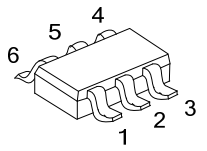
2SC5508 **Preliminary** ***NPN EPITAXIAL SILICON TRANSISTOR***

# NPN SILICON RF TRANSISTOR




SOT-363

## ■ DESCRIPTION

The UTC **2SC5508** is an NPN silicon RF transistor, it uses UTC's advanced technology to provide customers with low-noise, etc.

The UTC **2SC5508** is suitable for low-noise, high-gain amplification applications.

## ■ FEATURES

* Maximum available power gain: MAG=19dB TYP. @ $V_{CE}$=2V, $I_C$=20mA, f=2GHz
* $f_T$=25GHz technology adopted

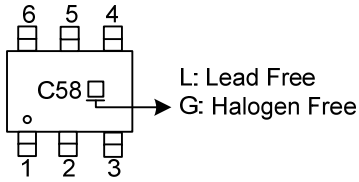
## ■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | | | | Packing |
|---|---|---|---|---|---|---|---|---|---|
| Lead Free | Halogen Free | | 1 | 2 | 3 | 4 | 5 | 6 | |
| 2SC5508L-x-AL6-R | 2SC5508G-x-AL6-R | SOT-363 | E1 | B1 | C2 | E2 | B2 | C1 | Tape Reel |

Note: Pin Assignment: E: Emitter B: Base C: Collector

| | |
|---|---|
| 2SC5508G-x-AL6-R<br>(1)Packing Type<br>(2)Package Type<br>(3)Rank<br>(4)Green Package | (1) R: Tape Reel<br>(2) AL6: SOT-363<br>(2) x: reference to Classification of $h_{FE}$<br>(4) G: Halogen Free and Lead Free, L: Lead Free |

## ■ MARKING



## ■ ABSOLUTE MAXIMUM RATINGS ($T_A$=25°C, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 15 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 3.3 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 1.5 | V |
| Collector Current | $I_C$ | 35 | mA |
| Power Dissipation | $P_D$ | 115 | mW |
| Junction Temperature | $T_J$ | +150 | °C |
| Storage Temperature | $T_{STG}$ | -65 ~ +150 | °C |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

## ■ THERMAL RESISTANCE

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---|---|---|---|
| Junction to Ambient Resistance | $\theta_{JA}$ | 650 | °C/W |
| Junction to Case Resistance | $\theta_{JC}$ | 150 | °C/W |

## ■ ELECTRICAL CHARACTERISTICS ($T_A$=+25°C)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| **DC CHARACTERISTICS** | | | | | | |
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB}$=5V, $I_E$=0 | | | 200 | nA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB}$=1V, $I_C$=0 | | | 200 | nA |
| DC Current Gain (Note 1) | $h_{FE}$ | $V_{CE}$=2V, $I_C$=5mA | 50 | 70 | 100 | |
| **RF CHARACTERISTICS** | | | | | | |
| Gain Bandwidth Product | $f_T$ | $V_{CE}$=3V, $I_C$=30mA, f=2GHz | | 25 | | GHz |
| Reverse Transfer Capacitance (Note 2) | $C_{re}$ | $V_{CB}$=2V, $I_E$=0, f=1MHz | | 0.18 | | pF |

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.
2. Collector to base capacitance when the emitter grounded.

## ■ CLASSIFICATION OF $h_{FE}$

| RANK | B |
|---|---|
| RANGE | 50 ~ 100 |