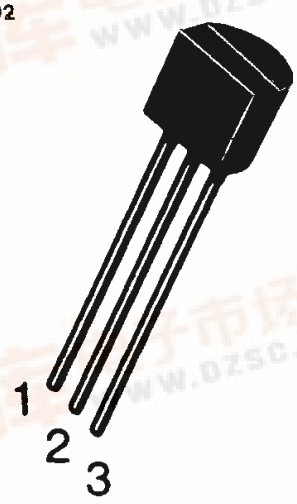
# Transistors
# 2SC9016

USHA (INDIA) LTD

## AM CONVERTER, FM/RF AMPLIFIER OF LOW NOISE.

- High total power dissipation. (PT=400mW)

TO-92




1. Emitter 2. Base 3. Collector

## ABSOLUTE MAXIMUM RATINGS ($T_a$=25°C)

| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 30 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 20 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 4 | V |
| Collector Current | $I_C$ | 25 | mA |
| Collector Dissipation | $P_C$ | 400 | mW |
| Junction Temperature | Tj | 150 | °C |
| Storage Temperature | Tstg | −55~150 | °C |

## ELECTRICAL CHARACTERISTICS ($T_a$=25°C)

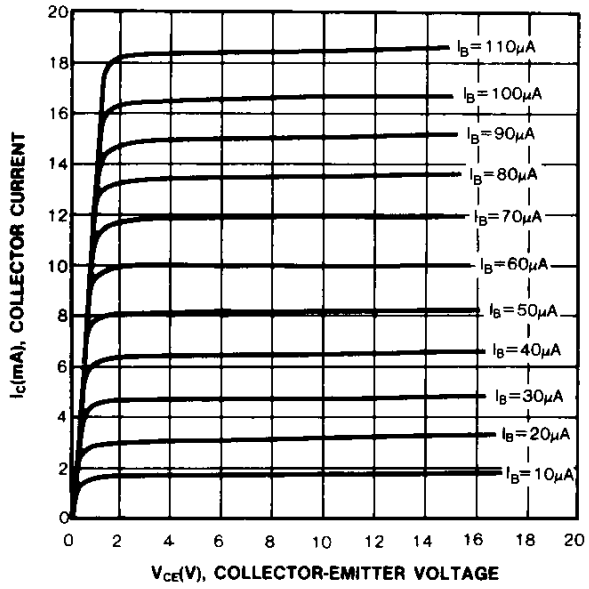
| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $BV_{CBO}$ | $I_C$=100μA, $I_E$=0 | 30 | | | V |
| Collector-Emitter Breakdown Voltage | $BV_{CEO}$ | $I_C$=1mA, $I_B$=0 | 20 | | | V |
| Emitter-Base Breakdown Voltage | $BV_{EBO}$ | $I_E$=100μA, $I_C$=0 | 4 | | | V |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$=30V, $I_E$=0 | | | 100 | nA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$=3V, $I_C$=0 | | | 100 | nA |
| DC Current Gain | $h_{FE}$ | $V_{CE}$=5V, $I_C$=1mA | 28 | 90 | 198 | |
| Collector-Emitter Saturation Voltage | $V_{CE}$(sat) | $I_C$=10mA, $I_B$=1mA | | 0.1 | 0.3 | V |
| Base-Emitter On Voltage | $V_{BE}$ (on) | $V_{CE}$=5V, $I_C$=1mA | | 0.72 | | V |
| Output Capacitance | $C_{ob}$ | $V_{CB}$=10V, $I_E$=0 f=1MHz | | 1.2 | 1.6 | pF |
| Current Gain-Bandwidth Product | $f_T$ | $V_{CE}$=5V, $I_C$=1mA | 400 | 620 | | MHz |
| Noise Figure | NF | $V_{CE}$=5V, $I_C$=1.0mA f=100MHz, Rs=50Ω | | 3.0 | 5.0 | dB |

## $h_{FE}$ CLASSIFICATION

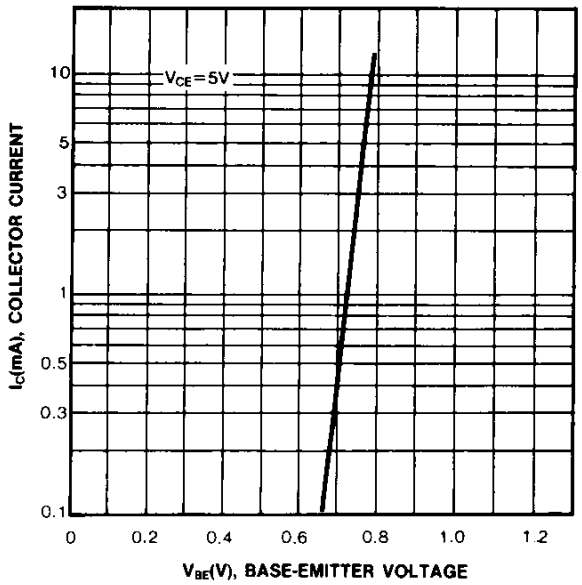
| Classification | D | E | F | G | H | I |
|---|---|---|---|---|---|---|
| $h_{FE}$ | 28-45 | 39-60 | 54-80 | 72-108 | 97-146 | 132-198 |

ISO 14001 CERTIFIED
AN ISO 9002 COMPANY

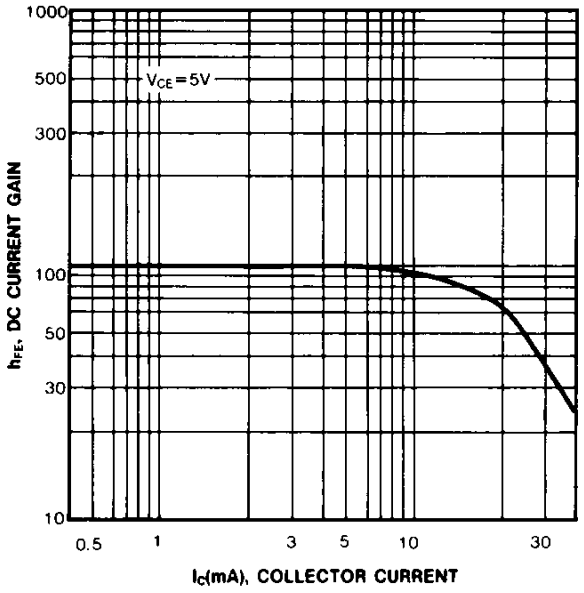
## STATIC CHARACTERISTIC



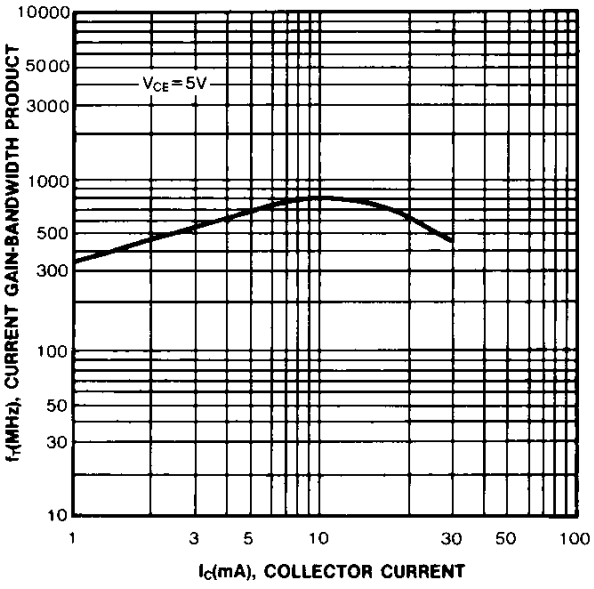

## BASE-EMITTER ON VOLTAGE



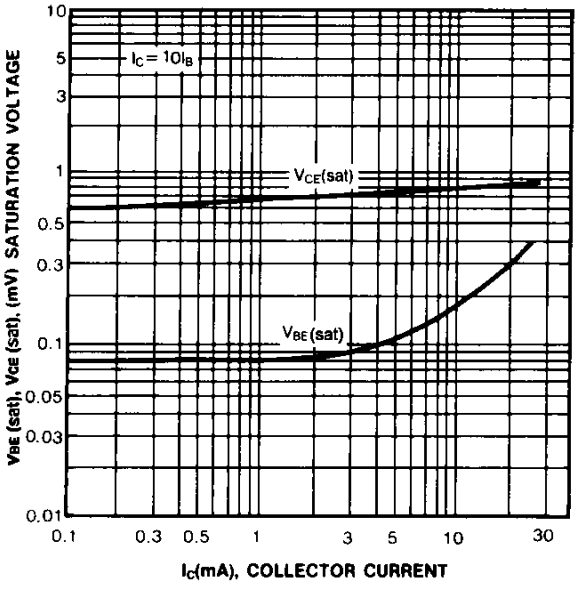

## DC CURRENT GAIN




## CURRENT GAIN-BANDWIDTH PRODUCT




## BASE-EMITTER SATURATION VOLTAGE
## COLLECTOR-EMITTER SATURATION VOLTAGE




## COLLECTOR OUTPUT CAPACITANCE