

Power Transistor (−60V, −3A)

2SB1370

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = -0.3V$ at $I_C / I_E = -2A / -0.2A$.
- 2) Excellent DC current gain characteristics.
- 3) $P_C = 2W (T_a = 25^\circ C) / 30W (T_C = 25^\circ C)$
- 4) Wide SOA (safe operating area).

●Packaging specifications and hFE

Type	2SB1370
Package	TO-220FN
h _{FE}	EF
Code	—
Basic ordering unit (pieces)	500

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−60	V
Collector-emitter voltage	V_{CEO}	−60	V
Emitter-base voltage	V_{EB0}	−5	V
Collector current	I_C	−3	A (DC)
	I_{CP}	−6	A (Pulse) *
Collector power dissipation	P_C	2	W
		30	W (T _C = 25°C)
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55 ~ +150	°C

* Single pulse, P_w = 100ms●Electrical characteristics (T_a = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−60	—	—	V	$I_C = -50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	−60	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EB0}	−5	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	I_{CBO}	—	—	−10	μA	$V_{CB} = -60V$
Emitter cutoff current	I_{EB0}	—	—	−10	μA	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1.5	V	$I_C/I_E = -2A/-0.2A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5	V	$I_C/I_E = -2A/-0.2A$ *
DC current transfer ratio	h_{FE}	100	—	320	—	$V_{CE}/I_C = -5V/-0.5A$
Transition frequency	f_T	—	15	—	—	$V_{CE} = -5V, I_E = 0.5A, f = 5MHz$ *
Output capacitance	C_{ob}	—	80	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

* Measured using pulse current.

(94L-411-B303)

Power Transistor (−60V, −3A)

2SB1655/2SB1565

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = -0.3V$ at $I_C / I_E = -2A / -0.2A$.
- 2) Excellent DC current gain characteristics.
- 3) Wide SOA (safe operating area).

●Packaging specifications and hFE

Type	2SB1655	2SB1565
Package	TO-220FN	TO-220FN
h _{FE}	E	EF
Code	—	—
Basic ordering unit (pieces)	500	500

●Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−80	V
Collector-emitter voltage	V_{CEO}	−60	V
Emitter-base voltage	V_{EB0}	−7	V
Collector current	I_C	−3	A (DC)
	I_{CP}	−6	A (Pulse) *
Collector power dissipation	P_C	2	W
		25	W (T _C = 25°C)
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55 ~ +150	°C

* Single pulse, P_w = 100ms●Electrical characteristics (T_a = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−80	—	—	V	$I_C = -50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	−60	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EB0}	−7	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	I_{CBO}	—	—	−10	μA	$V_{CB} = -60V$
Emitter cutoff current	I_{EB0}	—	—	−10	μA	$V_{EB} = -7V$
Collector-emitter saturation voltage	2SB1655	$V_{CE(sat)}$	—	−1	V	$I_C/I_E = -2A/-0.2A$ *
	2SB1565					
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5	V	$I_C/I_E = -2A/-0.2A$ *
DC current transfer ratio	2SB1655	h_{FE}	100	200	—	$V_{CE}/I_C = -5V/-0.5A$
	2SB1565					
Transition frequency	f_T	—	15	—	MHz	$V_{CE} = -5V, I_E = 0.5A, f = 5MHz$ *
Output capacitance	C_{ob}	—	50	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

* Measured using pulse current.

(94L-456-B349)