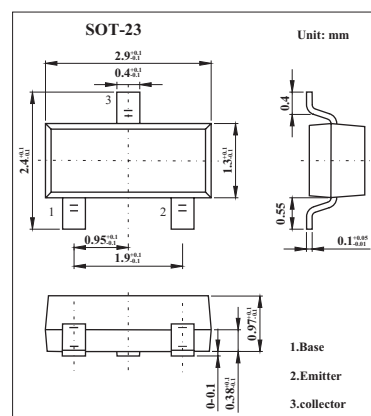


NPN General Purpose Transistors

BCW60A/B/C/D

■ Features

- NPN epitaxial silicon transistor.



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	V _{CB0}	32	V
Collector-emitter voltage	V _{CEO}	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	°C

BCW60A/B/C/D

■ Electrical Characteristics Ta = 25°C

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

■ Marking

TYPE	BCW60A	BCW60B	BCW60C	BCW60D
Marking	AA	AB	AC	AD