



**Solid State
Division**

Power Transistors

40594 40595 40611 40613
40616 40618 40621 40622
40624 40625 40627-40632
40634-40636

| | |
|---|--|
| | |
| H-1534R1 | H-1570 |
| 40613 40627 40618 40629 40621 40630 40622 40631 40624 40632 | 40636 JEDEC TO-3 |
| JEDEC TO-220AA (For TO-66 Sockets) | |
| | |
| H-1468 | 40594S |
| 40625L or S 40628L or S | 40595S |
| With Heat-Radiator | 40611S |
| See NOTE at right above | 40616S |
| | 40634S |
| | 40635S |
| | 40594L 40595L 40611L 40616L 40635L |
| | JEDEC TO-39 |
| | JEDEC TO-5 |
| | See NOTE at right |
| | H-1380 |
| | H-1381 |

Silicon Transistors for Audio-Frequency Linear-Amplifier Applications

Transistors for Driver Applications:

N-P-N Types

40594 40616 40628
40611 40625 40635

P-N-P Types

40595 40634

NOTE:

These devices are available with either 1½-inch leads (TO-5 package) or ½-inch leads (TO-39 package). The longer-lead versions are specified by suffix "L" after the type number; the shorter-lead versions are specified by suffix "S" after the type number.

Transistors for Output Applications:

N-P-N Types

| | | |
|-------|-------|-------|
| 40613 | 40624 | 40631 |
| 40618 | 40627 | 40632 |
| 40621 | 40629 | 40636 |
| 40622 | 40630 | |

TERMINAL CONNECTIONS FOR TYPES IN TO-220AA PACKAGE

Lead No.1 — Base
Stub — Do not use stub as tie point.
Lead No.3 — Emitter
Mounting Flange — Collector

TERMINAL CONNECTIONS FOR 40636

Pin 1 — Base
Pin 2 — Emitter
Case — Collector
Mounting Flange — Collector

RCA-40594, 40595, 40611, 40613, 40616, 40618, 40621, 40622, 40624, 40627-40632, and 40634-40636, inclusive are silicon n-p-n and p-n-p transistors intended for driver and output stages in high-fidelity amplifier circuits.

These devices have been specifically designed for use in complementary-and-quasi-complementary-symmetry audio-amplifier circuits.

TERMINAL CONNECTIONS FOR TYPES IN TO-5 OR TO-39 PACKAGE

Lead 1 — Emitter
Lead 2 — Base
Case, Lead 3 — Collector

TERMINAL CONNECTIONS FOR 40625 AND 40628

Lead 1 — Emitter
Lead 2 — Base
Heat-Radiator, Lead 3 — Collector

MAXIMUM RATINGS, Absolute-Maximum Values:

| RCA Type | $V_{CEO(sus)}$ V | $V_{CER(sus)*}$ V | V_{EBO} V | I_C A | I_B A | $P_T - W^{\circ}$ | | Temp. Range (Storage & Operating) | | |
|----------|---------------------|----------------------|----------------|------------|------------|---------------------|---------------------|--------------------------------------|----|-----|
| | | | | | | $T_C = 25^{\circ}C$ | $T_A = 25^{\circ}C$ | $^{\circ}C$ | | |
| | | | | | | | | - | to | + |
| 40594 | - | 95 | 4 | 2 | 1 | 10 | 1.2 | 65 | to | 200 |
| 40595 | - | -95 | -4 | -2 | -1 | 10 | 1.2 | 65 | to | 200 |
| 40611 | 25 | - | 2.5 | 0.7 | 0.2 | 5 | 1 | 65 | to | 200 |
| 40613 | 25 | - | 5 | 4 | 2 | 36 | 1.8 | 65 | to | 150 |
| 40616 | 32 | - | 2.5 | 0.7 | 0.2 | 5 | 1 | 65 | to | 200 |
| 40618 | 30 | - | 5 | 4 | 2 | 36 | 1.8 | 65 | to | 150 |
| 40621 | 32 | - | 5 | 4 | 2 | 36 | 1.8 | 65 | to | 150 |
| 40622 | 40 | - | 5 | 4 | 2 | 36 | 1.8 | 65 | to | 150 |
| 40624 | 45 | - | 5 | 6 | 3 | 50 | 1.8 | 65 | to | 150 |
| 40625 | 45 | - | 7 | 1 | - | - | 3.5 | 65 | to | 200 |
| 40627 | 55 | - | 5 | 6 | 3 | 50 | 1.8 | 65 | to | 150 |
| 40628 | 55 | - | 7 | 1 | - | - | 3.5 | 65 | to | 200 |
| 40629 | - | 35 | 5 | 4 | 2 | 36 | 1.8 | 65 | to | 150 |
| 40630 | - | 40 | 5 | 4 | 2 | 36 | 1.8 | 65 | to | 150 |
| 40631 | - | 45 | 5 | 4 | 2 | 36 | 1.8 | 65 | to | 150 |
| 40632 | - | 60 | 5 | 6 | 3 | 50 | 1.8 | 65 | to | 150 |
| 40634 | - | -75 | -7 | -0.7 | -0.2 | 5 | 1 | 65 | to | 200 |
| 40635 | - | 75 | 7 | 0.7 | 0.2 | 5 | 1 | 65 | to | 200 |
| 40636 | - | 95 | 7 | 15 | 7 | 115 | - | 65 | to | 200 |

* $R_{BE} = 68 \Omega$ (40612, 40623, & 40626)
 $= 100 \Omega$ (40594, 40595, 40629, 40630, 40631, 40632, 40633, 40634, 40635, & 40636)

P_T at temperatures above $25^{\circ}C$, derate linearly to 0 watts at maximum temperature
(e.g. +100, +150, or +200 $^{\circ}C$).

ELECTRICAL CHARACTERISTICS, At Case Temperature = $25^{\circ}C$

| RCA Type | I_{CBO} Max. | | I_{CER} Max. | | | | I_{EBO} Max. | | | $V_{CEO(sus)}$ Min. | |
|----------|----------------|---------------|----------------|-----|---------------|----------------------|----------------|----|---------------|---------------------|-------------|
| | μA | V_{CB} V | μA | mA | V_{CE} V | R_{BE} Ω | μA | mA | V_{EB} V | V | I_C mA |
| | | | | | | | | | | | |
| 40611 | 0.5 | 15 | - | - | - | - | - | 1 | 2.5 | 25 | 100 |
| 40613 | 2 | 25 | - | - | - | - | - | 1 | 5 | 25 | 100 |
| 40616 | 0.5 | 15 | - | - | - | - | - | 1 | 5 | 32 | 100 |
| 40618 | 2 | 30 | - | - | - | - | - | 1 | 5 | 30 | 100 |
| 40621 | 0.5 | 30 | - | - | - | - | - | 1 | 5 | 32 | 100 |
| 40622 | - | - | 500 | - | 40 | 100 | - | 1 | 5 | 40 | 100 |
| 40624 | - | - | 500 | - | 45 | 100 | - | 1 | 5 | 45 | 100 |
| 40625 | 0.25 | 60 | - | - | - | - | 1 | - | 5 | 45 | 100 |
| 40627 | - | - | 500 | - | 55 | 100 | - | 1 | 5 | 55 | 100 |
| 40628 | 0.25 | 60 | - | - | - | - | 1 | - | 5 | 55 | 100 |
| 40629 | - | - | - | 0.5 | 30 | 100 | - | 1 | 5 | - | - |

ELECTRICAL CHARACTERISTICS, At Case Temperature = 25°C (Cont'd)

| RCA Type | I _{CBO} Max. | | I _{CER} Max. | | | | I _{EBO} Max. | | | V _{CEQ(sus)} Min. | |
|----------|-----------------------|-------------------|-----------------------|-----|-------------------|-------------------|-----------------------|------|-------------------|----------------------------|-------------------|
| | μA | V _{CB} V | μA | mA | V _{CE} V | R _{BE} Ω | μA | mA | V _{EB} V | V | I _C mA |
| 40630 | - | - | - | 0.5 | 35 | 100 | - | 1 | 5 | - | - |
| 40631 | - | - | - | 0.5 | 40 | 100 | - | 1 | 5 | - | - |
| 40632 | - | - | - | 0.5 | 50 | 100 | - | 1 | 5 | - | - |
| 40634 | - | - | -10 | - | -65 | 100 | - | -0.1 | -4 | - | - |
| 40635 | - | - | 10 | - | 65 | 100 | - | 0.1 | 4 | - | - |
| 40636 | - | - | - | 0.5 | 85 | 100 | - | 1 | 4 | - | - |
| 40594 | - | - | 10 | - | 85 | 100 | - | 0.1 | 4 | - | - |
| 40595 | - | - | -10 | - | -85 | 100 | - | -0.1 | -4 | - | - |

| V _{CE(sus)} Min. | | | V _{CE(sat)} Max. | | | V _{BE} Max. | | | h _{FE} | | | | RCA Type |
|---------------------------|-------------------|-------------------|---------------------------|-------------------|-------------------|----------------------|-------------------|-------------------|-----------------|------|-------------------|-------------------|----------|
| V | I _C mA | R _{BE} Ω | V | I _C mA | I _B mA | V | V _{CE} V | I _C mA | Min. | Max. | I _C mA | V _{CE} V | |
| - | - | - | - | - | - | - | - | - | 70 | 500 | 50 | 4 | 40611 |
| - | - | - | - | - | - | 1.3 | 4 | 1000 | 30 | 120 | 1000 | 4 | 40613 |
| - | - | - | - | - | - | - | - | - | 70 | 500 | 50 | 4 | 40616 |
| - | - | - | - | - | - | - | - | - | 30 | 120 | 1000 | 4 | 40618 |
| - | - | - | 1 | 1500 | 150 | 1.5 | 4 | 1500 | 25 | 100 | 1500 | 4 | 40621 |
| - | - | - | 1 | 1500 | 150 | 1.5 | 4 | 1500 | 25 | 100 | 1500 | 4 | 40622 |
| - | - | - | 1 | 2500 | 250 | 1.7 | 4 | 2500 | 20 | 100 | 2500 | 4 | 40624 |
| - | - | - | 0.5 | 150 | 15 | 1 | 4 | 150 | 100 | 300 | 150 | 10 | 40625 |
| - | - | - | 1 | 2500 | 250 | 1.7 | 4 | 2500 | 20 | 100 | 2500 | 4 | 40627 |
| - | - | - | 0.5 | 150 | 15 | 1 | 4 | 150 | 100 | 300 | 150 | 10 | 40628 |
| 35 | 100 | 100 | 1 | 1000 | 100 | 1.3 | 4 | 1000 | 20 | 70 | 1000 | 4 | 40629 |
| 40 | 100 | 100 | 1 | 1500 | 150 | 1.4 | 4 | 1500 | 20 | 70 | 1500 | 4 | 40630 |
| 45 | 100 | 100 | 1 | 2000 | 200 | 1.5 | 4 | 2000 | 20 | 70 | 2000 | 4 | 40631 |
| 60 | 100 | 100 | 1 | 3000 | 300 | 1.4 | 4 | 3000 | 20 | 70 | 3000 | 4 | 40632 |
| -75 | -100 | 100 | -0.8 | -150 | -15 | -1.4 | -4 | -150 | 50 | 250 | -150 | -4 | 40634 |
| 75 | 100 | 100 | 0.8 | 150 | 15 | 1.4 | 4 | 150 | 50 | 250 | 150 | 4 | 40635 |
| 95 | 200 | 100 | 1 | 4000 | 400 | 1.4 | 4 | 4000 | 20 | 70 | 4000 | 4 | 40636 |
| 95 | 100 | 100 | 0.8 | 300 | 30 | 1.4 | 4 | 300 | 70 | 350 | 300 | 4 | 40594 |
| -95 | -100 | 100 | -0.8 | -300 | -30 | -1.4 | -4 | -300 | 70 | 350 | -300 | -4 | 40595 |