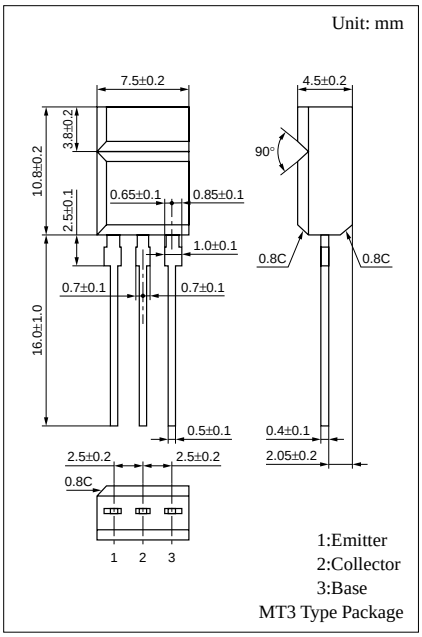
2SB1653

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˚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	˚C
Storage temperature	T_{stg}	–55 to +150	˚C

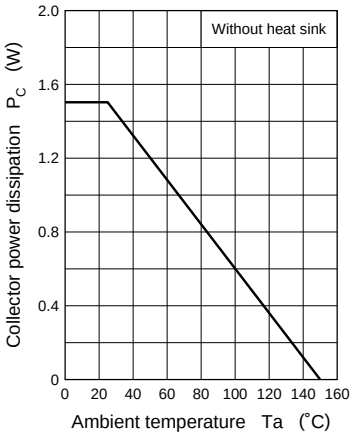
Electrical Characteristics (T_C=25˚C)

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

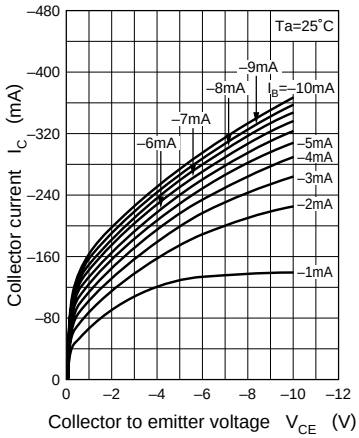
*h_{FE1} Rank classification

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

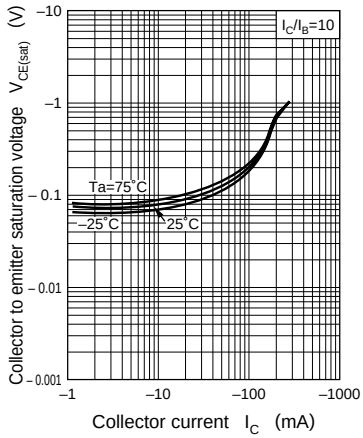
P_C — Ta



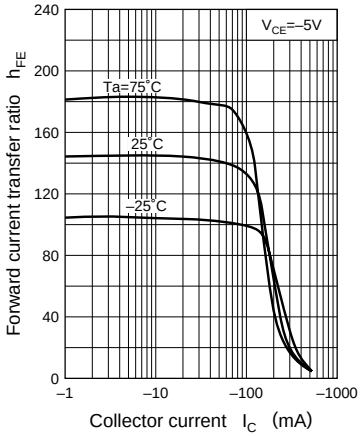
I_C — V_{CE}



$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}