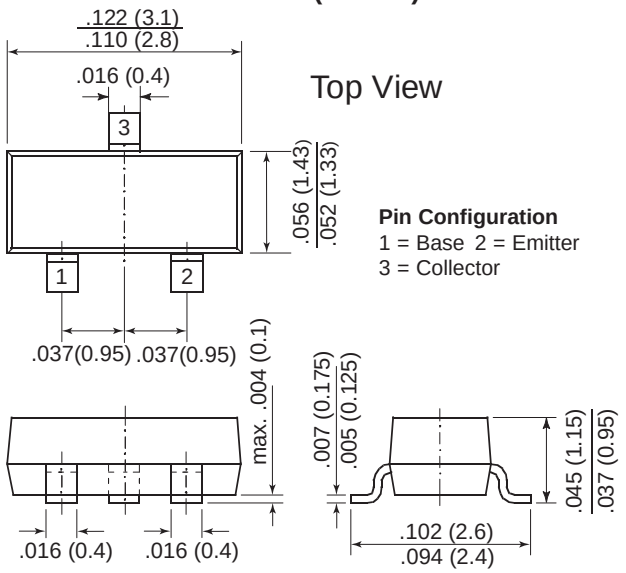
New Product

Vishay Semiconductors
formerly General Semiconductor

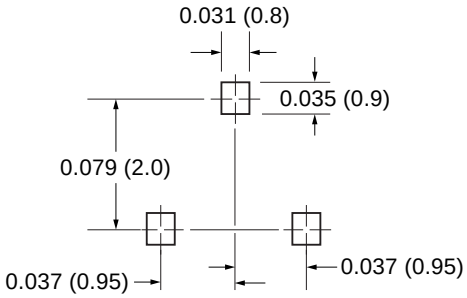
Small Signal Transistor (PNP)

TO-236AB (SOT-23)



Pin Configuration
1 = Base 2 = Emitter
3 = Collector

Mounting Pad Layout



Dimensions in inches and (millimeters)

Features

- PNP Silicon Epitaxial Planar Transistors
- Suited for low level, general purpose applications.
- Low current, low voltage.
- As complementary types, BCW71 and BCW72 NPN transistors are recommended.

Mechanical Data

Case: SOT-23 Plastic Package
Weight: approx. 0.008g
Marking Code: BCW69 = H1
BCW70 = H2
Packaging Codes/Options:
E8/10K per 13” reel (8mm tape), 30K/box
E9/3K per 7” reel (8mm tape), 30K/box

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$-V_{CBO}$	50	V
Collector-Emitter Voltage	$-V_{CEO}$	45	V
Emitter-Base Voltage	$-V_{EBO}$	5.0	V
Collector Current	$-I_C$	100	mA
Peak Collector Current	$-I_{CM}$	200	mA
Peak Base Current	$-I_{BM}$	200	mA
Power Dissipation	P_{tot}	250	mW
Thermal Resistance Junction to Ambient Air	$R_{\Theta JA}$	500(1)	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{STG}	–65 to +150	°C

Note: (1) Mounted on FR-4 printed-circuit board.

Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter		Symbol	Test Condition	Min	Typ	Max	Unit
DC Current Gain	BCW69	h_{FE}	$-V_{CE}$ = 5 V, $-I_C$ = 10 μA	—	90	—	—
	BCW70			—	150	—	
	BCW69		$-V_{CE}$ = 5 V, $-I_C$ = 2 mA	120	—	260	
	BCW70			215	—	500	
Collector-Emitter Saturation Voltage		$-V_{CEsat}$	$-I_C$ = 10 mA, $-I_B$ = 0.5 mA	—	80	300	mV
			$-I_C$ = 50 mA, $-I_B$ = 2.5 mA	—	150	—	
Base-Emitter Saturation Voltage		$-V_{BEsat}$	$-I_C$ = 10 mA, $-I_B$ = 0.5 mA	—	720	—	mV
			$-I_C$ = 50 mA, $-I_B$ = 2.5 mA	—	810	—	
Base-Emitter Voltage		$-V_{BE}$	$-V_{CE}$ = 5 V, $-I_C$ = 2 mA	600	—	750	mV
Collector Cut-off Current		$-I_{CBO}$	$-V_{CB}$ = 20 V, V_{EB} = 0	—	—	100	nA
			$-V_{CB}$ = 20 V, V_{EB} = 0, T_A = 100°C	—	—	10	μA
Gain-Bandwidth Product		f_T	$-V_{CE}$ = 5 V, $-I_C$ = 10 mA f = 100 MHz	100	—	—	MHz
Collector-Base Capacitance		C_{CBO}	$-V_{CB}$ = 10 V, f = 1 MHz, I_E = 0	—	4.5	—	pF
Noise Figure		F	$-V_{CE}$ = 5 V, $-I_C$ = 200 μA, R_S = 2 kΩ, f = 100 kHz, B = 200 Hz	—	2	6	dB