

2SB1653

Silicon PNP triple diffusion planar type

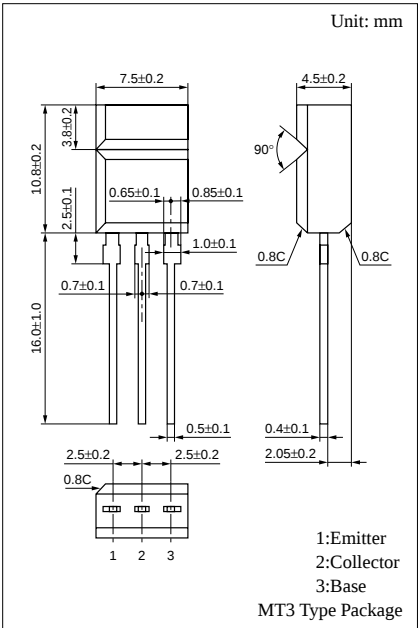
For power switching

Features

- High collector to emitter V_{CEO}
- Low collector to emitter saturation voltage $V_{CE(sat)}$
- Allowing automatic insertion with radial taping

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	-400	V
Collector to emitter voltage	V_{CEO}	-400	V
Emitter to base voltage	V_{EBO}	-7	V
Peak collector current	I_{CP}	-1	A
Collector current	I_C	-0.5	A
Collector power dissipation	P_C	1.5	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



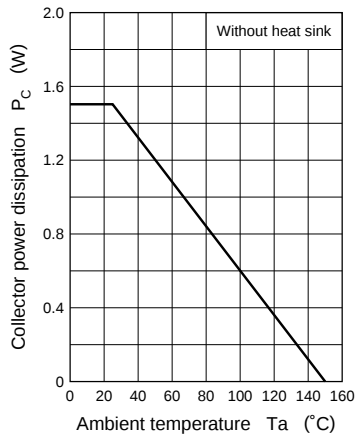
Electrical Characteristics ($T_C=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -400\text{V}, I_E = 0$			-1	μA
	I_{CEO}	$V_{CE} = -100\text{V}, I_B = 0$			-1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-1	mA
Collector to emitter voltage	V_{CEO}	$I_C = -1\text{mA}, I_B = 0$	-400			V
Forward current transfer ratio	h_{FE1}^*	$V_{CE} = -5\text{V}, I_C = -50\text{mA}$	80		280	
	h_{FE2}	$V_{CE} = -5\text{V}, I_C = -300\text{mA}$	10			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100\text{mA}, I_B = -10\text{mA}$		-0.25	-0.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$V_{CE} = -100\text{mA}, I_B = -10\text{mA}$		-0.8	-1.2	V
Transition frequency	f_T	$V_{CB} = -10\text{V}, I_E = 0.2\text{A}, f = 1\text{MHz}$		20		MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		25	50	pF
Turn-on time	t_{on}	$I_C = -100\text{mA},$		1.0		μs
Storage time	t_{stg}	$I_{B1} = -10\text{mA}, I_{B2} = 10\text{mA},$		0.8		μs
Fall time	t_f	$V_{CC} = -150\text{V}, R_L = 1.5\text{k}\Omega$		1.0		μs

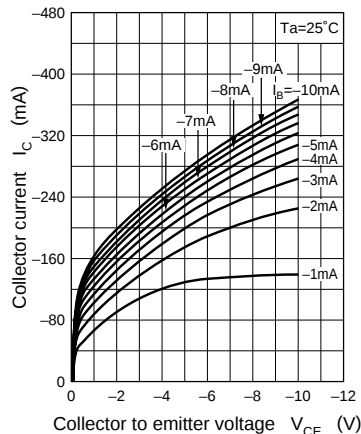
* h_{FE1} Rank classification

Rank	P	Q
h_{FE1}	80 to 160	130 to 280

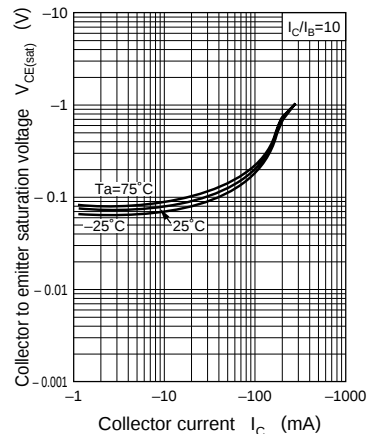
$P_C - T_a$



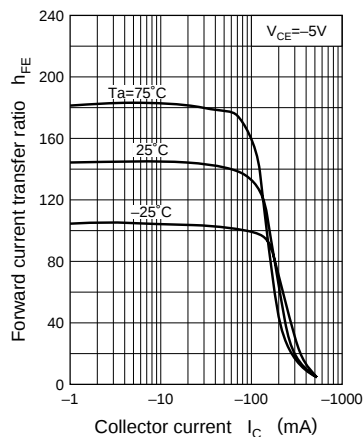
$I_C - V_{CE}$



$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$C_{ob} - V_{CB}$

