NEC

NPN SILICON TRANSISTOR
2SC3623

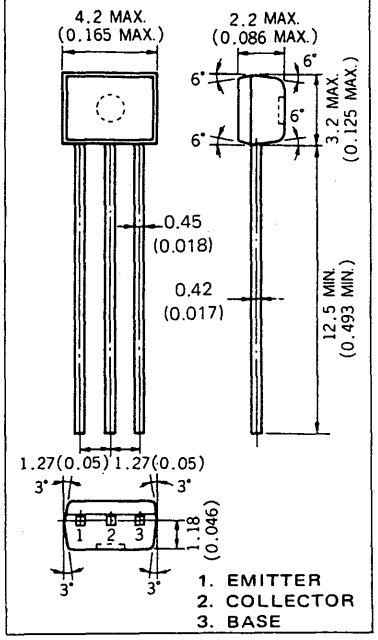
DESCRIPTION The 2SC3623 is designed for general-purpose applications requiring High DC Current Gain.

This is suitable for all kind of driving, instead of Darlington Transistor, or muting.

FEATURES

- High DC Current Gain.
  h_{FE} = 1000 to 3200 (@ V_{CE} = 5.0 V, I_C = 1.0 mA)
- Low Collector Saturation Voltage.
  $V_{CE(sat)}$ = 0.07 V TYP. (@ I_C = 50 mA, I_B = 5.0 mA)
- High V_{EBO} : V_{EBO} > 12 V

PACKAGE DIMENSIONS
in millimeters (inches)



ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

- Storage Temperature . . . . . −55 to +150 °C
- Junction Temperature . . . . . 150 °C Maximum

Maximum Power Dissipation (T_a = 25 °C)

- Total Power Dissipation . . . . . 250 mW

Maximum Voltages and Currents (T_a = 25 °C)

- V_{CBO} Collector to Base Voltage . . . . . 60 V
- V_{CEO} Collector to Emitter Voltage . . . . . 50 V
- V_{EBO} Emitter to Base Voltage . . . . . 12 V
- I_C Collector Current . . . . . 150 mA
- I_B Base Current. . . . . 10 mA

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}*	DC Current Gain	1000	1800	3200	–	V_{CE} = 5.0 V, I_C = 1.0 mA
h_{FE2}*	DC Current Gain	200	350		–	V_{CE} = 5.0 V, I_C = 100 mA
f_T	Gain Bandwidth Product		250		MHz	V_{CE} = 5.0 V, I_C = −10 mA
C_{ob}	Output Capacitance		3.0		pF	V_{CB} = 5.0 V, I_E = 0, f = 1.0 MHz
t_{on}	Turn-on Time		0.13		μs	V_{CC} = 10 V, $V_{BE(off)}$ = −2.7 V
t_f	Storage Time		0.72		μs	I_C = 50 mA
t_{off}	Turn-off Time		1.22		μs	I_{B1} = −I_{B2} = 1.0 mA
I_{CBO}	Collector Cutoff Current			100	nA	V_{CB} = 50 V, I_E = 0
I_{EBO}	Emitter Cutoff Current			100	nA	V_{EB} = 10 V, I_C = 0
V_{BE}*	Base to Emitter Voltage		560		mV	V_{CE} = 5.0 V, I_C = 1.0 mA
$V_{CE(sat)}$*	Collector Saturation Voltage		0.07	0.30	V	I_C = 50 mA, I_B = 5.0 mA
$V_{BE(sat)}$*	Base Saturation Voltage		0.8	1.2	V	I_C = 50 mA, I_B = 5.0 mA

*Marked items are Pulse Test : PW 350 μs
Duty Cycle ≦ 2 %

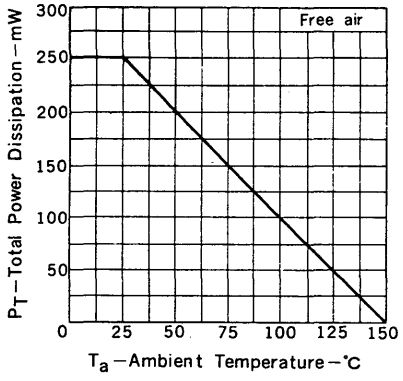
Classification of h_{FE1}

Rank	L	K
Range	1000 to 2000	1600 to 3200

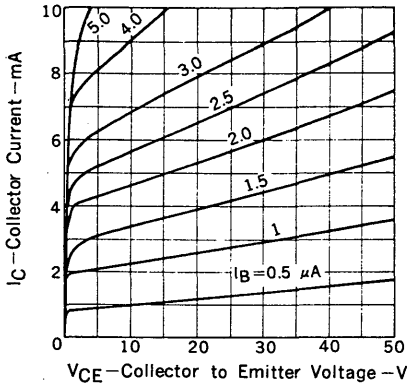
Test Conditions: V_{CE} = 5.0 V, I_C = 1.0 mA

TYPICAL CHARACTERISTICS (T_a = 25 °C)

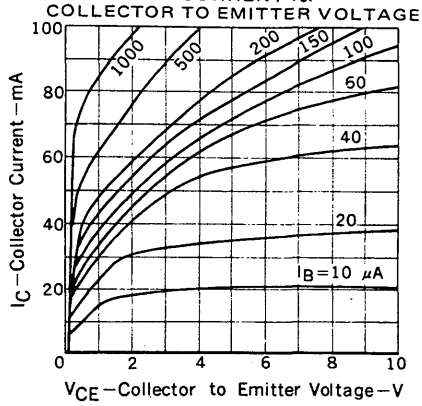
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



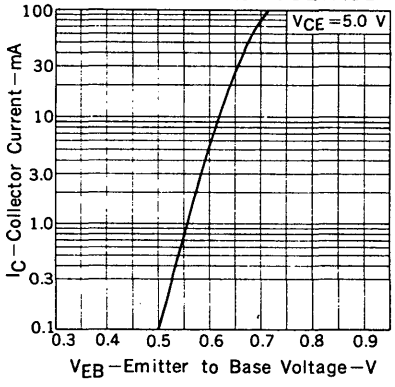
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



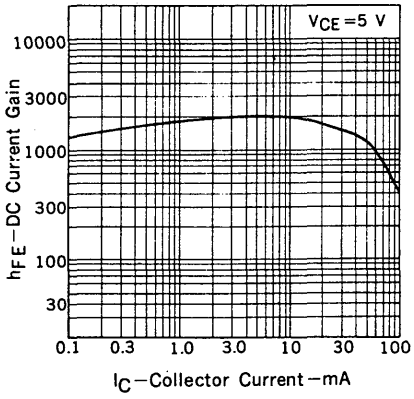
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



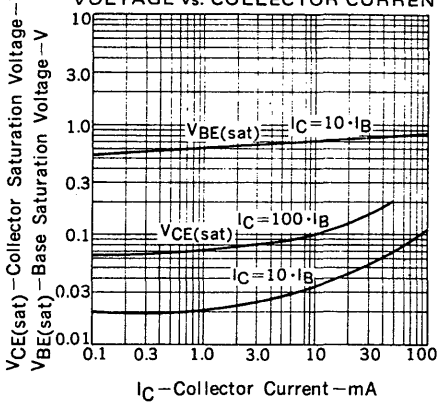
COLLECTOR CURRENT vs. EMITTER TO BASE VOLTAGE



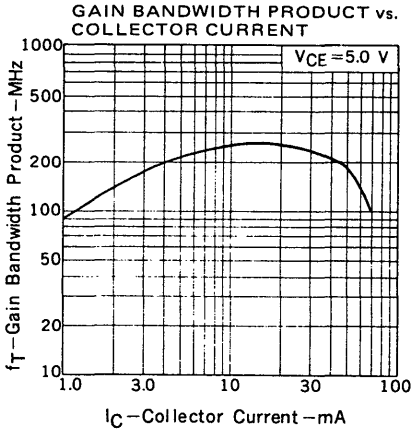
DC CURRENT GAIN vs. COLLECTOR CURRENT



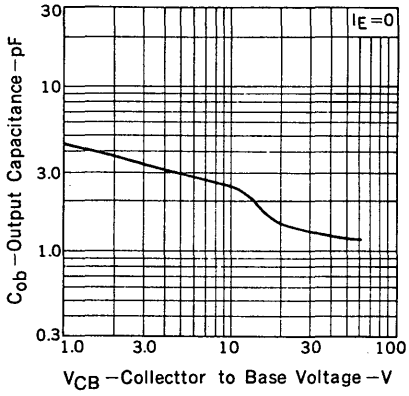
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



SWITCHING TIME vs. COLLECTOR CURRENT

