

# 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.

### ABSOLUTE MAXIMUM RATINGS

#### Maximum Temperatures

Storage Temperature . . . . . -55 to +150 °C

Junction Temperature . . . . . 150 °C Maximum

#### Maximum Power Dissipation ( $T_a = 25\text{ °C}$ )

Total Power Dissipation . . . . . 1.0 W

#### Maximum Voltages and Currents ( $T_a = 25\text{ °C}$ )

$V_{CBO}$  Collector to Base Voltage . . . . . -600 V

$V_{CEO}$  Collector to Emitter Voltage . . . . . -600 V

$V_{EBO}$  Emitter to Base Voltage . . . . . -7.0 V

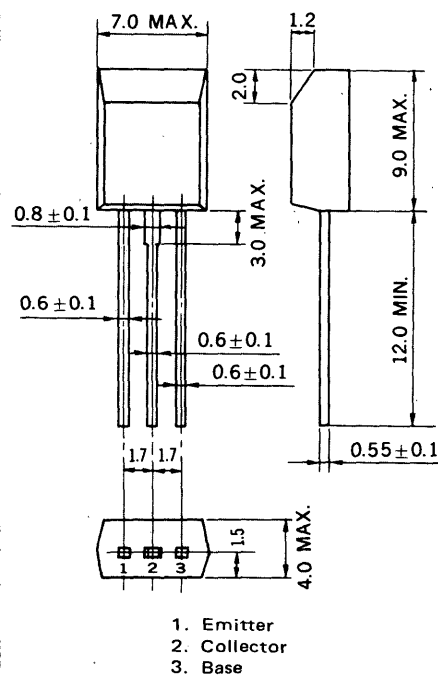
$I_C$  Collector Current (DC) . . . . . -1.0 A

$I_C$  Collector Current (pulse)\* . . . . . -2.0 A

\*  $PW \leq 10\text{ ms}$ , Duty Cycle  $\leq 50\%$

### PACKAGE DIMENSIONS

in millimeters (inches)



### ELECTRICAL CHARACTERISTICS ( $T_a = 25\text{ °C}$ )

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

\*\* Pulsed  $PW \leq 350\ \mu\text{s}$ , Duty Cycle  $\leq 2\%$

#### Classification of $h_{FE1}$

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

Test Conditions:  $V_{CB} = -5.0\text{ V}$ ,  $I_C = -0.1\text{ A}$

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )