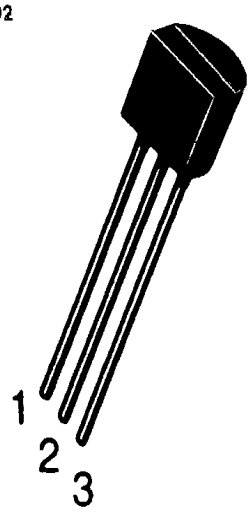
# Transistors
# 2SD5041

USHA (INDIA) LTD

## AF OUTPUT AMPLIFIER FOR ELECTRONIC FLASH UNIT

- Low Vce(sat)
- High Performance at Low Supply Voltage

TO-92




1. Emitter 2. Collector 3. Base

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

| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 40 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 20 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 7 | V |
| Collector Current | $I_C$ | 5 | A |
| Collector Dissipation | $P_C$ | 0.75 | W |
| Junction Temperature | Tj | 150 | °C |
| Storage Temperature | Tstg | −55~150 | °C |

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

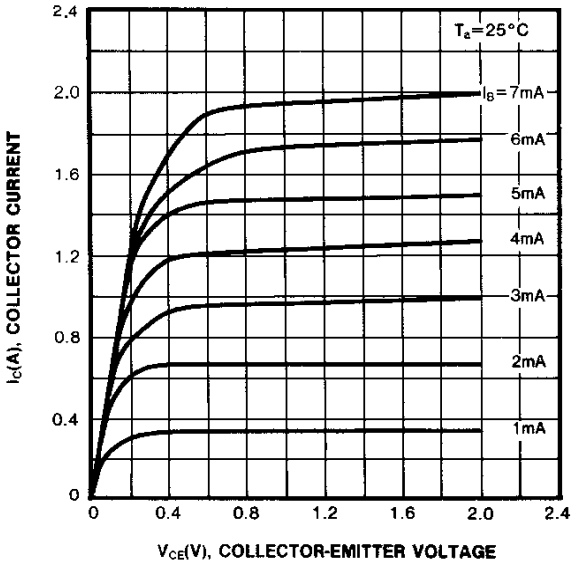
| Characteristic | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector Emitter Voltage | $BV_{CEO}$ | $I_C$=1mA, $I_B$=0 | 20 | | | V |
| Emitter Base Voltage | $BV_{EBO}$ | $I_C$=10μA, $I_C$=0 | 7 | | | V |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$=10V, $I_E$=0 | | | 0.1 | μA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$=7V, $I_C$=0 | | | 0.1 | μA |
| DC Current Gain | $h_{FE}1$ | $V_{CE}$=2V, $I_C$=0.5A | 180 | | 600 | |
| | $h_{FE}2$ | $V_{CE}$=2V, $I_C$=2A | 150 | | | |
| Collector Emitter Saturation Voltage | $V_{CE}$(sat) | $I_C$=3A, $I_B$=0.1A | | | 1 | V |
| Current Gain Bandwidth Product | $f_T$ | $V_{CE}$=6V, $I_C$=50mA | | 150 | | MHz |
| Output Capacitance | $C_{ob}$ | $V_{CB}$=20V, $I_E$=0, f=1MHz | | | 50 | pF |

## $h_{FE}1$ CLASSIFICATION

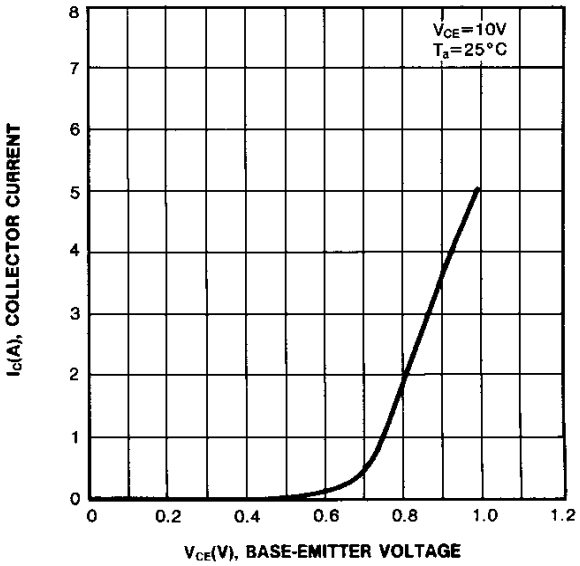
| Classification | P | Q | R |
|---|---|---|---|
| $h_{FE}1$ | 180-270 | 230-380 | 340-600 |

ISO 14001 CERTIFIED
AN ISO 9002 COMPANY

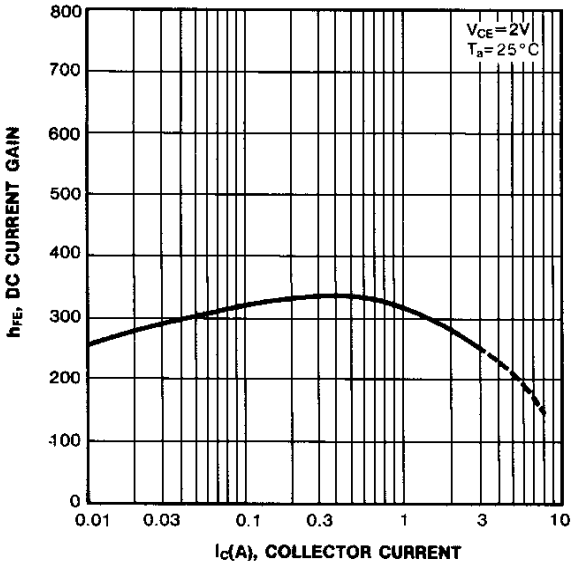
## STATIC CHARACTERISTIC



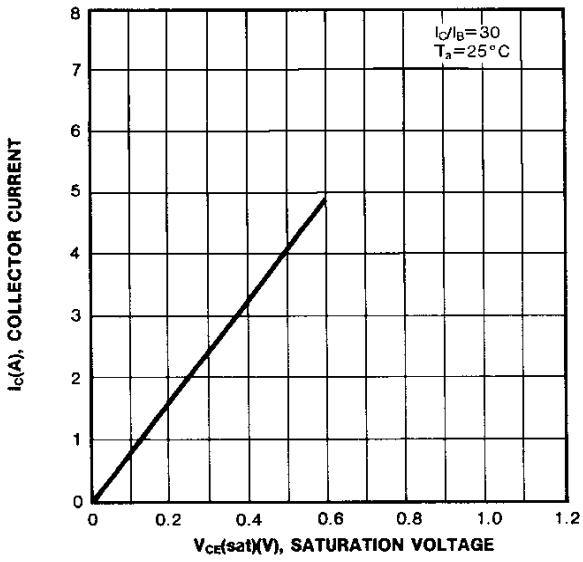

## BASE-EMITTER SATURATION VOLTAGE



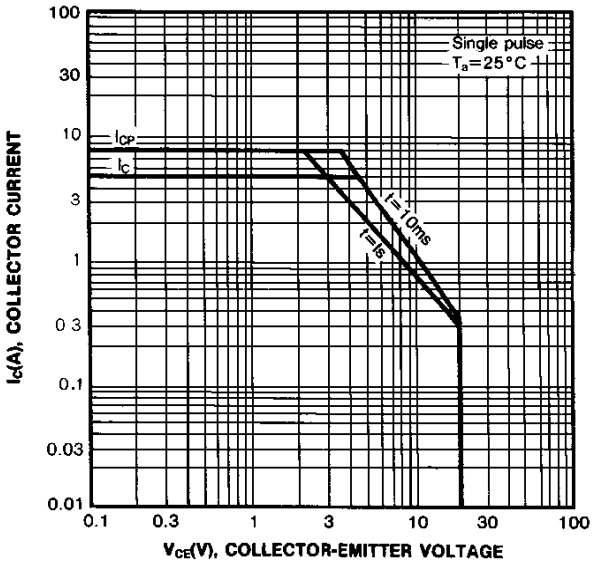

## DC CURRENT GAIN



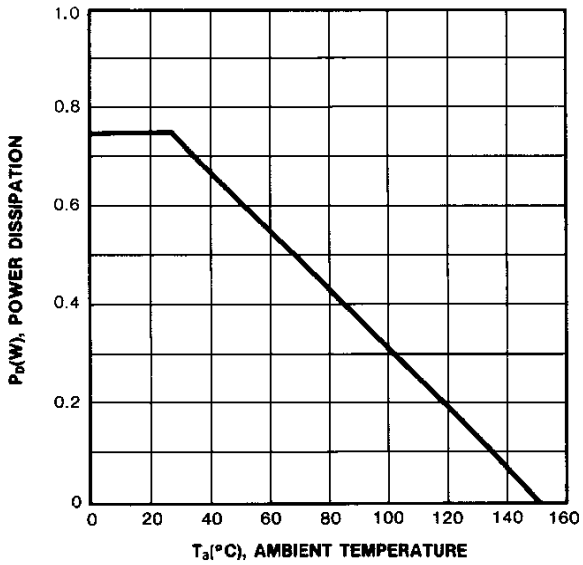

## COLLECTOR-EMITTER SATURATION VOLTAGE



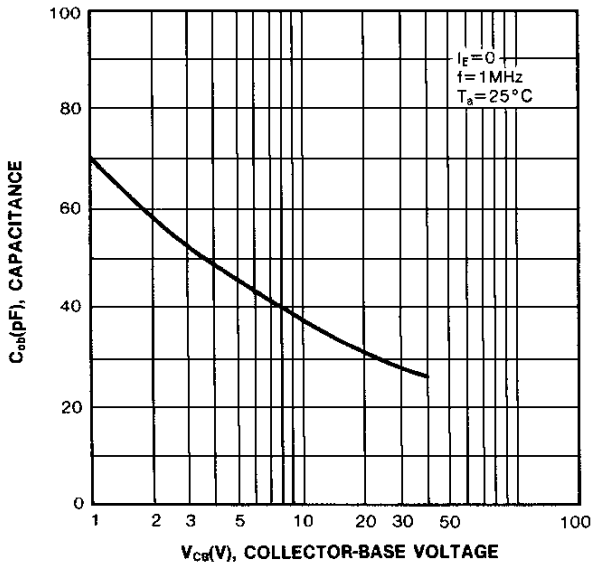

## SAFE OPERATING AREA




## POWER DERATING



**OUTPUT CAPACITANCE**




**CURRENT GAIN BANDWIDTH PRODUCT**