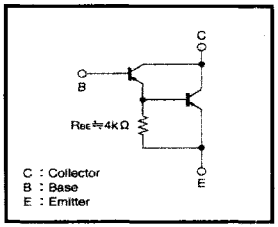
Power Transistor (−40V, −2A)

2SB1183 / 2SB1239 / 2SB786F

●Features

1) Darlington connection for high DC current gain.
2) Built-in 4 kΩ resistor between base and emitter.
3) Complements the 2SD1759/2SD1861/2SD947F.

●Circuit schematic



●Absolute maximum ratings (Ta=25℃)

Parameter		Symbol	Limits	Unit
Collector-base voltage		VCBO	−40	V
Collector-emitter voltage		VCER	−40	V
Emitter-base voltage		VEBO	−5	V
Collector current		IC	−2	A (DC)
			−3	A (Pulse) *1
Collector power dissipation	2SB1183	PC	1	W
			10	W (Tc=25℃)
	2SB1239		1	W *2
	2SB786F		1.2	W
			5	W (Tc=25℃)
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55~150	℃

*1 Sigle pulse Pw=10ms
*2 Printed circuit board 1.7mm thick, collector plating 1cm² or larger

●Packaging specifications and hFE

Type	2SB1183	2SB1239	2SB786F
Package	CPT3	ATV	TO-126FP
hFE	1k~200k	1k~	1k~
Code	TL	T146	–
Basic ordering unit (pieces)	2500	2500	1000

●Electrical characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BVCBO	−40	—	—	V	IC=−50 μA
Collector-emitter breakdown voltage		BVCER	−40	—	—	V	IC=−1mA, RBE=10kΩ
Emitter-base breakdown voltage		BVEBO	−5	—	—	V	IE=−50 μA
Collector cutoff current		ICBO	—	—	−1	μA	VCB=−24V
Emitter cutoff current		IEBO	—	—	−1	μA	VEB=−4V
Collector-emitter saturation voltage		VCE(sat)	—	—	−1.5	V	IC/IB=−0.6A/−1.2mA
DC current transfer ratio	2SB1183	hFE	1000	—	20000	—	VCE/IC=−2V/−0.5A
	2SB1239,2SB786F		1000	—	—	—	
Output capacitance		Cob	—	11	—	pF	VCB=−10V, IE=0A, f=1MHz

(96-126-B23)

Power Transistor (40V, 2A)

2SD1759 / 2SD1861 / 2SD947F

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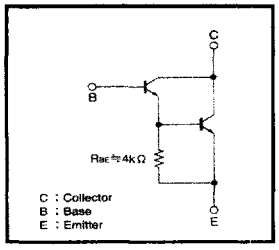
3) Complements the 2SB1183/2SB1239/2SB786F.

●Circuit schematic



●Absolute maximum ratings (Ta=25℃)

Parameter		Symbol	Limits	Unit
Collector-base voltage		VCBO	40	V
Collector-emitter voltage		VCER	40	V (RBE=10kΩ)
Emitter-base voltage		VEBO	5	V
Collector current		IC	2	A (DC)
			3	A (Pulse) *1
Collector power dissipation	2SD1861	PC	1	W *2
	2SD1759		1	
			10	W (Tc=25℃)
	2SD947F		1.2	W
			5	W (Tc=25℃)
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55~150	℃

*1 Sigle pulse Pw=10ms
*2 Printed circuit board 1.7mm thick, collector plating 1cm² or larger.

●Packaging specifications and hFE

Type	2SD1759	2SD1861	2SD947F
Package	CPT3	ATV	TO-126FP
hFE	1k~200k	1k~	1k~
Code	TL	TV2	–
Basic ordering unit (pieces)	2500	2500	1000

●Electrical characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BVCBO	40	—	—	V	IC=50 μA
Collector-emitter breakdown voltage		BVCEO	40	—	—	V	IC=1mA, RBE=10kΩ
Emitter-base breakdown voltage		BVEBO	5	—	—	V	IE=50 μA
Collector cutoff current		ICBO	—	—	1	μA	VCB=24V
Emitter cutoff current		IEBO	—	—	1	μA	VEB=4V
Collector-emitter saturation voltage		VCE(sat)	—	—	1.5	V	IC/IB=0.6mA/1.2mA
DC current transfer ratio	2SD1759	hFE	1000	—	20000	—	VCE/IC=3V/0.5A
	2SD1861,2SD947F		1000	—	—	—	
Output capacitance		Cob	—	11	—	pF	VCB=10V, IE=0A, f=1MHz

(94S-321-D23)