

# Power Transistor (–60V, –3A)

## 2SB1243

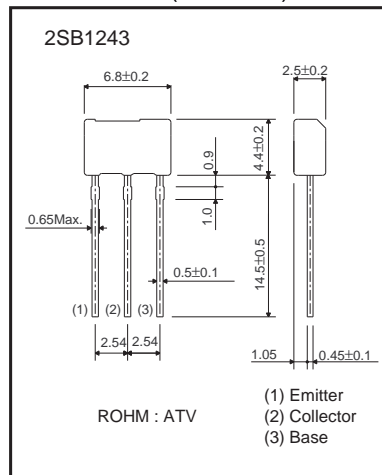
### ●Features

- 1) Low  $V_{CE(sat)}$ .  
 $V_{CE(sat)} = -0.5V$  (Typ.)  
 $(I_C/I_B = -2A / -0.2A)$
- 2) Complements the 2SD1864.

### ●Structure

Epitaxial planar type  
 PNP silicon transistor

### ●Dimensions (Unit : mm)



### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	–60	V
Collector-emitter voltage	$V_{CEO}$	–50	V
Emitter-base voltage	$V_{EBO}$	–5	V
Collector current	$I_C$	–3	A (DC)
Collector power dissipation	$P_C$	1	W *1
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	–55 to 150	°C

\*1 Printed circuit board, 1.7mm thick, collector copper plating 100mm<sup>2</sup> or larger.

### ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	–60	–	–	V	$I_C = -50\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	–50	–	–	V	$I_C = -1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	–5	–	–	V	$I_E = -50\mu A$
Collector cutoff current	$I_{CBO}$	–	–	–1	$\mu A$	$V_{CB} = -40V$
Emitter cutoff current	$I_{EBO}$	–	–	–1	$\mu A$	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	–1	V	$I_C/I_B = -2A / -0.2A$ *
DC current transfer ratio	$h_{FE}$	120	–	390	–	$V_{CE} = -3V, I_C = -0.5A$ *
Transition frequency	$f_T$	–	70	–	MHz	$V_{CE} = -5V, I_E = 0.5A, f = 30MHz$
Output capacitance	$C_{ob}$	–	50	–	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

\* Measured using pulse current.

●Packaging specifications and hFE

Type	hFE	Package	Taping
		Code	TV2
		Basic ordering unit (pieces)	2500
2SB1243	QR		○

hFE values are classified as follows :

Item	Q	R
hFE	120 to 270	180 to 390

●Electrical characteristic curves

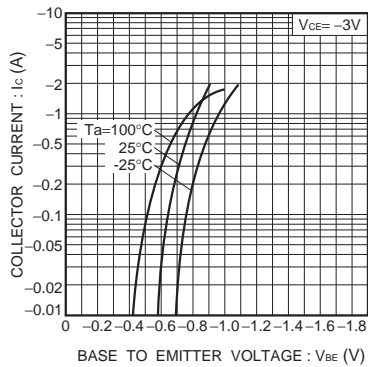


Fig.1 Grounded emitter propagation characteristics

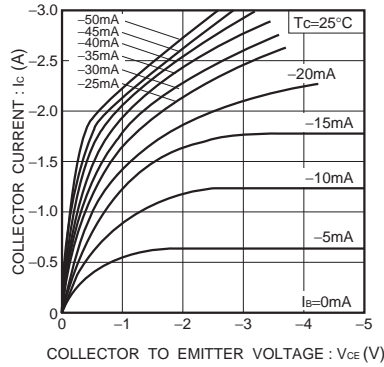


Fig.2 Grounded emitter output characteristics ( I )

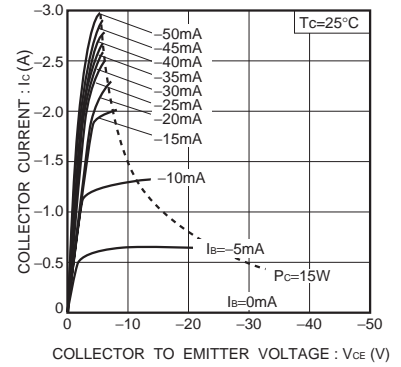


Fig.3 Grounded emitter output characteristics ( II )

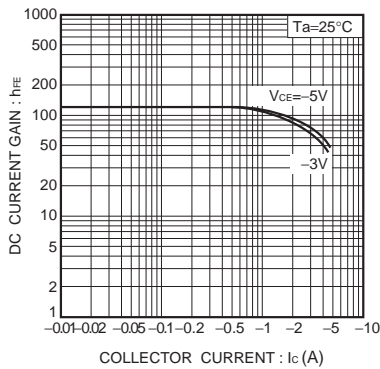


Fig.4 DC current gain vs. collector current ( I )

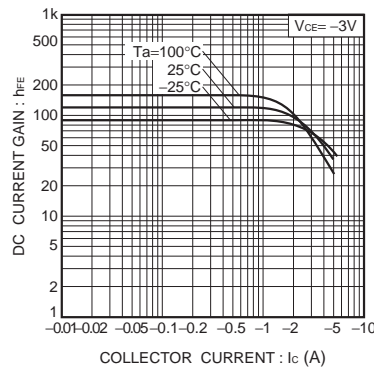


Fig.5 DC current gain vs. collector current ( II )

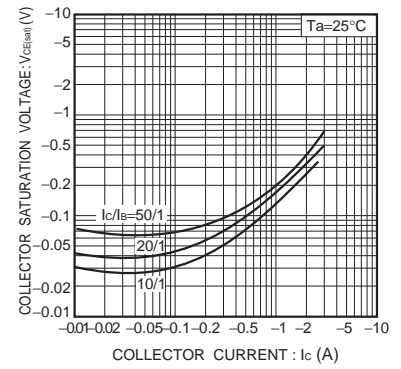


Fig.6 Collector-emitter saturation voltage vs. collector current

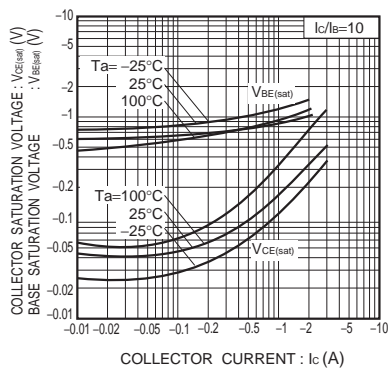


Fig.7 Collector-emitter saturation voltage vs. collector current  
Base-emitter saturation voltage vs. collector current

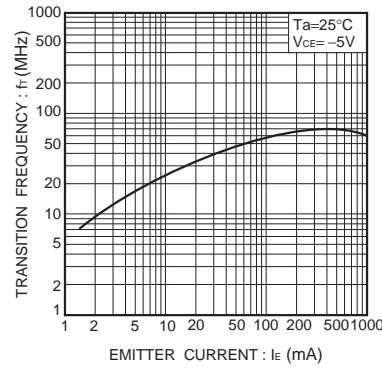


Fig.8 Gain bandwidth product vs. emitter current

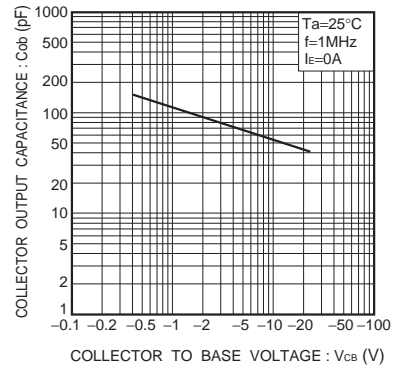


Fig.9 Collector output capacitance vs. collector base voltage

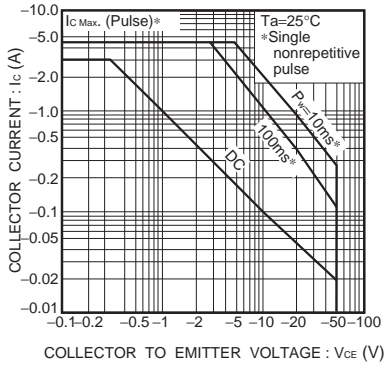


Fig.10 Safe operation area

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