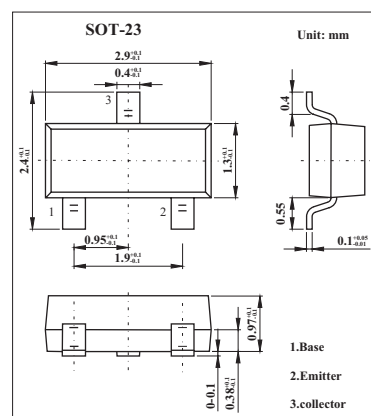


NPN General Purpose Transistors

BCW60A/B/C/D

■ Features

- NPN epitaxial silicon transistor.

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	32	V
Collector-emitter voltage	V_{CE0}	32	V
Emitter-base voltage	V_{EB0}	5	V
Collector current	I_C	100	mA
Collector power dissipation	P_c	350	mW
Storage temperature	T_{stg}	150	$^\circ\text{C}$

BCW60A/B/C/D■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter		Symbol	Testconditions	Min	Typ	Max	Unit
Collector-emitter breakdown voltage		BV_{CEO}	$I_C=2\text{mA}$, $I_B=0$	32			
Emitter-base breakdown voltage		BV_{EBO}	$I_E=1\mu\text{A}$, $I_C=0$	5			
Collector cut-off current		I_{CES}	$V_{CE}=32\text{V}$, $V_{BE}=0$			20	nA
Emitter cutoff current		I_{EBO}	$I_C = 0$; $V_{EB} = 4\text{V}$			20	nA
DC Current Gain	BCW60B	h_{FE}	$V_{CE}=5\text{V}$, $I_C=10\mu\text{A}$	20			
	BCW60C			40			
	BCW60D			100			
	BCW60A			120		220	
	BCW60B		$V_{CE}=5\text{V}$, $I_C=2\text{mA}$	180		310	
	BCW60C			250		460	
	BCW60D			380		630	
	BCW60A			60			
	BCW60B		$V_{CE}=1\text{V}$, $I_C=50\text{mA}$	70			
	BCW60C			90			
	BCW60D			10			
	BCW60A						
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 50\text{mA}$; $I_B = 1.25\text{mA}$			0.55	V
			$I_C = 10\text{mA}$; $I_B = 0.25\text{mA}$			0.35	V
Base to emitter saturation voltage		$V_{BE(sat)}$	$I_C = 50\text{mA}$; $I_B = 1.25\text{mA}$	0.7		1.05	V
			$I_C = 10\text{mA}$; $I_B = 0.25\text{mA}$	0.6		0.85	V
Base to emitter voltage		$V_{BE(on)}$	$I_C = 2\text{mA}$; $V_{CE} = 5\text{V}$	0.55		0.75	V
Collector capacitance		C_{ob}	$I_E = i_e = 0$; $V_{CB} = 10\text{V}$; $f = 1\text{MHz}$			4.5	pF
Transition frequency		f_T	$I_C = 10\text{mA}$; $V_{CE} = 5\text{V}$; $f = 100\text{MHz}$	125			MHz
Noise figure		NF	$I_C = 0.2\text{mA}$; $V_{CE} = 5\text{V}$; $R_G = 2\text{k}\Omega$; $f = 1\text{kHz}$			6	dB
Turn On Time		t_{on}	$I_C=10\text{mA}$, $I_{B1}=1\text{mA}$			150	ns
Turn Off Time		t_{off}	$V_{BB}=3.6\text{V}$, $I_{B2}=1\text{mA}$ $R_1=R_2=5\text{K}\Omega$, $R_L=990\Omega$			800	ns

■ Marking

TYPE	BCW60A	BCW60B	BCW60C	BCW60D
Marking	AA	AB	AC	AD