

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CMUT5179
type is an NPN silicon RF transistor manufactured by the epitaxial planar process, epoxy molded in an ULTRAmini ${ }^{\text {TM }}$ surface mount package, designed for low noise, high frequency amplifier and high output oscillator applications.

MARKING CODE: HC7

| SYMBOL |  | UNITS |
| :---: | :---: | :---: |
| $\mathrm{V}_{\text {CBO }}$ | 20 | V |
| $\mathrm{~V}_{\text {CEO }}$ | 15 | V |
| $\mathrm{~V}_{\text {EBO }}$ | 2.5 | V |
| $\mathrm{I}_{\mathrm{C}}$ | 50 | mA |
| $\mathrm{P}_{\mathrm{D}}$ | 250 | mW |
| $\mathrm{~T}_{\mathrm{J}}, \mathrm{T}_{\text {stg }}$ | -65 to +150 | ${ }^{\circ} \mathrm{C}$ |
| $\Theta_{\text {JA }}$ | 500 | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |

MAXIMUM RATINGS: $\left(\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}\right)$
Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

ELECTRICAL CHARACTERISTICS: $\left(T_{A}=25^{\circ} \mathrm{C}\right.$ unless otherwise noted)
SYMBOL TEST CONDITIONS MIN

| ${ }^{\mathrm{I}} \mathrm{CBO}$ | $\mathrm{V}_{\mathrm{CB}}=15 \mathrm{~V}$ |
| :--- | :--- |
| BV $_{\mathrm{CBO}}$ | $\mathrm{I}_{\mathrm{C}}=10 \mu \mathrm{~A}$ |

$\mathrm{BV}_{\text {CEO }} \quad \mathrm{I}_{\mathrm{C}}=3.0 \mathrm{~mA}$
$\mathrm{BV}_{\mathrm{EBO}} \quad \mathrm{I}_{\mathrm{E}}=10 \mu \mathrm{~A}$
$\begin{array}{ll}\mathrm{V}_{\mathrm{CE}}(\mathrm{SAT}) & \mathrm{I}_{\mathrm{C}}=10 \mathrm{~mA}, \mathrm{I}_{\mathrm{B}}=1.0 \mathrm{~mA} \\ \mathrm{~V}_{\mathrm{BE}(\mathrm{SAT})} & \mathrm{I}_{\mathrm{C}}=10 \mathrm{~mA}, \mathrm{I}_{\mathrm{B}}=1.0 \mathrm{~mA}\end{array}$
$\mathrm{h}_{\mathrm{FE}} \quad \mathrm{V}_{\mathrm{CE}}=1.0 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=3.0 \mathrm{~mA}$
$\mathrm{f}_{\mathrm{T}} \quad \mathrm{V}_{\mathrm{CE}}=6.0 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=5.0 \mathrm{~mA}, \mathrm{f}=100 \mathrm{MHz} \quad 900$
$\begin{array}{ll}\mathrm{C}_{\mathrm{Cb}} & \mathrm{V}_{\mathrm{CB}}=10 \mathrm{~V}, \mathrm{I}_{\mathrm{E}}=0, \mathrm{f}=0.1 \text { to } 1.0 \mathrm{MHz} \\ \mathrm{h}_{\mathrm{fe}} & \mathrm{V}_{\mathrm{CE}}=6.0 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=2.0, \mathrm{f}=1.0 \mathrm{kHz}\end{array}$
$\begin{array}{ll}\mathrm{G}_{\text {pe }} & \mathrm{V}_{\mathrm{CE}}=6.0 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=5.0 \mathrm{~mA}, \mathrm{f}=200 \mathrm{MHz} \\ \mathrm{NF} & \mathrm{V}_{\mathrm{CE}}=6.0 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=1.5 \mathrm{~mA}, \mathrm{R}_{\mathrm{S}}=50 \Omega, \mathrm{f}=200 \mathrm{MHz}\end{array}$

TYP

20
15
2.5

5

| MAX | UNITS |
| :---: | :---: |
| 20 | nA |
|  | V |
|  | V |
|  | V |
| 0.4 | V |
| 1.0 | V |
|  | MHz |
| 1.0 | pF |

15 dB
$4.5 \quad \mathrm{~dB}$


SOT-523 CASE - MECHANICAL OUTLINE

R2
(Bottom View)
LEAD CODE:

1) Base
2) Emitter
3) Collector
MARKING CODE: HC7

| DIMENSIONS |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | INCHES |  | MILLIMETERS |  |
| SYMBOL | MIN | MAX | MIN | MAX |
| A | 0.023 | 0.031 | 0.58 | 0.78 |
| B | 0.002 | 0.008 | 0.04 | 0.20 |
| C | 0.013 | 0.021 | 0.34 | 0.54 |
| D | 0.059 | 0.067 | 1.50 | 1.70 |
| E | 0.059 | 0.067 | 1.50 | 1.70 |
| F | 0.035 | 0.043 | 0.90 | 1.10 |
| G | 0.020 |  | 0.50 |  |
| H | 0.031 | 0.039 | 0.78 | 0.98 |
| J | 0.010 | 0.014 | 0.25 | 0.35 |

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