Ordering number: EN 923G

SANYO

No.923G

# 2SC3070

NPN Epitaxial Planar Silicon Transistor

## High $h_{FE}$, Low-Frequency General-Purpose Amp Applications

**Applications**

- Low-frequency, general-purpose amp., various drivers, muting circuit

**Features**

- High DC current gain ($h_{FE}$=800 to 3200)
- Large Current capacity ($I_C$=1.2A)
- Low collector-to-emitter saturation voltage ($V_{CE(sat)}$=0.5V max.)
- High $V_{EBO}$ ($V_{EBO} \geqq 15V$)

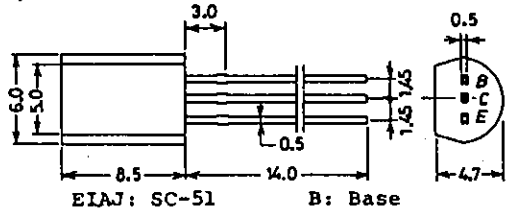
**Absolute Maximum Ratings/$T_a$=25°C**

| | | | unit |
|---|---|---|---|
| Collector to Base Voltage | $V_{CBO}$ | 30 | V |
| Collector to Emitter Voltage | $V_{CEO}$ | 25 | V |
| Emitter to Base Voltage | $V_{EBO}$ | 15 | V |
| Collector Current | $I_C$ | 1.2 | A |
| Collector Current(Pulse) | $I_{CP}$ | 2 | A |
| Base Current | $I_B$ | 240 | mA |
| Collector Dissipation | $P_C$ | 1 | W |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature | $T_{stg}$ | −55 to +150 | °C |

**Electrical Characteristics/$T_a$=25°C**

| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB}$=20V, $I_E$=0 | | | 0.1 | μA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB}$=10V, $I_C$=0 | | | 0.1 | μA |
| DC Current Gain | $h_{FE}(1)$ | $V_{CE}$=5V, $I_C$=500mA | 800 | 1500 | 3200 | |
| | $h_{FE}(2)$ | $V_{CE}$=5V, $I_C$=10mA | 600 | | | |
| Gain-bandwidth product | $f_T$ | $V_{CE}$=10V, $I_C$=50mA | | 220 | | MHz |
| Common Base Output Capacitance | $c_{ob}$ | $V_{CB}$=10V, f=1MHz | | 17 | | pF |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=500mA, $I_B$=10mA | | 0.12 | 0.5 | V |
| Base to Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C$=500mA, $I_B$=10mA | | 0.85 | 1.2 | V |
| Collector to Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$=10μA, $I_E$=0 | 30 | | | V |
| Collector to Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=1mA, $I_B$=0 | 25 | | | V |
| Emitter to Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=10μA, $I_C$=0 | 15 | | | V |

**Package Dimensions** 2006A
(unit: mm)




EIAJ: SC-51
SANYO: MP

B: Base
C: Collector
E: Emitter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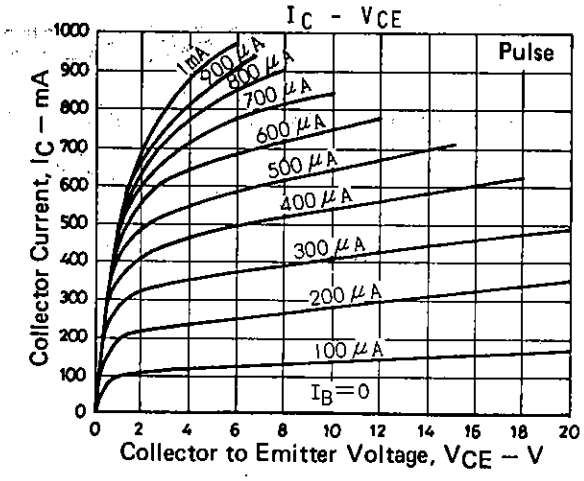
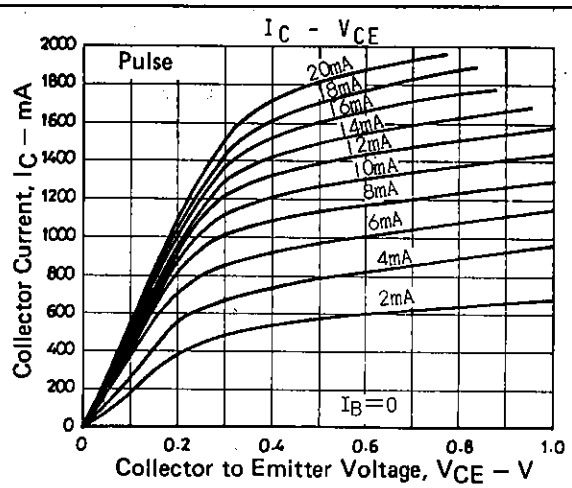
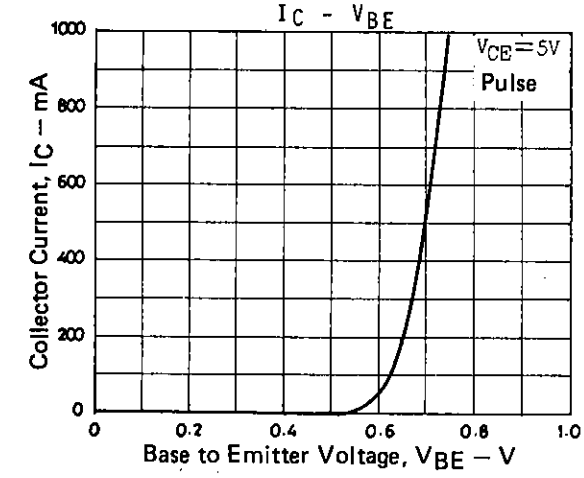
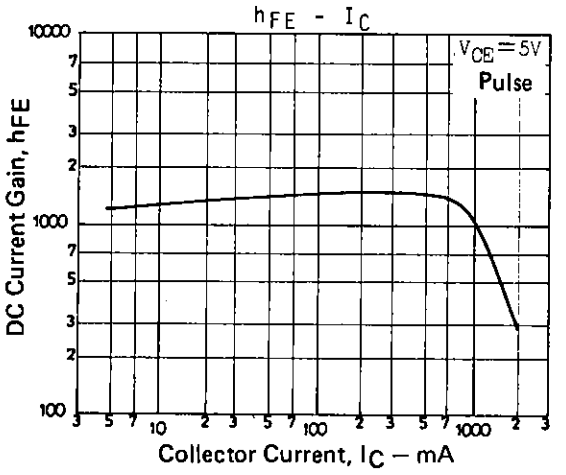
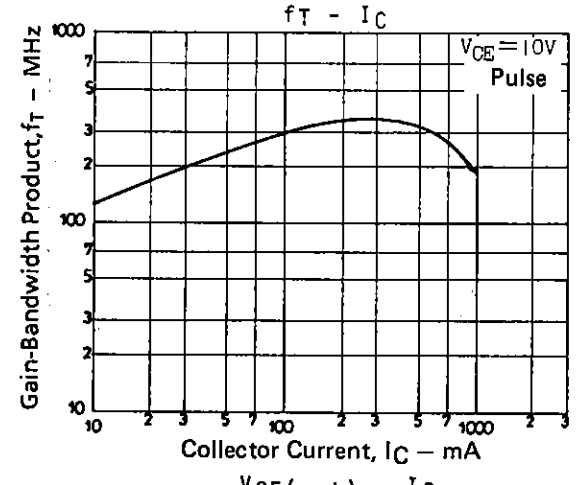
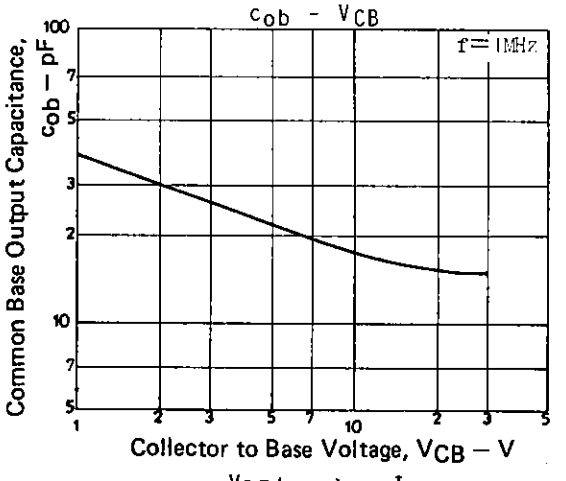

$I_C$ - $V_{CE}$
Pulse
1mA
900 μA
800 μA
700 μA
600 μA
500 μA
400 μA
300 μA
200 μA
100 μA
$I_B$=0
Collector Current, $I_C$ – mA
Collector to Emitter Voltage, $V_{CE}$ – V

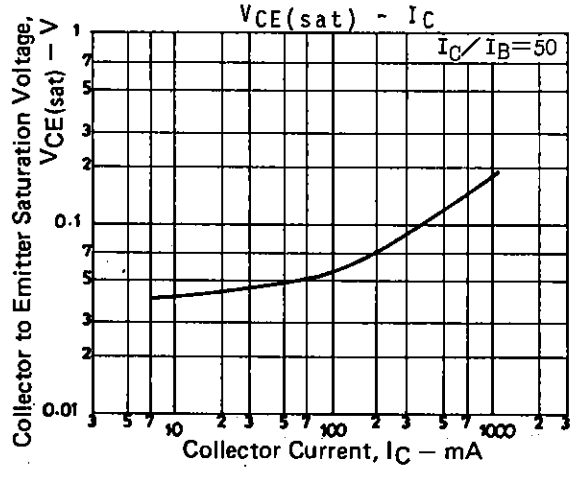

$I_C$ - $V_{CE}$
Pulse
20mA
18mA
16mA
14mA
12mA
10mA
8mA
6mA
4mA
2mA
$I_B$=0
Collector Current, $I_C$ – mA
Collector to Emitter Voltage, $V_{CE}$ – V

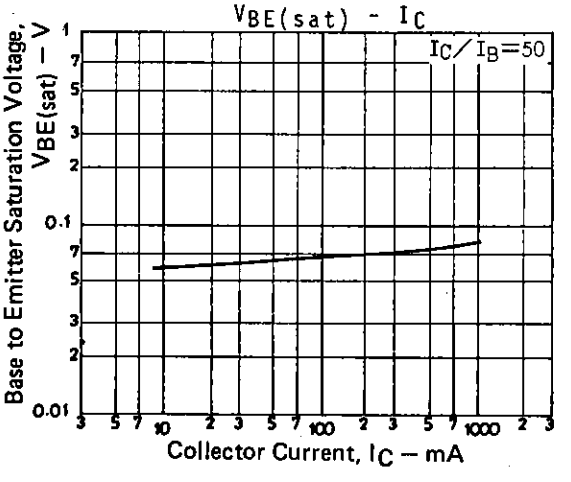

$I_C$ - $V_{BE}$
$V_{CE}$=5V
Pulse
Collector Current, $I_C$ – mA
Base to Emitter Voltage, $V_{BE}$ – V


$h_{FE}$ - $I_C$
$V_{CE}$=5V
Pulse
DC Current Gain, $h_{FE}$
Collector Current, $I_C$ – mA


$f_T$ - $I_C$
$V_{CE}$=10V
Pulse
Gain-Bandwidth Product, $f_T$ – MHz
Collector Current, $I_C$ – mA


$C_{ob}$ - $V_{CB}$
f=1MHz
Common Base Output Capacitance, $C_{ob}$ – pF
Collector to Base Voltage, $V_{CB}$ – V


$V_{CE(sat)}$ - $I_C$
$I_C/I_B$=50
Collector to Emitter Saturation Voltage, $V_{CE(sat)}$ – V
Collector Current, $I_C$ – mA


$V_{BE(sat)}$ - $I_C$
$I_C/I_B$=50
Base to Emitter Saturation Voltage, $V_{BE(sat)}$ – V
Collector Current, $I_C$ – mA