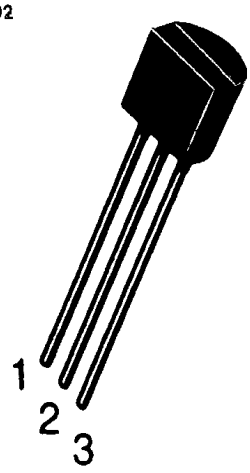
# Transistors
# 2SC945

USHA (INDIA) LTD

## AUDIO FREQUENCY AMPLIFIER
## HIGH FREQUENCY OSC.

- **Complement to KSA733**
- **Collector-Base Voltage $V_{CBO}$ = 60V**
- **High Current Gain Bandwidth Product $f_T$ = 300MHz (Typ)**

TO-92




1. Emitter 2. Base 3. Collector

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

| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 60 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 50 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current | $I_C$ | 150 | mA |
| Collector Dissipation | $P_C$ | 250 | mW |
| Junction Temperature | Tj | 150 | °C |
| Storage Temperature | Tstg | −55 ~ 150 | °C |

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

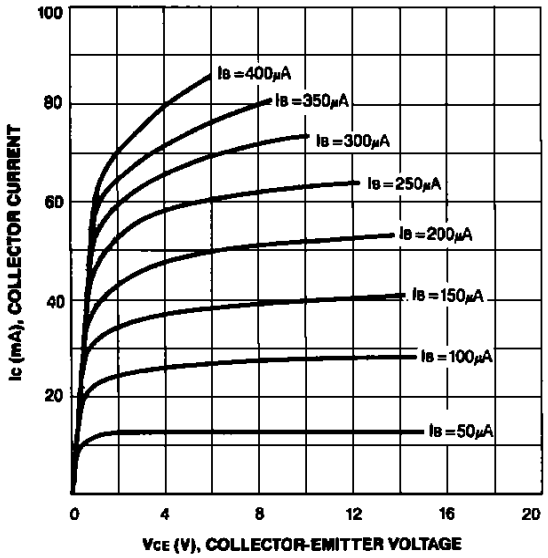
| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $BV_{CBO}$ | $I_C$ = 100μA, $I_E$ = 0 | 60 | | | V |
| Collector-Emitter Breakdown Voltage | $BV_{CEO}$ | $I_C$ = 10mA, $I_B$ = 0 | 50 | | | V |
| Emitter-Base Breakdown Voltage | $BV_{EBO}$ | $I_E$ = 10μA, $I_C$ = 0 | 5 | | | V |
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB}$ = 40V, $I_E$ = 0 | | | 0.1 | μA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB}$ = 3V, $I_C$ = 0 | | | 0.1 | μA |
| DC Current Gain | $h_{FE}$ | $V_{CE}$ = 6V, $I_C$ = 1.0mA | 40 | | 700 | |
| Collector-Emitter Saturation Voltage | $V_{CE}$ (sat) | $I_C$ = 100mA, $I_B$ = 10mA | | 0.15 | 0.3 | V |
| Current-Gain-Bandwidth Product | $f_T$ | $V_{CE}$ = 6V, $I_C$ = 10mA | | 300 | | MHz |
| Output Capacitance | Cob | $V_{CB}$ = 6V, $I_E$ = 0 f = 1MHz | | 2.5 | | pF |
| Noise Figure | NF | $V_{CE}$ = 6V, $I_E$ = −0.5mA f = 1KHz, Rs = 500Ω | | 4.0 | | dB |

## $h_{FE}$ CLASSIFICATION

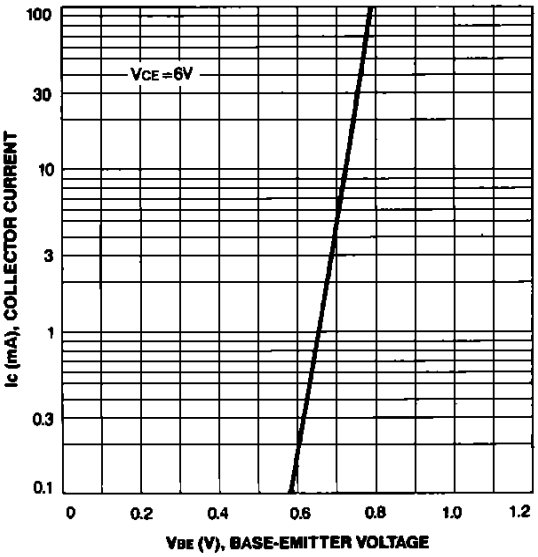
| Classification | R | O | Y | G | L |
|---|---|---|---|---|---|
| $h_{FE}$ | 40-80 | 70-140 | 120-240 | 200-400 | 350-700 |

ISO 14001 CERTIFIED
AN ISO 9002 COMPANY

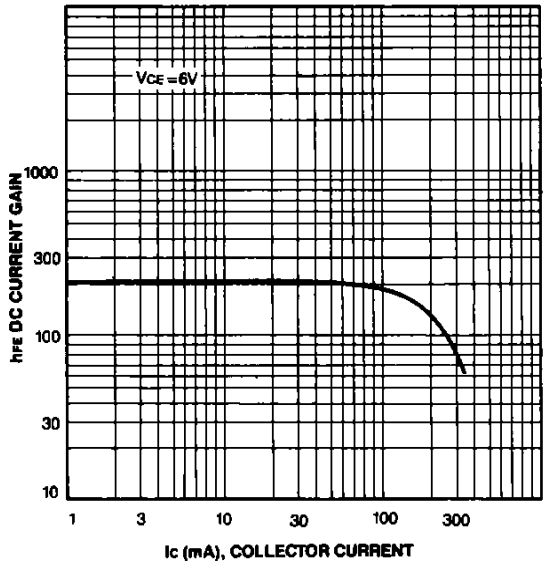
## STATIC CHARACTERISTIC



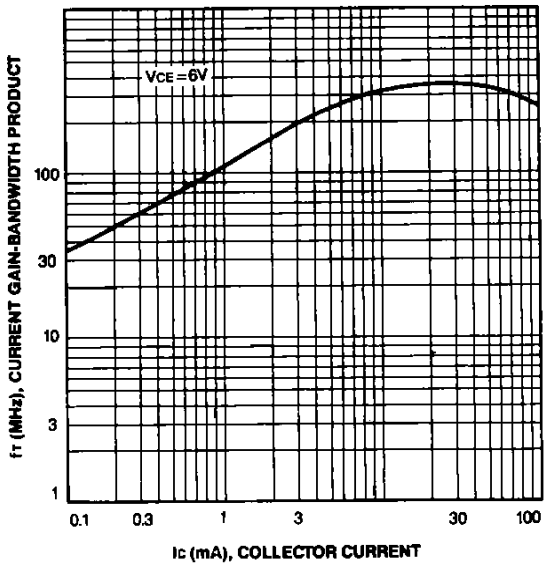

## TRANSFER CHARACTERISTIC



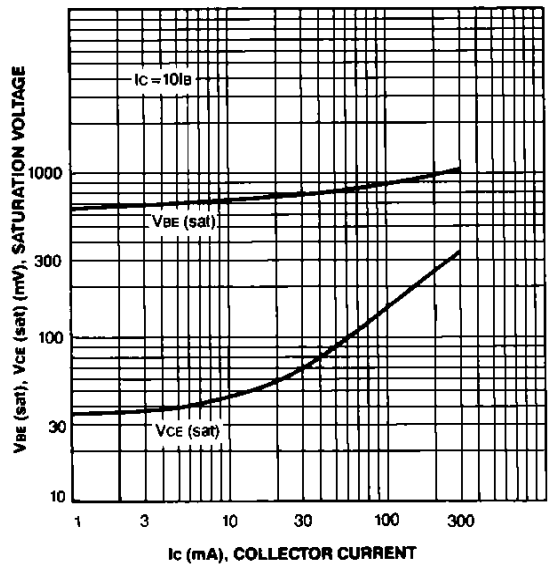

## DC CURRENT GAIN




## CURRENT GAIN BANDWIDTH PRODUCT




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




## OUTPUT CAPACITANCE