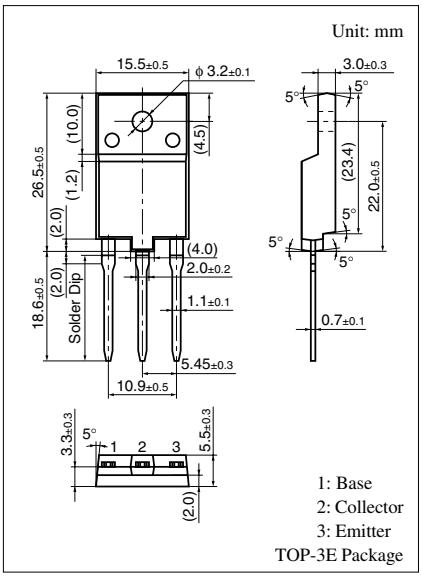
2SB1645

Silicon PNP triple diffusion planar type Darlington

For power amplification



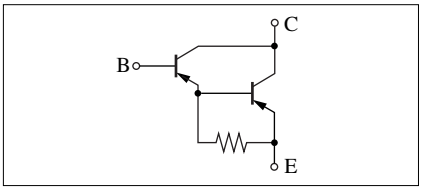
■ Features

- Satisfactory forward current transfer ratio h_{FE} characteristics
- Wide area of safe operation (ASO)
- Optimum for the output stage of a HiFi audio amplifier

■ Absolute Maximum Ratings $T_C = 25°C$

Parameter		Symbol	Rating	Unit
Collector to base voltage		V_{CBO}	−160	V
Collector to emitter voltage		V_{CEO}	−160	V
Emitter to base voltage		V_{EBO}	−5	V
Peak collector current		I_{CP}	−15	A
Collector current		I_C	−8	A
Collector power dissipation	$T_C = 25°C$	P_C	100	W
	$T_a = 25°C$		3	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

Internal Connection



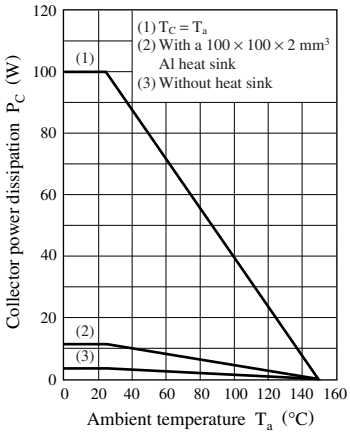
■ Electrical Characteristics $T_C = 25°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -160$ V, $I_E = 0$			−100	μA
	I_{CEO}	$V_{CB} = -160$ V, $I_E = 0$			−100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -5$ V, $I_C = 0$			−100	μA
Collector to emitter voltage	V_{CEO}	$I_C = -10$ mA, $I_B = 0$	−160			V
Forward current transfer ratio	h_{FE1}	$V_{CE} = -5$ V, $I_C = -1$ A	500			
	h_{FE2} *	$V_{CE} = -5$ V, $I_C = -7$ A	3 500		15 000	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -7$ A, $I_B = -7$ mA			−3	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = -7$ A, $I_B = -7$ mA			−3	V
Transition frequency	f_T	$V_{CE} = -10$ V, $I_C = -0.5$ A, f = 1 MHz		20		MHz
Turn-on time	t_{on}	$I_C = 7$ A, $I_{B1} = -7$ mA, $I_{B2} = 7$ mA		1.0		μs
Storage time	t_{stg}	$V_{CC} = -50$ V		1.5		μs
Fall time	t_f			1.2		μs

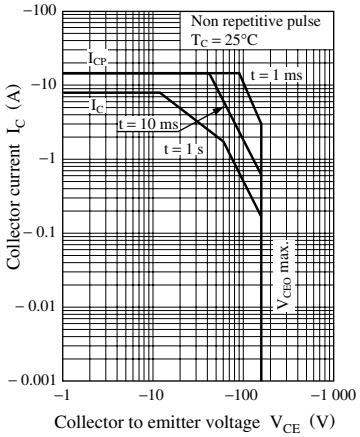
Note) ∗: Rank classification

Rank	P	Q
h_{FE2}	5 000 to 15 000	3 500 to 10 000

P_C — T_a



Area of safe operation (ASO)



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