Power Transistor (−60V, −3A)

2SB1370

●Features

1) Low saturation voltage, typically $V_{CE(sat)}$ = −0.3V at I_C / I_B = −2A / −0.2A.
2) Excellent DC current gain characteristics.
3) P_C = 2W (Ta=25°C) / 30W (Tc=25°C)
4) Wide SOA (safe operating area).

●Packaging specifications and hFE

Type	2SB1370
Package	TO-220Fa
h_{FE}	FF
Code	
Basic ordering unit (pieces)	500

●Absolute maximum ratings (Ta=25°C)

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

* Single pulse, Pw=100ms

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Collector-base breakdown voltage	BV_{CBO}	−60	—	—	V	I_C = −50μA	
Collector-emitter breakdown voltage	BV_{CEO}	−60	—	—	V	I_C = −1mA	
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	I_E = −50μA	
Collector cutoff current	I_{CBO}			−10	μA	V_{CB} = −50V	
Emitter cutoff current	I_{EBO}		—	−10	μA	V_{EB} = −4V	
Collector-emitter saturation voltage	$V_{CE(sat)}$			−1.5	V	I_C/I_B = −2A / −0.2A	*
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5	V	I_C/I_B = −2A / −0.2A	*
DC current transfer ratio	h_{FE}	100	—	320	—	V_{CE}/I_C = −5V / −0.5A	
Transition frequency	f_T		10		MHz	V_{CE} = −5V, I_E = 0.5A, f = 10MHz	*
Output capacitance	Cob	—	50	—	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_B = −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 (Ta=25°C)

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

* Single pulse, Pw=100ms

●Electrical characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions	
Collector-base breakdown voltage		BV_{CBO}	−80	—	—	V	I_C = −50μA	
Collector-emitter breakdown voltage		BV_{CEO}	−80			V	I_C = −1mA	
Emitter-base breakdown voltage		BV_{EBO}	−7	—	—	V	I_E = −50μA	
Collector cutoff current		I_{CBO}			−10	μA	V_{CB} = −80V	
Emitter cutoff current		I_{EBO}	—	—	−10	μA	V_{EB} = −7V	
Collector-emitter saturation voltage	2SB1655	$V_{CE(sat)}$	—	—	−1	V	I_C/I_B = −2A / −0.2A	*
	2SB1565				−1.5	V		
Base-emitter saturation voltage		$V_{BE(sat)}$	—	—	−1.5	V	I_C/I_B = −2A / −0.2A	*
DC current transfer ratio	2SB1655	h_{FE}	100		200	—	V_{CE}/I_C = −5V / −0.5A	
	2SB1565		160	—	320			
Transition frequency		f_T	—	15	—	MHz	V_{CE} = −5V, I_E = 0.5A, f = 5MHz	*
Output capacitance		Cob		50		pF	V_{CB} = −10V, I_E = 0A, f = 1MHz	

* Measured using pulse current.

(94L-456-B349)