DATA SHEET

NEC
ELECTRON DEVICE

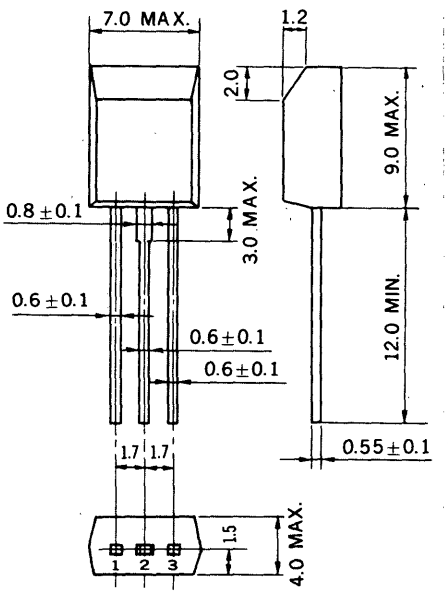
PNP SILICON TRANSISTOR
2SA1627

DESCRIPTION The 2SA1627 is designed for general purpose amplifier and high speed switching applications.

FEATURES

- High Voltage.
- High Speed Switching.
- Low Collector Saturation Voltage.

PACKAGE DIMENSIONS
in millimeters (inches)



1. Emitter
2. Collector
3. Base

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 . . . . . 1.0 W

Maximum Voltages and Currents (T_a = 25 °C)

V_{CBO}	Collector to Base Voltage	−600	V
V_{CEO}	Collector to Emitter Voltage	−600	V
V_{EBO}	Emitter to Base Voltage	−7.0	V
I_C	Collector Current (DC)	−1.0	A
I_C	Collector Current (pulse)*	−2.0	A

* PW ≦ 10 ms, Duty Cycle ≦ 50 %

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}**	DC Current Gain	30	58	120	–	V_{CE} = −5.0 V, I_C = −0.1 A
h_{FE2}**	DC Current Gain	5	19		–	V_{CE} = −5.0 V, I_C = −0.5 A
f_T	Gain Bandwidth Product	10	28		MHz	V_{CE} = −10 V, I_E = 0.1 A
C_{ob}	Output Capacitance		42	50	pF	V_{CB} = −10 V, I_E = 0, f = 1.0 MHz
I_{CBO}	Collector Cutoff Current			−10	μA	V_{CB} = −600 V, I_E = 0
I_{EBO}	Emitter Cutoff Current			−10	μA	V_{EB} = −7.0 V, I_C = 0
$V_{CE(sat)}$**	Collector Saturation Voltage		−0.28	−0.5	V	I_C = −0.3 A, I_B = −0.06 A
$V_{BE(sat)}$**	Base Saturation Voltage		−0.85	−1.2	V	I_C = −0.3 A, I_B = −0.06 A
t_{on}	Turn On Time		0.1	0.5	μs	I_C = −0.5 A, R_L = 500 Ω
t_{stg}	Storage Time		3.5	5.0	μs	I_{B1} = −I_{B2} = −0.1 A
t_f	Fall Time		0.08	0.5	μs	V_{CC} = −250 V

** Pulsed PW ≦ 350 μs, Duty Cycle ≦ 2 %

Classification of h_{FE1}

Rank	M	L	K
Range	30 to 60	40 to 80	60 to 120

Test Conditions: V_{CB} = −5.0 V, I_C = −0.1 A

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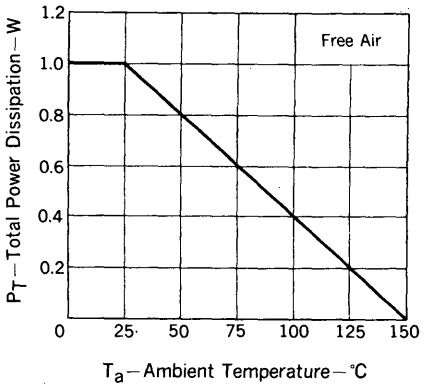
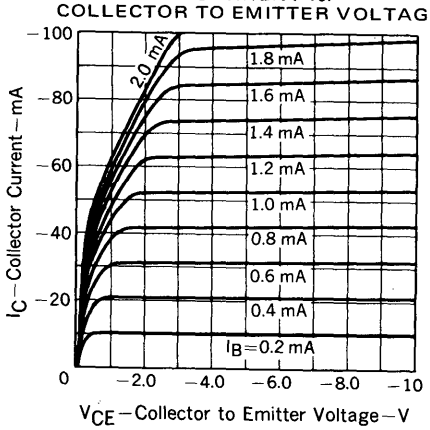
TYPICAL CHARACTERISTICS (T_a = 25 °C)

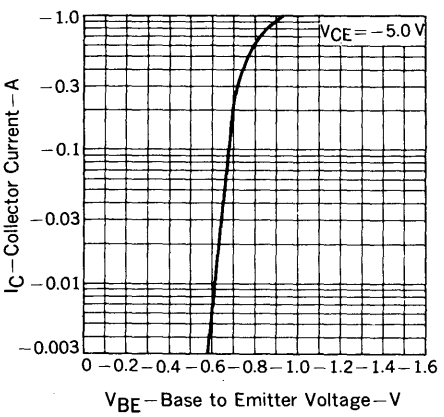
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



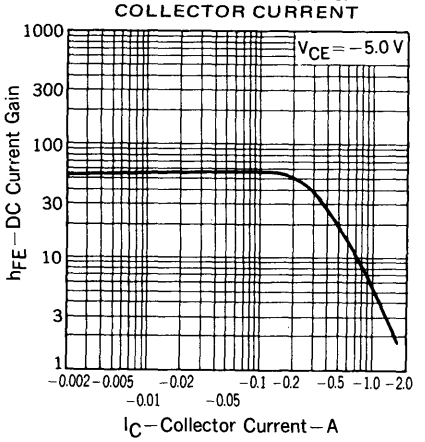
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



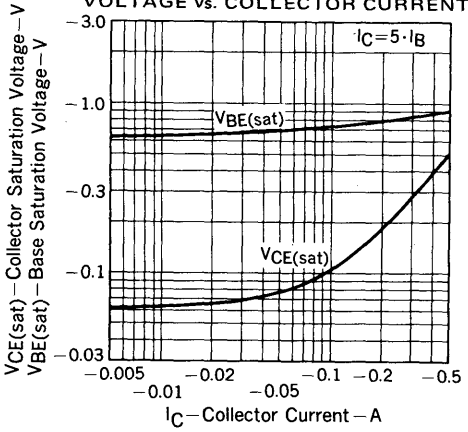
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



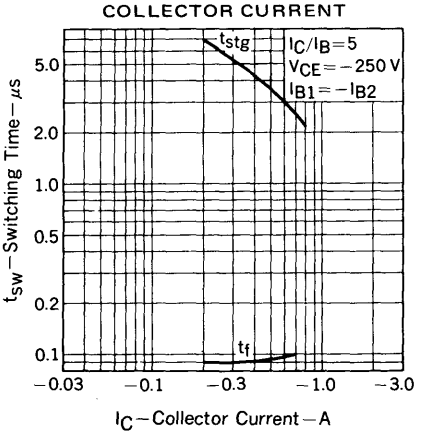
DC CURRENT GAIN vs. COLLECTOR CURRENT



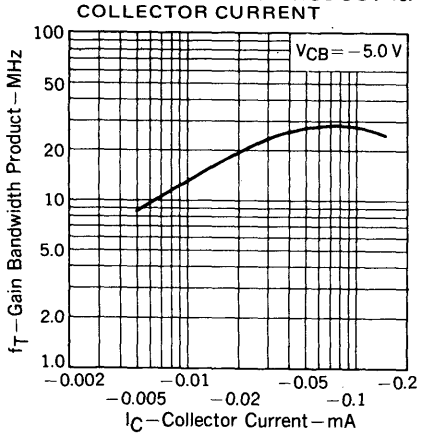
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



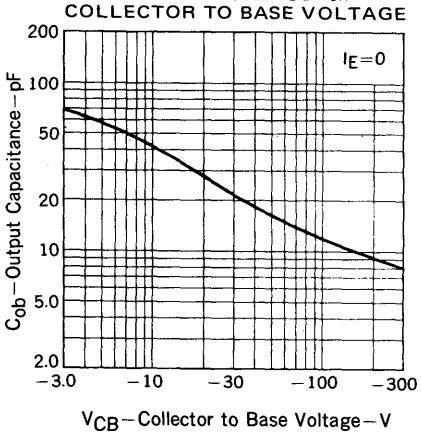
TURN OFF TIME vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



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