Power Transistor（−80V, −4A）

2SB1568

●**Features**

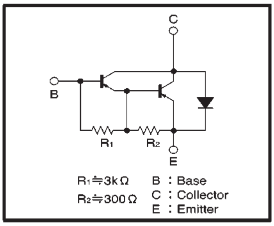
1）Darlington connection for a high h_{FE}.
2）Built-in resistor between base and emitter.
3）Built-in damper doide.
4）Complements the 2SD2399.

●**Absolute maximum ratings**（Ta=25℃）

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−80	V
Collector-emitter voltage	V_{CES}	−80	V
Emitter-base voltage	V_{EBO}	−7	V
Collector current	I_C	−4	A（DC）
	I_{CP}	−6	A（Pulse） ✻
Collector power dissipation	P_C	2	W
		30	W（Tc=25℃）
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55～+150	℃

✻ Single pulse, Pw=100ms

●**Circuit diagram**



●**Packaging specifications and h_{FE}**

Type	2SB1568
Package	TO-220FN
h_{FE}	1k～10k
Code	—
Basic ordering unit (pieces)	500

●**Electrical characteristics**（Ta=25℃）

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	
Collector cutoff current	I_{CBO}	—	—	−100	μA	V_{CB}=−80V	
Emitter cutoff current	I_{EBO}	—	—	−3	mA	V_{EB}=−5V	
DC current transfer ratio	h_{FE}	1000	5000	10000	—	V_{CE}=−3V , I_C=−2A	✻1
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	−1	−1.5	V	I_C/I_B=−2A/−4mA	✻1
Transition frequency	f_T	—	12	—	MHz	V_{CE}=−5V , I_E=0.5A , f=10MHz	✻1, 2
Output capacitance	Cob	—	35	—	pF	V_{CB}=−10V , I_E=0A , f=1MHz	

✻1 Measured using pulse current.　✻2 Transition frequency of the divice.

(96-670-B422)

Power Transistor（80V, 4A）

2SD2399

●**Features**

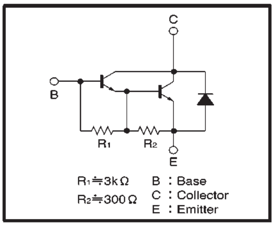
1）Darlington connection for a high h_{FE}.
2）Built-in resistor between base and emitter.
3）Built-in damper doide.
4）Complements the 2SB1568.

●**Absolute maximum ratings**（Ta=25℃）

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	80	V
Collector-emitter voltage	V_{CES}	80	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	4	A（DC）
	I_{CP}	6	A（Pulse） ✻
Collector power dissipation	P_C	2	W
		30	W（Tc=25℃）
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55～+150	℃

✻ Single pulse, Pw=100ms

●**Circuit diagram**



●**Packaging specifications and h_{FE}**

Type	2SD2399
Package	TO-220FN
h_{FE}	1k～10k
Code	—
Basic ordering unit (pieces)	500

●**Electrical characteristics**（Ta=25℃）

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	
Collector cutoff current	I_{CBO}	—	—	100	μA	V_{CB}=80V	
Emitter cutoff current	I_{EBO}	—	—	3	mA	V_{EB}=5V	
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	I_C/I_B=2A/4mA	✻1
DC current transfer ratio	h_{FE}	1000	—	10000	—	V_{CE}=3V , I_C=2A	✻1
Transition frequency	f_T	—	40	—	MHz	V_{CE}=5V , I_E=−0.2A , f=10MHz	✻1, 2
Output capacitance	Cob	—	35	—	pF	V_{CB}=10V , I_E=0A , f=1MHz	

✻1 Measured using pulse current.　✻2 Transition frequency of the divice.

(96-825-D422)