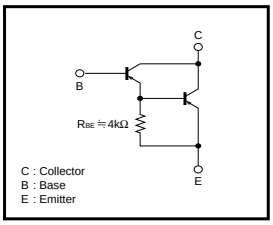
Power transistor (–40V, –2A)

2SB1183 / 2SB1239

●Features

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

●Equivalent circuit



●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit	
Collector-base voltage		V_{CBO}	–40	V	
Collector-emitter voltage		V_{CER}	–40	V	
Emitter-base voltage		V_{EBO}	–5	V	
Collector current		I_C	–2	A(DC)	
			–3	A(Pulse)	*1
Collector power dissipation	2SB1183	P_C	1	W	
			10	W(Tc=25°C)	
	2SB1239		1	W	*2
Junction temperature		Tj	150	°C	
Storage temperature		Tstg	–55 to +150	°C	

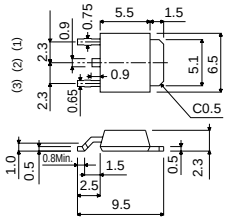
*1 Single pulse Pw=10ms
*2 Printed circuit board 1.7 mm thick, collector plating 100mm² or larger.

●Packaging specifications and h_{FE}

Type	2SB1183	2SB1239
Package	CPT3	ATV
h_{FE}	1k~200k	1k~
Code	TL	T146
Basic ordering unit (pieces)	2500	2500

●External dimensions (Unit : mm)

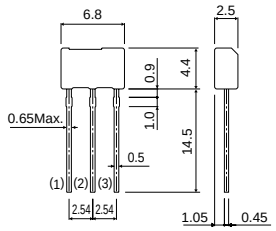
2SB1183



ROHM : CPT3
EIAJ : SC-63

(1) Base
(2) Collector
(3) Emitter

2SB1239



Taping specifications

ROHM : ATV

(1) Emitter
(2) Collector
(3) Base

●Electrical characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	–40	–	–	V	I_C=–50μA
Collector-emitter breakdown voltage		BV_{CER}	–40	–	–	V	I_C=–1mA, R_{BE}=10kΩ
Emitter-base breakdown voltage		BV_{EBO}	–5	–	–	V	I_E=–50μA
Collector cutoff current		I_{CBO}	–	–	–1	μA	V_{CB}=–24V
Emitter cutoff current		I_{EBO}	–	–	–1	μA	V_{EB}=–4V
Collector-emitter saturation voltage		$V_{CE(sat)}$	–	–0.8	–1.5	V	I_C/I_B=–0.6A/–1.2mA
DC current transfer ratio	2SB1183	h_{FE} *	1000	–	200000	–	V_{CE}/I_C=–3V/–0.5A
	2SB1239		1000	–	–	–	
Transition frequency		f_T	–	150	–	MHz	V_{CE}=–6V, I_E=0.1A, f=1MHz
Output capacitance		Cob	–	11	–	pF	V_{CB}=–10V, I_E=0A, f=1MHz

* Pulse test

●**Electrical characteristics curves**

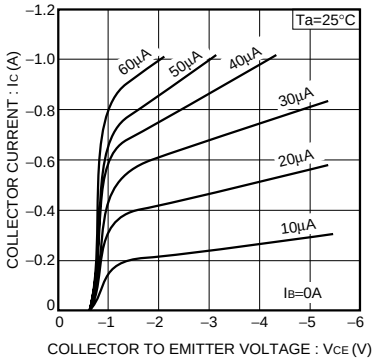


Fig.1 Ground emitter output characteristics

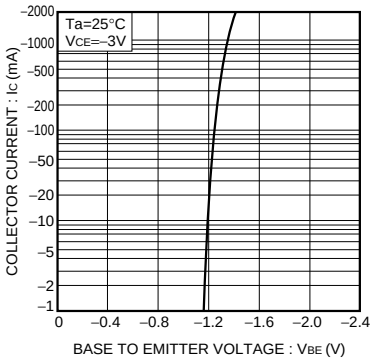


Fig.2 Ground emitter propagation characteristics

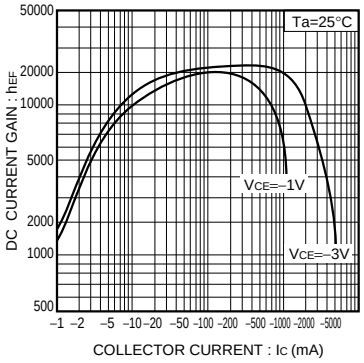


Fig.3 DC current gain vs. collector current

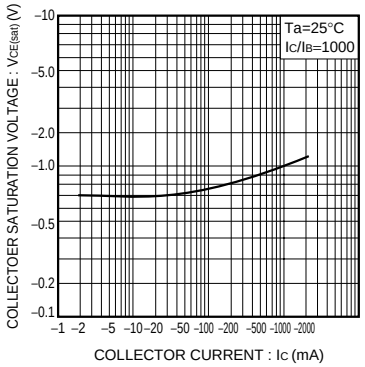


Fig.4 Collector-emitter saturation voltage vs. collector current

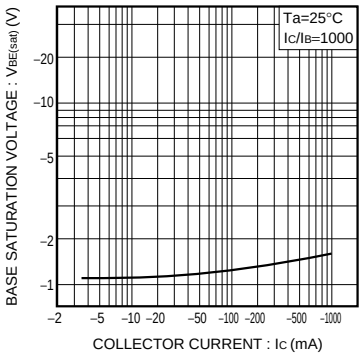


Fig.5 Base-emitter saturation voltage vs. collector current

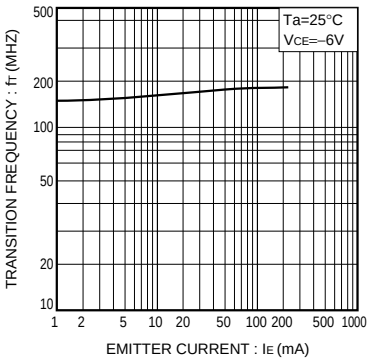


Fig.6 Gain bandwidth product vs. emitter current

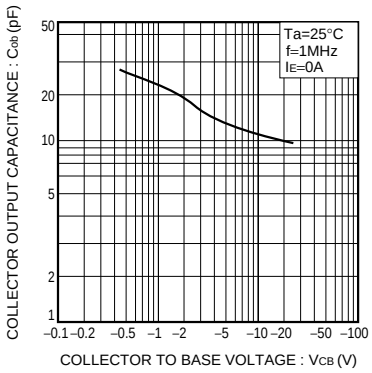


Fig.7 Collector output capacitance vs. collector-base voltage

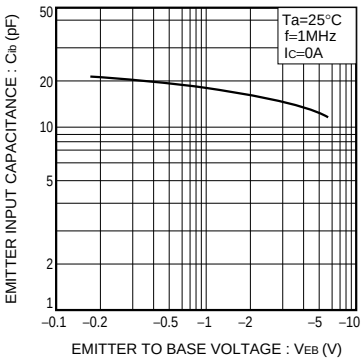


Fig.8 Eemitter input capacitance vs. emitter-base voltage

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