

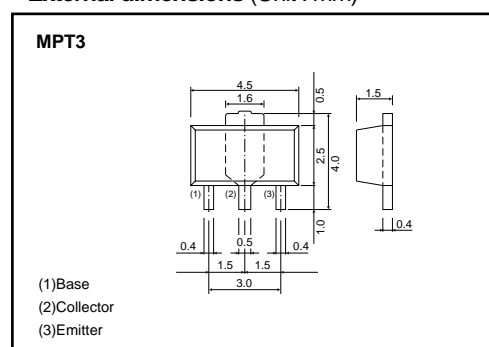
Medium Power Transistor (–60V, –2A)

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) $P_c = 2W$ (on 40×40×0.7mm ceramic board).
- 4) Complements the 2SD2391.

●External 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}	–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	T_J	150	°C
Storage temperature	T_{stg}	–55 to +150	°C

*1 Single pulse, $P_w=10ms$

*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	$I_C = -50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	–60	–	–	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	–6	–	–	V	$I_E = -50\mu A$
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	C_{ob}	–	23	–	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

* Measured using pulse current

Transistors

●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

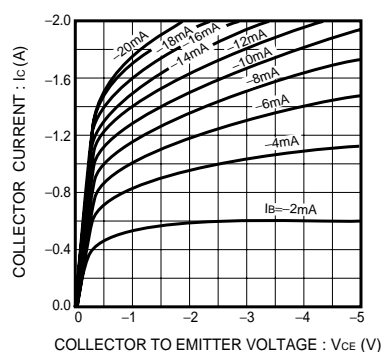


Fig.1 Grounded emitter output characteristics

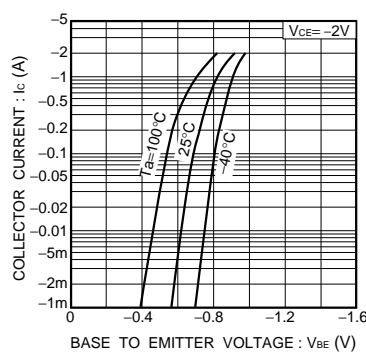


Fig.2 Grounded emitter propagation characteristics

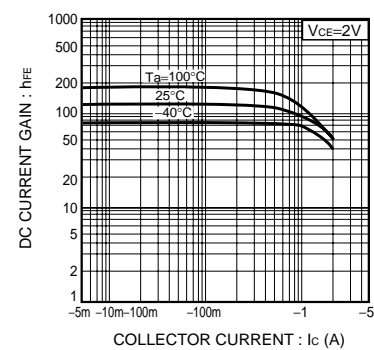


Fig.3 DC current gain vs. collector current (I)

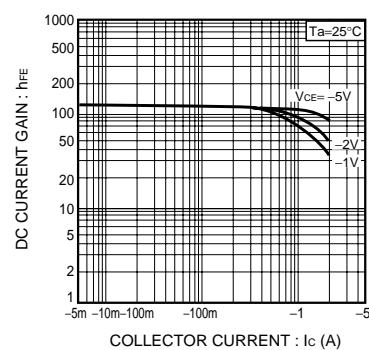


Fig.4 DC current gain vs. collector current (II)

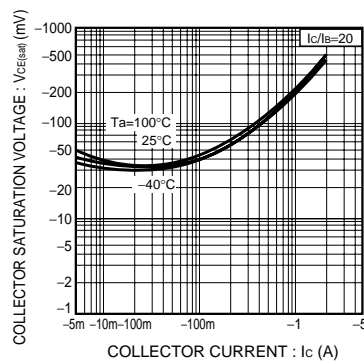


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

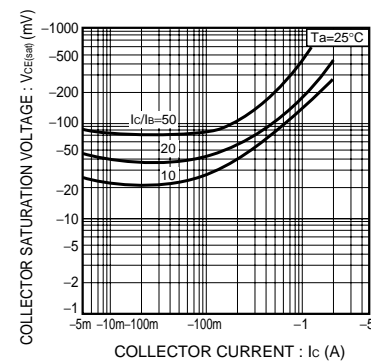


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

Transistors

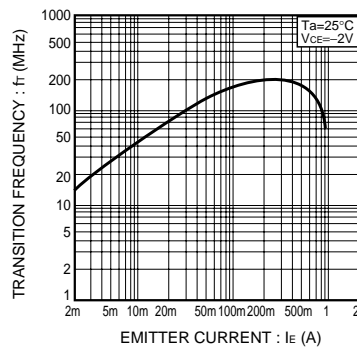


Fig.7 Gain bandwidth product
vs. emitter current

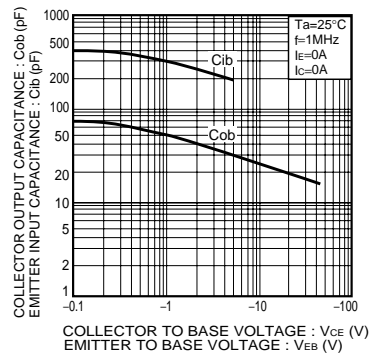


Fig.8 Collector output capacitance
vs. collector-base voltage
Emitter input capacitance
vs. emitter-base voltage

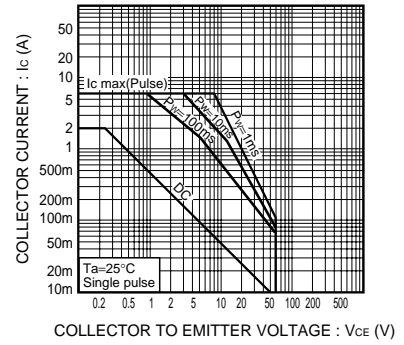


Fig.9 Safe operating area

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