Power Transistor (−50V, −2A)

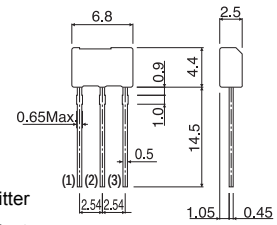
2SB1443

●Features

1) Low saturation voltage.
   $V_{CE\ (sat)}$ = −0.35V (Max.) at I_C / I_B = −1A / −50mA.
2) Excellent DC current gain characteristics.

●Dimensions (Unit : mm)

ATV



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

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−50	V
Collector-emitter voltage	V_{CEO}	−50	V
Emitter-base voltage	V_{EBO}	−6	V
Collector current	I_C	−2	A (DC)
		−5	A (Pulse) *1
Collector power dissipation	P_C	1	W *2
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

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

●Packaging specifications and h_{FE}

Type	2SB1443
Package	ATV
h_{FE}	Q
Marking	–
Code	TV2
Basic ordering unit (pieces)	2500

*Denotes h_{FE}

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−50	–	–	V	I_C=−50μA
Collector-emitter breakdown voltage	BV_{CEO}	−50	–	–	V	I_C=−1mA
Emitter-base breakdown voltage	BV_{EBO}	−6	–	–	V	I_E=−50μA
Collector cutoff current	I_{CBO}	–	–	−0.1	μA	V_{CB}=−50V
Emitter cutoff current	I_{EBO}	–	–	−0.1	μA	V_{EB}=−5V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	−0.15	−0.35	V	I_C/I_B=−1A/−50mA *
DC current transfer ratio	h_{FE}	120	–	270	–	V_{CE}/I_C=−2V/−0.5A
Transition frequency	f_T	–	200	–	MHz	V_{CE}=−2V, I_E=0.5A, f=100MHz
Output capacitance	Cob	–	36	–	pF	V_{CB}=−10V, I_E=0A, f=1MHz *

* Measured using pulse current

●Electrical characteristics curves

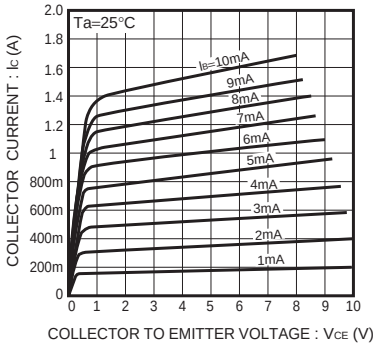


Fig.1 Grounded Emitter Output Characteristics

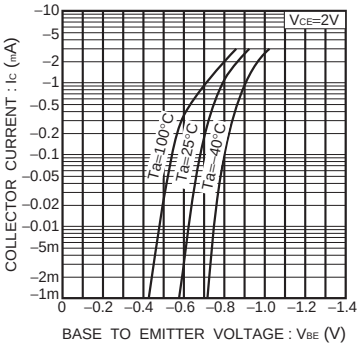


Fig.2 Grounded Emitter Propagation Characteristics

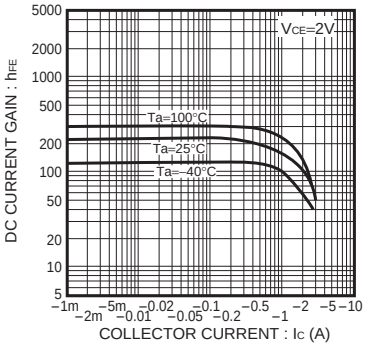


Fig.3 DC Current Gain vs. Collector Current

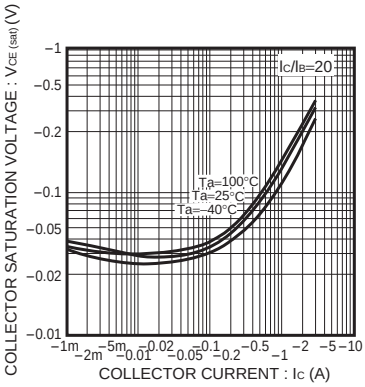


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current

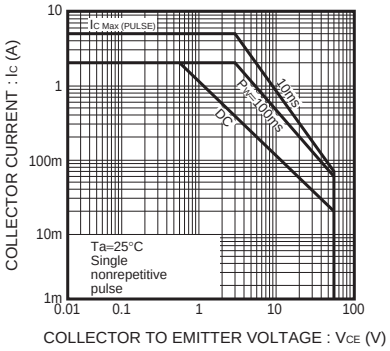


Fig.5 Safe Operating Area

Notes

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