

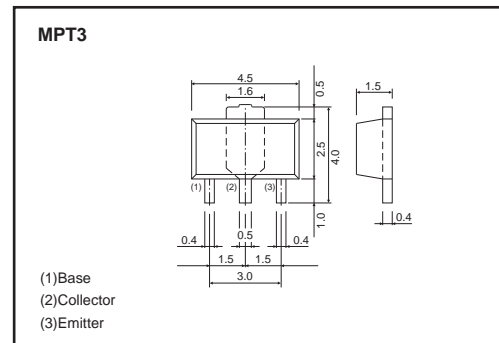
# Medium Power Transistor (-60V, -2A)

## 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  $40 \times 40 \times 0.7mm$  ceramic board).
- 4) Complements the 2SD2391.

### ●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	
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  $40 \times 40 \times 0.7mm$  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	$\mu A$	$V_{CB} = -50V$
Emitter cutoff current	$I_{EBO}$	-	-	-0.1	$\mu A$	$V_{EB} = -5V$
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	$f_r$	-	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

### ●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

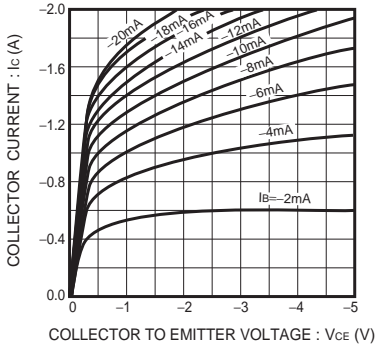


Fig.1 Grounded emitter output characteristics

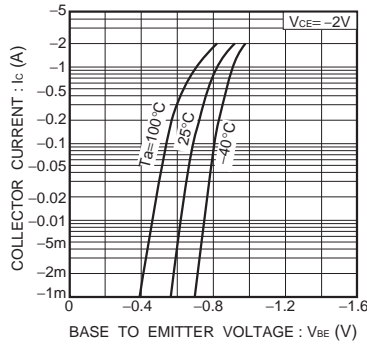


Fig.2 Grounded emitter propagation characteristics

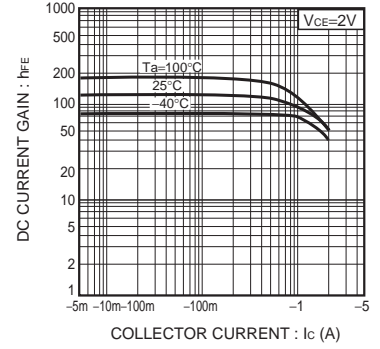


Fig.3 DC current gain vs. collector current ( I )

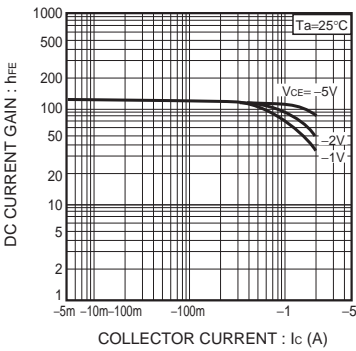


Fig.4 DC current gain vs. collector current ( II )

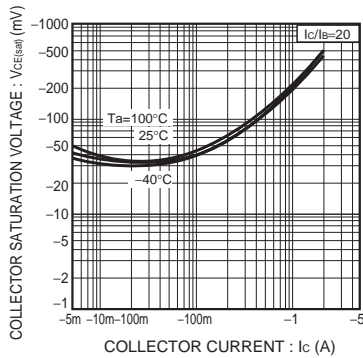


Fig.5 Collector-emitter saturation voltage vs. collector current ( I )

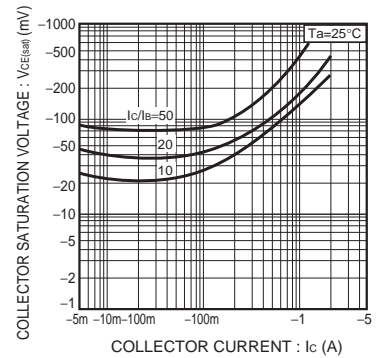


Fig.6 Collector-emitter saturation voltage vs. collector current ( II )

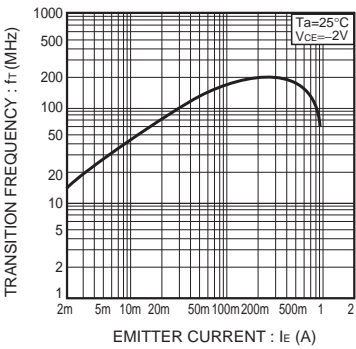


Fig.7 Gain bandwidth product vs. emitter current

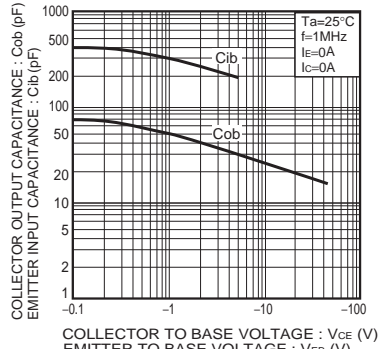


Fig.8 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

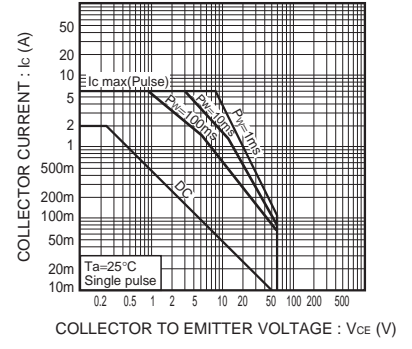


Fig.9 Safe operating area

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