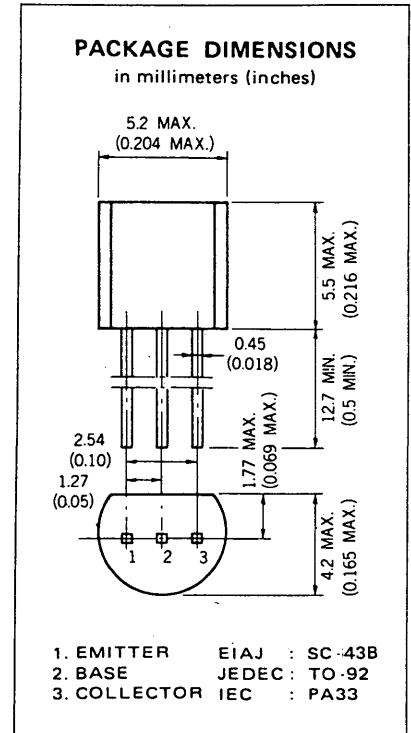


DESCRIPTION The 2SC2901 is designed for general purpose amplifier and high speed switching applications.

- FEATURES**
- High Frequency Current Gain.
 - High Speed Switching.
 - Small Output Capacitance.

ABSOLUTE MAXIMUM RATINGS

- Maximum Temperatures
- Storage Temperature -55 to +150 °C
 - Junction Temperature 150 °C Maximum
- Maximum Power Dissipation (Ta = 25 °C)
- Total Power Dissipation 600 mW
- Maximum Voltages and Currents (Ta = 25 °C)
- V_{CB0} Collector to Base Voltage 40 V
 - V_{CES} Collector to Emitter Voltage 40 V
 - V_{CEO} Collector to Emitter Voltage 15 V
 - V_{EBO} Emitter to Base Voltage 5.0 V
 - I_C Collector Current 200 mA
 - I_C Collector Current (10 μs pulse) 500 mA



ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

| SYMBOL | CHARACTERISTIC | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|------------------------|------------------------------|------|------|------|------|------------------------------------------------------------------------------------------------------|
| t _{on} | Turn-on Time | | 8.0 | 12 | ns | V _{CC} = 3.0 V, I _C = 10 mA, I _{B1} = 3.0 mA, V _{BE} = -1.5 V |
| t _{off} | Turn-off Time | | 12 | 18 | ns | V _{CC} = 3.0 V, I _C = 10 mA, I _{B1} = 3.0 mA, I _{B2} = -1.5 mA |
| t _{stg} | Storage Time | | 6.0 | 13 | ns | I _C = 10 mA, I _{B1} = -I _{B2} = 10 mA |
| f _T | Gain Bandwidth Product | 500 | 750 | | MHz | V _{CE} = 10 V, I _E = -10 mA, f = 100 MHz |
| C _{ob} | Output Capacitance | | 1.8 | 4.0 | pF | V _{CB} = 5.0 V, I _E = 0, f = 1 MHz |
| h _{FE} * | DC Current Gain | 40 | 90 | 200 | - | V _{CE} = 1.0 V, I _C = 10 mA |
| V _{CE(sat)} * | Collector Saturation Voltage | | 0.15 | 0.25 | V | I _C = 10 mA, I _B = 1.0 mA |
| V _{BE(sat)} * | Base Saturation Voltage | | 0.80 | 0.85 | V | I _C = 10 mA, I _B = 1.0 mA |
| I _{CBO} | Collector Cutoff Current | | | 0.1 | μA | V _{CB} = 20 V, I _E = 0 |
| I _{EBO} | Emitter Cutoff Current | | | 0.1 | μA | V _{EB} = 3.0 V, I _C = 0 |

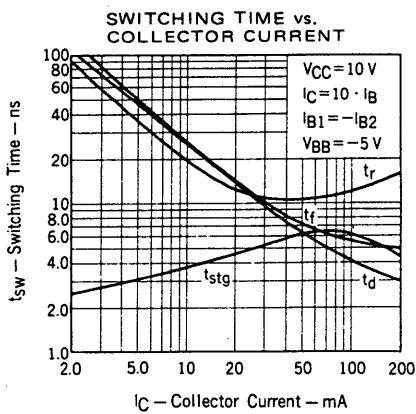
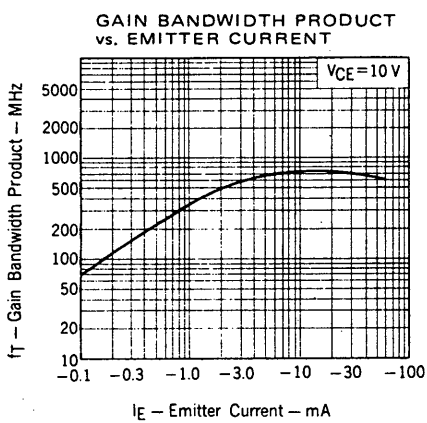
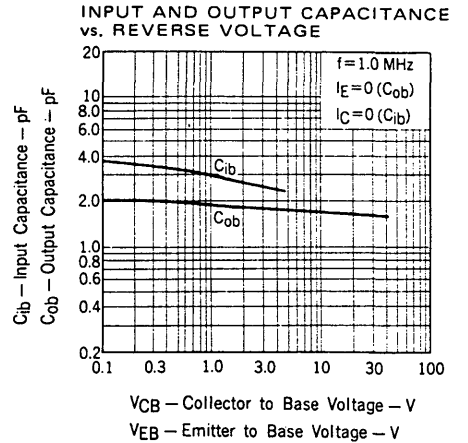
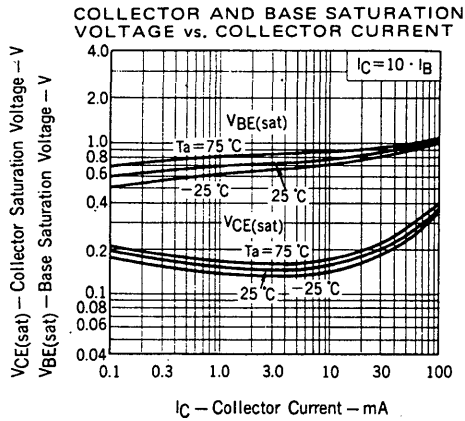
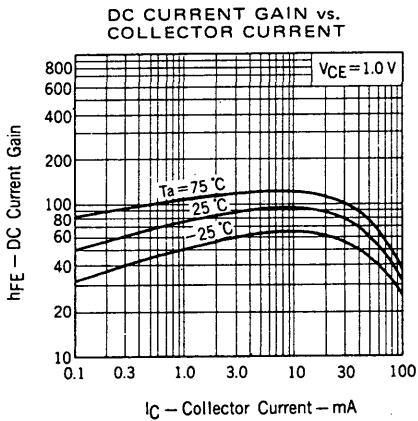
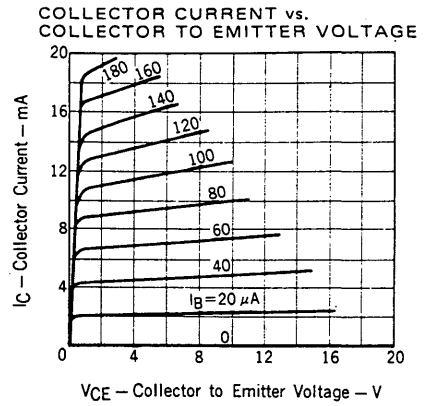
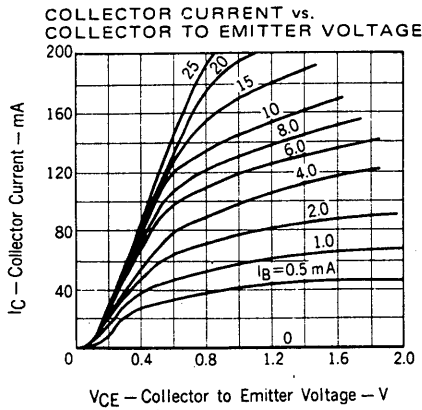
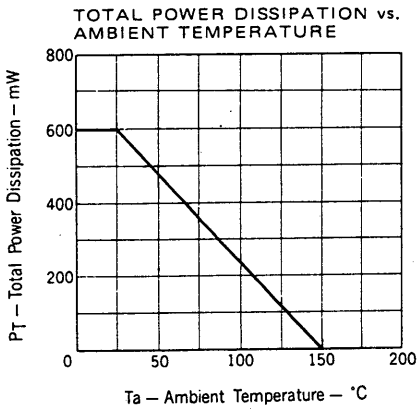
*Pulsed PW ≤ 350 μs, duty cycle ≤ 2%.

Classification of h_{FE}

| Rank | L | K |
|-------|----------|-----------|
| Range | 40 - 120 | 100 - 200 |

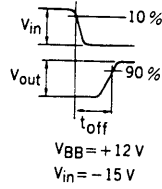
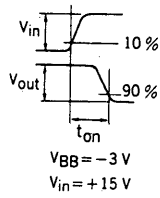
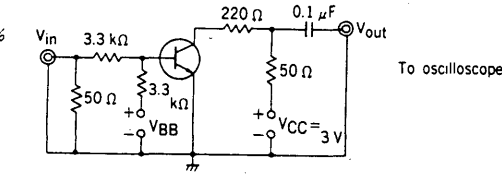
Test Conditions : V_{CE} = 1.0 V, I_C = 10 mA

TYPICAL CHARACTERISTICS (Ta=25 °C)



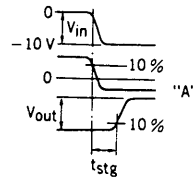
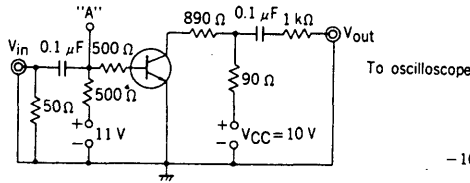
SWITCHING TIME TEST CIRCUIT

PW=300 ns
Duty cycle=2 %



t_{on} , t_{off} SWITCHING

PW=300 ns
Duty cycle=2 %



t_{stg} SWITCHING

Voltage waveforms