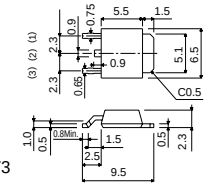
Power Transistor (–80V, –4A)

2SB1474

●Features

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

●External dimensions (Unit : mm)



ROHM : CPT3
EIAJ : SC-63

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

●Absolute maximum ratings (Ta=25°C)

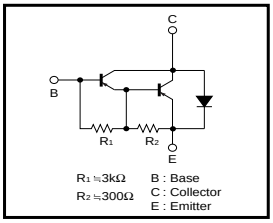
Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	–80	V
Collector-emitter voltage	V_{CEO}	–80	V
Emitter-base voltage	V_{EBO}	–7	V
Collector current	I_C	–4	A(DC)
		–6	A *
Collector power dissipation	P_C	1	W
		10	W (Tc=25˚C)
Junction temperature	Tj	150	˚C
Storage temperature	Tstg	–55 to +150	˚C

* Single pulse, Pw=100ms

●Packaging specifications and h_{FE}

Type	2SB1474
Package	CPT3
h_{FE}	1k~10k
Code	TL
Basic ordering unit (pieces)	2500

●Equivalent circuit



R_1 ≒3kΩ
R_2 ≒300Ω

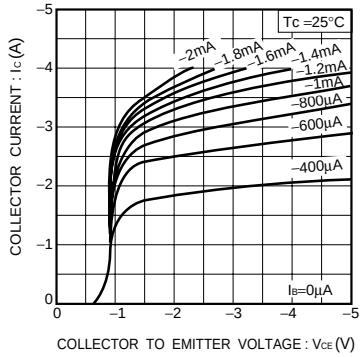
B : Base
C : Collector
E : Emitter

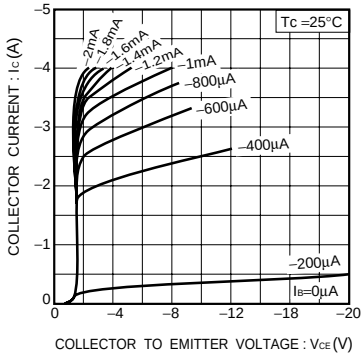
●Electrical characteristics (Ta=25°C)

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= –5mA
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	–1.5	V	I_C/I_B= –2A/–4mA *1
DC current transfer ratio	h_{FE}	1000	5000	10000	–	V_{CE}/I_C= –3V/–2A *1
Transition frequency	f_T	–	12	–	MHz	V_{CE}= –5V, I_E=0.5A, f=10MHz *2
Output capacitance	Cob	–	45	–	pF	V_{CB}= –10V, I_E=0A, f=1MHz

*1 Measured using pulse current. *2 Transition frequency of the device.

●Electrical characteristics curves





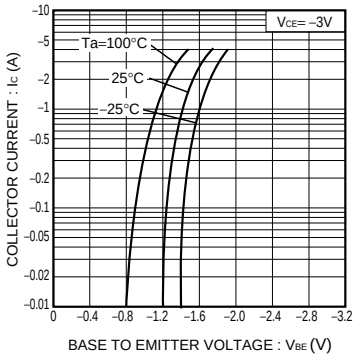
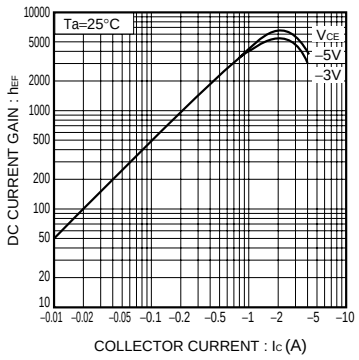
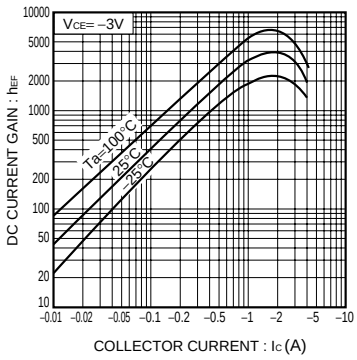


Fig.1 Ground emitter output characteristics (Ⅰ) Fig.2 Ground emitter output characteristics (Ⅱ) Fig.3 Ground emitter propagation characteristics





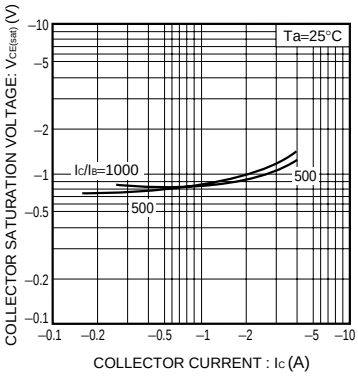
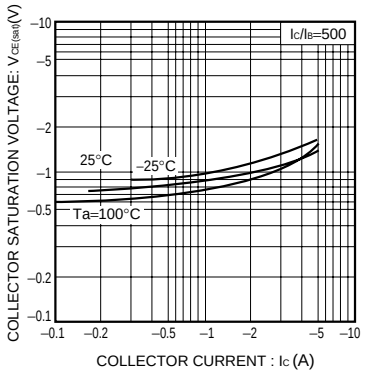
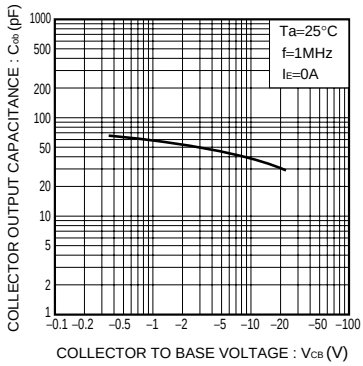


Fig.4 DC current gain vs.a collector current(Ⅰ) Fig.5 DC current gain vs. collector current (Ⅱ) Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅰ)





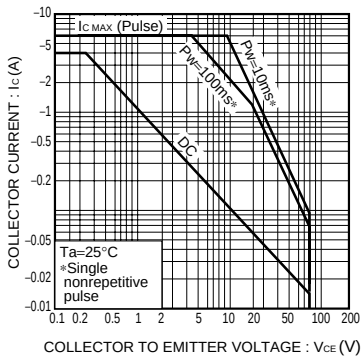


Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅱ) Fig.8 Collector output capacitance vs. collector-base voltage Fig.9 Safe operating area

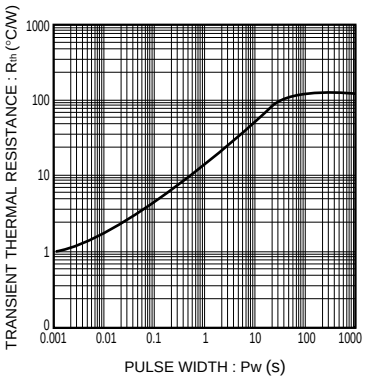


Fig.10 Transient thermal resistance

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