Power Transistor (−120V, −1.5A)

2SB1236 / 2SB1186

●**Features**

1) High breakdown voltage. (BV_{CEO}=−120V)
2) Low collector output capacitance. (Typ. 30pF at V_{CB}=−10V)
3) High transition frequency. (f_T=50MHz)
4) Complements the 2SD1857 / 2SD1763.

●**Absolute maximum ratings** (Ta=25℃)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	−120	V
Collector-emitter voltage		V_{CEO}	−120	V
Emitter-base voltage		V_{EBO}	−5	V
Collector current		I_C	−1.5	A (DC)
			−3	A (Pulse) ✻1
Collector power dissipation	2SB1236	P_C	1	W ✻2
	2SB1186		2	
			20	W (Tc=25℃)
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55~+150	℃

✻1 Single pulse Pw=100ms
✻2 Printed circuit board 1.7mm thick, collector plating 1cm² or larger.

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

Type	2SB1236	2SB1186
Package	ATV	TO-220FP
h_{FE}	QR	EF
Code	TV2	—
Basic ordering unit (pieces)	2500	500

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

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	−120	—	—	V	I_C=−50μA
Collector-emitter breakdown voltage		BV_{CEO}	−120	—	—	V	I_C=−1mA
Emitter-base breakdown voltage		BV_{EBO}	−5	—	—	V	I_E=−50μA
Collector cutoff current		I_{CBO}	—	—	−1	μA	V_{CB}=−100V
Emitter cutoff current		I_{EBO}	—	—	−1	μA	V_{EB}=−4V
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	—	−2	V	I_C/I_B=−1A/−0.1A ✻
Base-emitter saturation voltage		$V_{BE(sat)}$	—	—	−1.5	V	I_C/I_B=−1A/−0.1A ✻
DC current transfer ratio	2SB1236	h_{FE}	120	—	390	—	V_{CE}=−5V, I_C=−1A
	2SB1186		100	—	320		
Transition frequency		f_T	—	50	—	MHz	V_{CE}=−5V, I_E=0.1A, f=30MHz
Output capacitance		Cob	—	30	—	pF	V_{CB}=−10V, I_E=0A, f=1MHz

✻ Measured using pulse current.

(94L-268-A56)

Power Transistor (120V, 1.5A)

2SC4132 / 2SD1857 / 2SD2343 / 2SD1763

●**Features**

1) High breakdown voltage. (BV_{CEO}=120V)
2) Low collector output capacitance. (Typ. 20pF at V_{CB}=10V)
3) High transition frequency. (f_T=80MHz)
4) Complements the 2SB1236 / 2SB1186.

●**Absolute maximum ratings** (Ta=25℃)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	120	V
Collector-emitter voltage		V_{CEO}	120	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	2	A
		I_{CP}	3	A ✻1
Collector power dissipation	2SC4132	P_C	0.5	W ✻2
			2	
	2SD1857		1	
	2SD2343		1.5	
			5	W (Tc=25℃)
	2SD1763		20	
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55~+150	℃

✻1 Single pulse Pw=10ms
✻2 When mounted on a 40×40×0.7mm ceramic board.

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

Type	2SC4132	2SD1857	2SD2343	2SD1763
Package	MPT3	ATV	TO-126F	TO-220FP
h_{FE}	PQR	PQR	PQ	EF
Marking	CB✻	—	—	—
Code	T100	TV2	—	—
Basic ordering unit (pieces)	1000	2500	1000	500

✻ Denotes h_{FE}

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

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	120	—	—	V	I_C=50μA
Collector-emitter breakdown voltage		BV_{CEO}	120	—	—	V	I_C=1mA
Emitter-base breakdown voltage		BV_{EBO}	5	—	—	V	I_E=50μA
Collector cutoff current		I_{CBO}	—	—	1	μA	V_{CB}=100V
Emitter cutoff current		I_{EBO}	—	—	1	μA	V_{EB}=4V
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	—	0.4	V	I_C/I_B=1A/0.1A ✻
DC current transfer ratio	2SC4132,2SD1857	h_{FE}	82	—	390	—	V_{CE}/I_C=5V/0.1A
	2SD2343		82	—	270	—	
	2SD1763		100	—	320	—	
Transition frequency		f_T	—	80	—	MHz	V_{CE}=5V, I_E=−0.1A, f=30MHz ✻
Output capacitance		Cob	—	20	—	pF	V_{CB}=10V, I_E=0A, f=1MHz

✻ Measured using pulse current.

(96-175-C56)