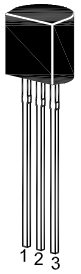
# ST 2SC1393

## NPN Silicon Epitaxial Planar Transistor

### TV VHF TUNER RF AMPLIFIER (FORWARD AGC)

The transistor is subdivided into three group, R, O and Y, according to its DC current gain.

On special request, these transistors can be manufactured in different pin configurations.




1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

**Absolute Maximum Ratings ($T_a$ = 25 °C)**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector Base Voltage | $V_{CBO}$ | 30 | V |
| Collector Emitter Voltage | $V_{CEO}$ | 30 | V |
| Emitter Base Voltage | $V_{EBO}$ | 4 | V |
| Collector Current | $I_C$ | 20 | mA |
| Collector Dissipation | $P_{tot}$ | 250 | mW |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | - 55 to + 150 | °C |

**Characteristics at $T_a$ = 25 °C**

| Parameter | | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| DC Current Gain at $V_{CE}$ = 10 V, $I_C$ = 2 mA | Current Gain Group | R | $h_{FE}$ | 40 | - | 80 | - |
| | | O | $h_{FE}$ | 60 | - | 140 | - |
| | | Y | $h_{FE}$ | 90 | - | 180 | - |
| Collector Base Cutoff Current at $V_{CB}$ = 20 V | | | $I_{CBO}$ | - | - | 0.1 | µA |
| Collector Base Breakdown Voltage at $I_C$ = 10 µA | | | $V_{(BR)CBO}$ | 30 | - | - | V |
| Collector Emitter Breakdown Voltage at $I_C$ = 5 mA | | | $V_{(BR)CEO}$ | 30 | - | - | V |
| Emitter Base Breakdown Voltage at $I_E$ = 10 µA | | | $V_{(BR)EBO}$ | 4 | - | - | V |
| AGC Current $I_E$ at $G_{pe}$ = -30 dB, f = 200 MHz | | | $I_{AGC}$ | - | -10 | -12 | mA |
| Reverse Transfer Capacitance at $V_{CB}$ = 10 V, f = 1 MHz | | | $C_{re}$ | - | 0.35 | 0.5 | pF |
| Current Gain Bandwidth Product at $V_{CE}$ = 10 V, $I_C$ = 3 mA | | | $f_T$ | 400 | 700 | - | MHz |
| Power Gain at $V_{CE}$ = 10 V, f = 200 MHz, $R_S$ = 50 Ω, $I_E$ = -3 mA | | | $G_{pe}$ | 20 | 24 | - | dB |
| Noise Figure at $V_{CE}$ = 10 V, $I_E$= -3 mA, f = 200 MHz, $R_S$ = 50 Ω | | | NF | - | 2.0 | 3.0 | dB |