Medium Power Transistor (−60V, −2A)

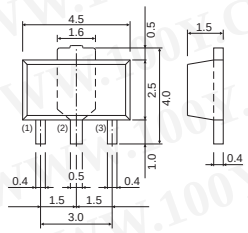
2SB1561

●Features

1) Low saturation voltage , typically
   $V_{CE\ (sat)}$ = −0.15V at I_C / I_B = −1A / −50mA.
2) Collector-emitter voltage = −60V
3) Pc = 2W (on 40×40×0.7mm ceramic board).
4) Complements the 2SD2391.

●Dimensions (Unit : mm)

MPT3



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

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	V_{CBO}	−60	V	
Collector-emitter voltage	V_{CEO}	−60	V	
Emitter-base voltage	V_{EBO}	−6	V	
Collector current	I_C	−2	A	
	I_{CP}	−6	A	*1
Collector power dissipation	P_C	0.5	W	
		2		*2
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	−55 to +150	°C	

*1 Single pulse, Pw=10ms
*2 When mounted on a 40×40×0.7mm ceramic board.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Collector-base breakdown voltage	BV_{CBO}	−60	−	−	V	I_C=−50μA	
Collector-emitter breakdown voltage	BV_{CEO}	−60	−	−	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_{FE1}	120	−	270	−	V_{CE}/I_C=−2V/−0.5A	
	h_{FE2}	45	−	−	−	V_{CE}/I_C=−2V/−1.5A	
Transition frequency	f_T	−	200	−	MHz	V_{CE}=−2V, I_E=0.5A, f=100MHz	*
Output capacitance	Cob	−	23	−	pF	V_{CB}=−10V, I_E=0A, f=1MHz	

* Measured using pulse current

●Packaging specifications and h_{FE}

Type	2SB1561
Package	MPT3
h_{FE}	Q
Marking	BL*
Code	T100
Basic ordering unit (pieces)	1000

*Denotes h_{FE}

● Electrical characteristic curves

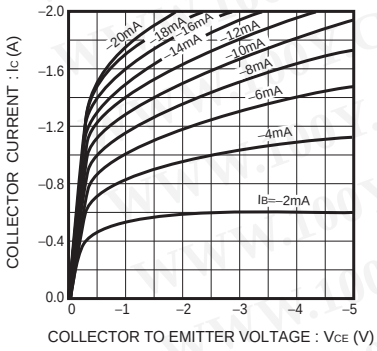


Fig.1 Grounded emitter output characteristics

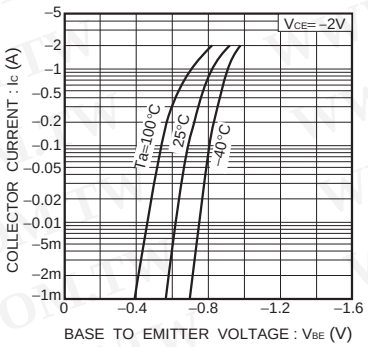


Fig.2 Grounded emitter propagation characteristics

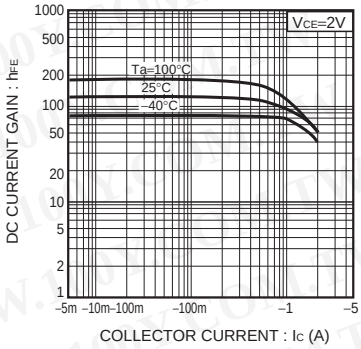


Fig.3 DC current gain vs. collector current (I)

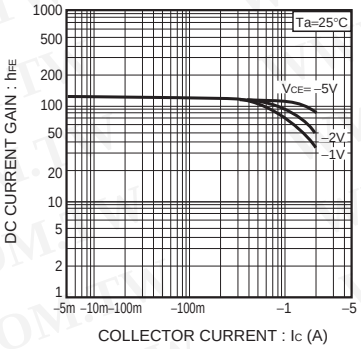


Fig.4 DC current gain vs. collector current (II)

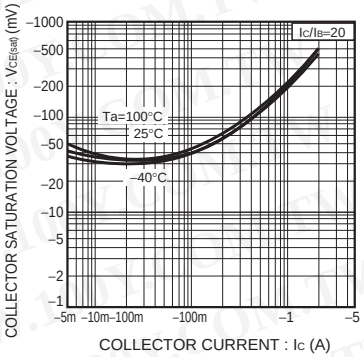


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

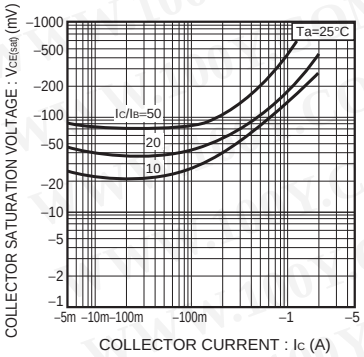


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

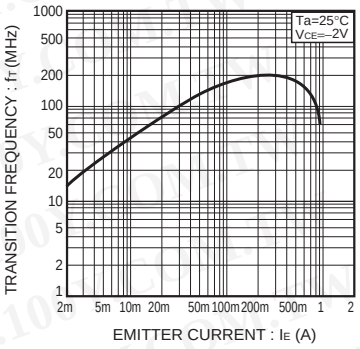


Fig.7 Gain bandwidth product vs. emitter current

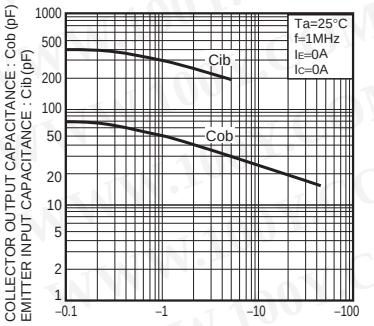


Fig.8 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

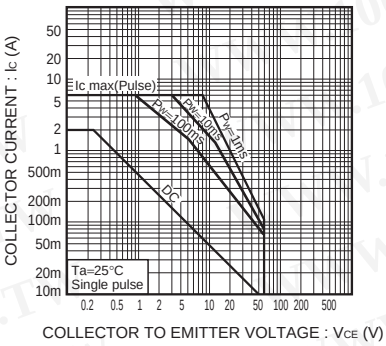


Fig.9 Safe operating area

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