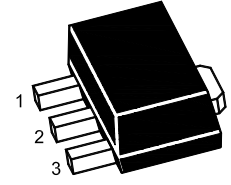


2SB1561U

PNP Silicon Epitaxial Planar Transistor

Medium Power Transistor



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

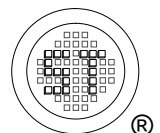
Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{\text{CBO}}$	60	V
Collector Emitter Voltage	$-V_{\text{CEO}}$	60	V
Emitter Base Voltage	$-V_{\text{EBO}}$	6	V
Collector Current - DC Collector Current - Pulse ¹⁾	$-I_{\text{C}}$ $-I_{\text{CP}}$	2 6	A
Total Power Dissipation	P_{tot}	0.5 2 ²⁾	W
Junction Temperature	T_{J}	150	$^\circ\text{C}$
Storage Temperature Range	T_{Stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Single pulse, $P_{\text{W}} = 10 \text{ ms}$

²⁾ When mounted on a 40 x 40 x 0.7 mm ceramic board

Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{\text{CE}} = 2 \text{ V}$, $-I_{\text{C}} = 0.5 \text{ A}$ at $-V_{\text{CE}} = 2 \text{ V}$, $-I_{\text{C}} = 1.5 \text{ A}$	h_{FE} h_{FE}	120 45	- -	270 -	- -
Collector Base Breakdown Voltage at $-I_{\text{C}} = 50 \mu\text{A}$	$-V_{(\text{BR})\text{CBO}}$	60	-	-	V
Collector Emitter Breakdown Voltage at $-I_{\text{C}} = 1 \text{ mA}$	$-V_{(\text{BR})\text{CEO}}$	60	-	-	V
Emitter Base Breakdown Voltage at $-I_{\text{E}} = 50 \mu\text{A}$	$-V_{(\text{BR})\text{EBO}}$	6	-	-	V
Collector Base Cutoff Current at $-V_{\text{CB}} = 50 \text{ V}$	$-I_{\text{CBO}}$	-	-	0.1	μA
Emitter Base Cutoff Current at $-V_{\text{EB}} = 5 \text{ V}$	$-I_{\text{EBO}}$	-	-	0.1	μA
Collector Emitter Saturation Voltage at $-I_{\text{C}} = 1 \text{ A}$, $-I_{\text{B}} = 50 \text{ mA}$	$-V_{\text{CE(sat)}}$	-	-	0.35	V
Transition Frequency at $-V_{\text{CE}} = 2 \text{ V}$, $-I_{\text{E}} = 0.5 \text{ A}$, $f = 100 \text{ MHz}$	f_{T}	-	200	-	MHz
Output Capacitance at $-V_{\text{CB}} = 10 \text{ V}$, $f = 1 \text{ MHz}$	C_{ob}	-	23	-	pF



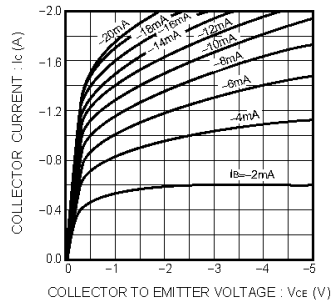


Fig.1 Grounded emitter output characteristics

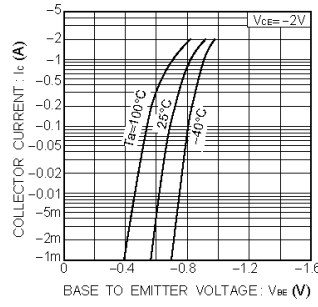


Fig.2 Grounded emitter propagation characteristics

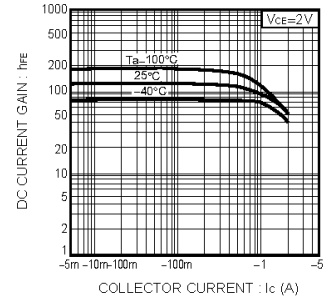


Fig.3 DC current gain vs. collector current (I)

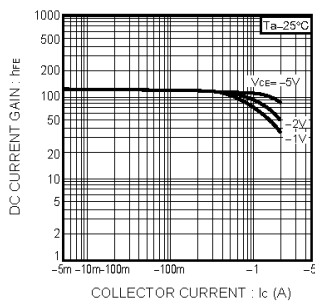


Fig.4 DC current gain vs. collector current (II)

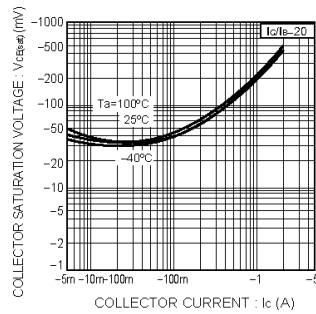


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

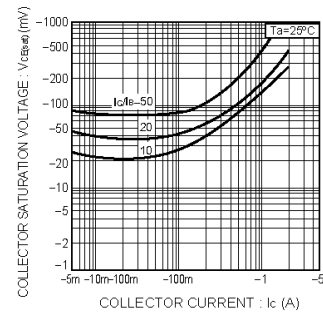


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

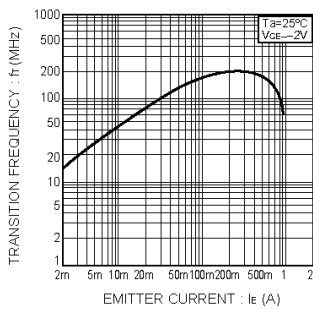


Fig.7 Gain bandwidth product vs. emitter current

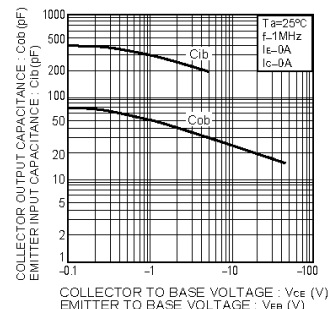


Fig.8 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

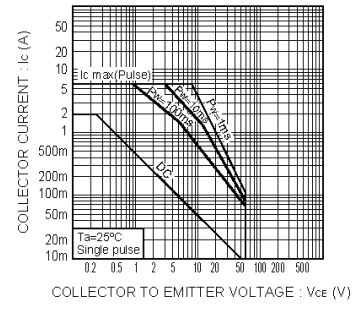
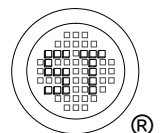


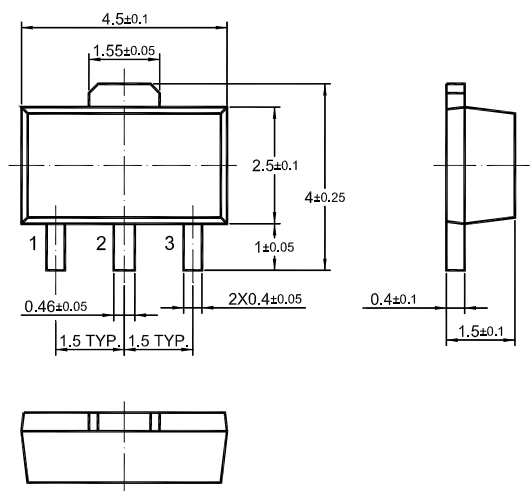
Fig.9 Safe operating area



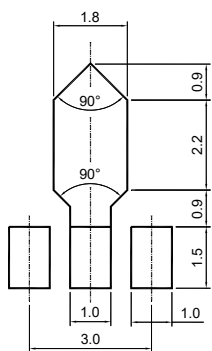
2SB1561U

Package Outline (Dimensions in mm)

SOT-89



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-89	12	8 ± 0.1	0.315 ± 0.004	178	7	1,000
				330	13	4,000

Marking information

" 2SB1561U " = Part No.

"YM" = Date Code Marking

"Y" = Year

"M" = Month

Font type: Arial

