

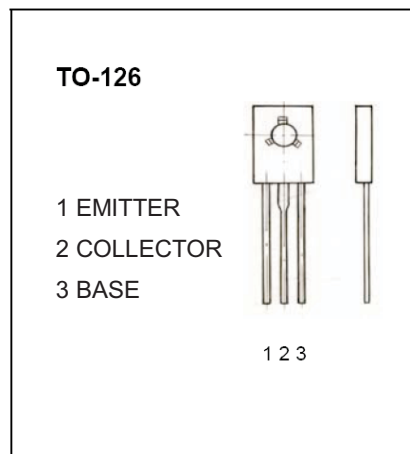
PNP Epitaxial Silicon Transistor

BD438

■ Features

- Medium Power Linear and Switching

Applications



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

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	-45	V
Collector-Emitter Voltage	V_{CES}	-45	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current (DC)	I_C	-4	A
Collector Current (Pulse) *	I_{CP}	-7	A
Base Current	I_B	-1	A
Collector Dissipation ($T_C=25^\circ\text{C}$)	P_C	25	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$

* Pulse Test: $PW=300\ \mu\text{s}$, duty Cycle=1.5% Pulsed

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = -100\text{mA}$, $I_B = 0$	-45			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -45\text{V}$, $I_E = 0$			-100	μA
Collector Cut-off Current	I_{CES}	$V_{CE} = -45\text{V}$			-100	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5\text{V}$, $I_C = 0$			-1	mA
DC Current Gain *	h_{FE}	$V_{CE} = -5\text{V}$, $I_C = -10\text{mA}$	30	130		
		$V_{CE} = -1\text{V}$, $I_C = -500\text{mA}$	85	140		
		$V_{CE} = -1\text{V}$, $I_C = -2\text{A}$	40			
Collector-Emitter Saturation Voltage *	$V_{CE(sat)}$	$I_C = -2\text{A}$, $I_B = -0.2\text{A}$		-0.2	-0.6	V
Base-Emitter ON Voltage *	$V_{BE(on)}$	$V_{CE} = -5\text{V}$, $I_C = -10\text{mA}$		-0.58		V
		$V_{CE} = -1\text{V}$, $I_C = -2\text{A}$			-1.2	V
Current Gain Bandwidth Product	f_T	$V_{CE} = -1\text{V}$, $I_C = -250\text{mA}$	3			MHz

* Pulse Test: $PW=300\ \mu\text{s}$, duty Cycle=1.5% Pulsed