

THE CL155 (PNP) AND CL166 (NPN) ARE SILICON PLANAR EPITAXIAL COMPLEMENTARY PAIR SPECIALLY DESIGNED FOR 2-WATT AUDIO AMPLIFIER OUTPUT AND SWITCHING APPLICATIONS. THEY FEATURE LOW COLLECTOR-EMITTER KNEE VOLTAGE AND GOOD LINEARITY OF D.C. CURRENT GAIN.

TO-92A



EBC

**ABSOLUTE MAXIMUM RATINGS**

For p-n-p devices, voltage and current values are negative

|   |                |              |
|---|----------------|--------------|
| Collector-Base Voltage                          | $V_{CBO}$      | 30V          |
| Collector-Emitter Voltage                       | $V_{CEO}$      | 25V          |
| Emitter-Base Voltage                            | $V_{EBO}$      | 5V           |
| Collector Current                               | $I_C$          | 1.5A         |
| Collector Peak Current ( $t \leq 50\mu s$ )     | $I_{CM}$       | 2.2A         |
| Total Power Dissipation @ $T_C \leq 25^\circ C$ | $P_{tot}$      | 1.5W         |
| Without Heat Sink @ $T_A \leq 25^\circ C$       |                | 625mW        |
| Operating Junction & Storage Temperature        | $T_j, T_{stg}$ | -55 to 150°C |

**ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ C$  unless otherwise noted)**

| PARAMETER                            | SYMBOL          | MIN | TYP  | MAX  | UNIT    | TEST CONDITIONS   |
|--------------------------------------|-----------------|-----|------|------|---------|---|
| Collector-Base Breakdown Voltage     | $V_{CBO}$       | 30  |      |      | V       | $I_C = 100\mu A, I_B = 0$   |
| Collector-Emitter Breakdown Voltage  | $V_{CEO}^*$     | 25  |      |      | V       | $I_C = 10mA, I_B = 0$   |
| Collector Cutoff Current             | $I_{CES}$       |     |      | 0.5  | $\mu A$ | $V_{CE} = 20V, V_{BE} = 0$  |
| Emitter Cutoff Current               | $I_{EBO}$       |     |      | 1.0  | $\mu A$ | $V_{EB} = 5V, I_C = 0$  |
| Collector-Emitter Knee Voltage       | $V_{CEK}$       |     | 0.2  | 0.4  | V       | $I_C = 0.2A, I_B = \text{value at which } I_C = 0.22A, V_{CE} = 1V$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}^*$ |     | 0.25 | 0.45 | V       | $I_C = 1A, I_B = 0.1A$  |
| Base-Emitter Voltage                 | $V_{BE}^*$      |     | 0.82 | 1.2  | V       | $I_C = 0.5A, V_{CE} = 1V$   |
| D.C. Current Gain (Note)             | $H_{FE} 1^*$    | 50  | 160  | 360  |         | $I_C = 0.1A, V_{CE} = 1V$   |
|                                      | $H_{FE} 2^*$    | 30  | 110  |      |         | $I_C = 1A, V_{CE} = 2V$   |
| Current Gain-Bandwidth Product       | $f_T$           |     | 120  |      | MHz     | $I_C = 50mA, V_{CE} = 10V$  |

Note :  $H_{FE} 1$  is classified as follows.

Group A : 50-100  
Group C : 120-240

Group B : 80-160  
Group D : 180-360

\* Pulse Test : Pulse Width=0.3ms, Duty Cycle=1%



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