 2,2 K $\Omega$  | ¼W | Tr 11 = BC557B          |                  |
| R 56 = 47 $\Omega$            | ¼W | Tr 20 = BC337-25        |                  |
| R 57 - R 58 = 10 K $\Omega$   | ¼W | Ic 1 = 74HC14           |                  |
| R 59 to R 60 = 68 $\Omega$    | ¼W | Ic 2 = 74HC74           |                  |
| R 61 = 2,7 K $\Omega$         | ¼W | Ic 3 = 18F46K20         |                  |
| R 62 = 10 K $\Omega$          | ¼W | Ic 4 = 74CBTD3384       |                  |
| R 63 = 220 K $\Omega$         | ¼W | Ic 5 = LD1117V33C       |                  |
| R 64 = 4,7 K $\Omega$         | ¼W | Ic 6 = 7805             |                  |
| R 65 = 10 K $\Omega$          | ¼W | Ic 7 = M41T00           |                  |
| R 66 to R 67 = 1,0 K $\Omega$ | ¼W | Ic 9 = LM324            |                  |
| R 68 = 4,7 K $\Omega$         | ¼W | Ic 10 = LM723C          |                  |
| R 69 = 1,0 K $\Omega$         | ¼W | Ic 11 = ACS758LCB-50    |                  |
| R 70 = 2,2 K $\Omega$         | ¼W | Ic 12 = AD8534          |                  |
| R 71 = 1,0 K $\Omega$         | ¼W | Ic 13 = M41T00CAP       |                  |
| R 86 to R 87 = 10 K $\Omega$  | ¼W | Ic 14 = 24LC1025        |                  |
| R 88 to R 91 = 8,2 $\Omega$   | 1W | Ic 15 = MCP23017        |                  |
| R 92 = 1,0 $\Omega$           | ¼W | Ic 16 = UDN2981         |                  |
| R 93 = 1,0 K $\Omega$         | ¼W | L 1 = 10 $\mu$ H        |                  |
| R 94 = 18 K $\Omega$          | ¼W | L 2 - L 3 = VK200       |                  |
| R 95 = 8,2 K $\Omega$         | ¼W | L 5 - L 6 = VK200       |                  |
| R 96 = 100 $\Omega$           | ¼W | L 7 - L 8 = VK200       | Verticale 2 fili |
| R 97 = 2,2 K $\Omega$         | ¼W | L 9 = 300 nH            | SEM 9608961005   |
| Rr 4 - Rr 5 = 6A103G          |    | L 10 = 250 nH           | SEM 9608961004   |
| Rr 6 = 8B470G                 |    | L 11 = 550 nH           | SEM 9608961008   |
| Rr 7 - Rr 8 = 6A103G          |    | L 12 = 450 nH           | SEM 9608961007   |
| NTC 1 = 10 K $\Omega$         |    |                         |                  |

L 13 = 630 nH SEM 9608961009  
L 14 = 550 nH SEM 9608961008  
L 15 = 1,3  $\mu$ H SEM 9608960211  
L 16 = 1,0  $\mu$ H SEM 9608960209  
L 17 = 2,7  $\mu$ H SEM 9608960217  
L 18 = 2,5  $\mu$ H SEM 9608960216  
L 19 = 5,3  $\mu$ H SEM 9608960225  
L 20 = 4,6  $\mu$ H SEM 9608960223  
L 21 = 1,0 mH  
L 25 = 1,0 mH  
L 26 = 470 $\mu$ H  
L 27 = 2,2  $\mu$ H  
L 28 - L 29 = VK200 Verticale 2 fili  
L 30 = 1,0 mH  
RL 1 = 41.52.7.012  
RL 2 = 30,22.9.012  
RL 3 - RL 14 = 34.51.7.012  
T 1 = SEM 961000005  
T 2 = FER 251000115  
T 3 = FER 251000115  
T 4 = FER 251000109  
T 5 = FER 251000109  
T 6 = SEM 961000006  
T 7 = SEM 961100020  
T 8 = SEM 961100015  
T 9 = ANRA 963  
T 10 = ANRA 963  
B 1 = MB12A12  
Fuse 5 = 20A  
Fuse 6 = 20A  
Fuse 7 = 1,6A  
Xt1 = non presente