Silicon PNP Epitaxial Planer
Low Frequency Power Amplifier

Features

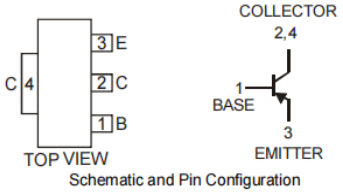
- Small size package: SOT89-3L
- Large Maximum current: I_C = –1 A
- Low collector to emitter saturation voltage: $V_{CE(sat)}$ = –0.15 V max.(at I_C/I_B = –0.5 A/–0.05 A)
- High power dissipation: P_C = 2W
- Complementary pair with 2SD2391

Outline

(Package name: SOT89-3L)



SOT89-3L



Schematic and Pin Configuration

Note: Marking is “BL“.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base Voltage	V_{CBO}	–80	V
Collector to emitter voltage	V_{CEO}	–60	V
Emitter to base voltage	V_{EBO}	–5	V
Collector current	I_C	–3	A
Collector peak current	ic(peak)	–6	A
Collector power dissipation	P_C	2	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. No purposefully added lead.

Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	–80	—	—	V	IC = -100μA, IE = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–60	—	—	V	IC = -10mA, IB = 0
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–5	—	—	V	IE = -100μA, IC = 0
Collector cutoff current	I_{CBO}	—	—	-0.1	μA	VCB = -60V, IE = 0
Emitter cutoff current	I_{EBO}	—	—	-0.1	μA	V_{EB} = –4V, I_C = 0
DC current transfer ratio	h_{FE}	100	180	300	—	V_{CE} = –2 V, I_C = -50mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	–0.15	–0.3	V	IC = -1A, IB = -100mA
Base to emitter saturation voltage	$V_{BE(sat)}$	—	–0.9	–1.25	V	IC = -1A, IB = -100mA
Gain bandwidth product	f_T	100	145	—	MHz	VCE = -10V, IC = -50mA, f = 100MHz
Collector output capacitance	Cob	—	—	30	pF	V_{CB} = –10 V, I_E = 0, f = 1 MHz

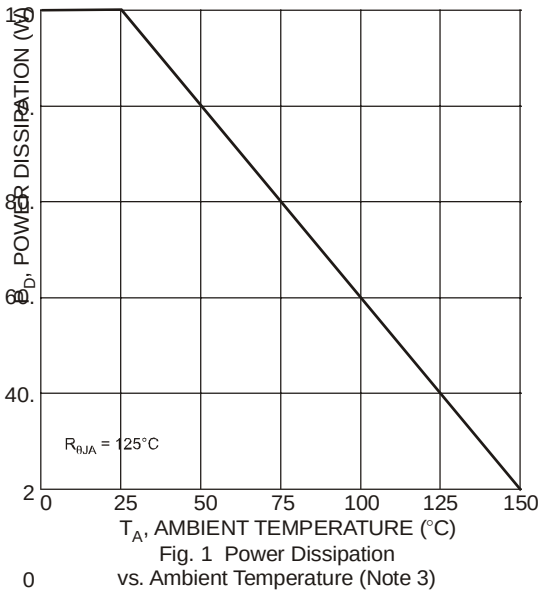


Fig. 1 Power Dissipation
vs. Ambient Temperature (Note 3)

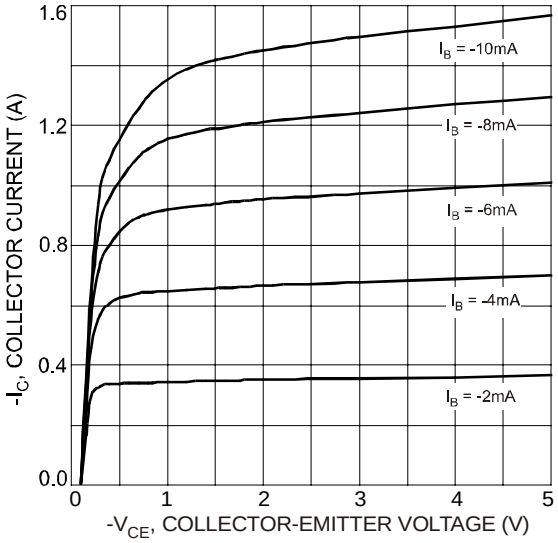


Fig. 2 Typical Collector Current
vs. Collector-Emitter Voltage

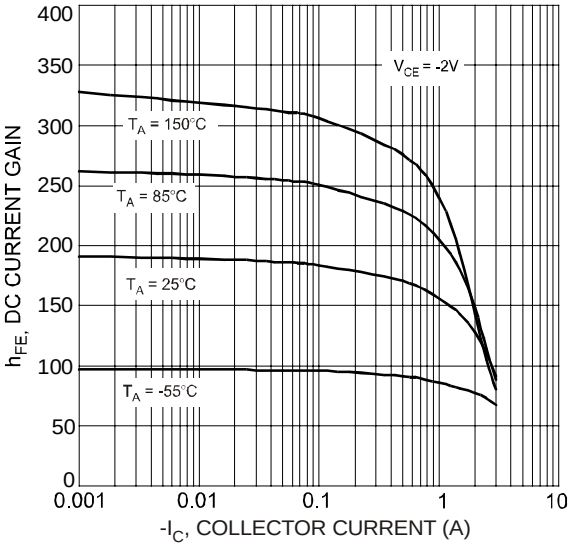


Fig. 3 Typical DC Current Gain vs. Collector Current

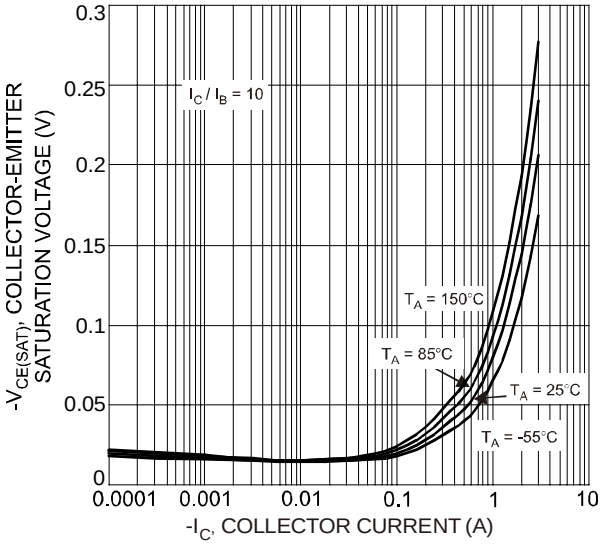


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

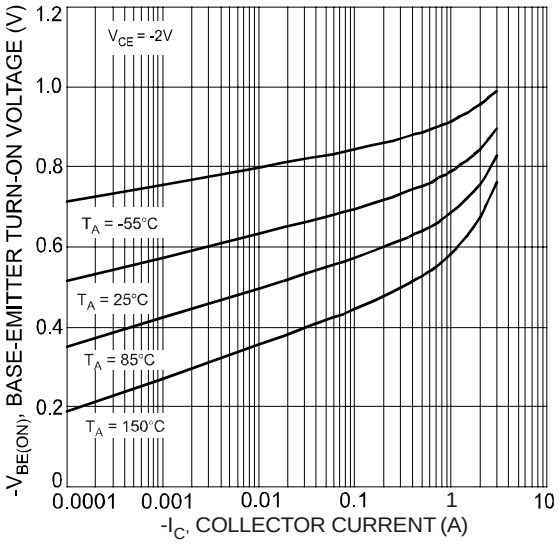


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

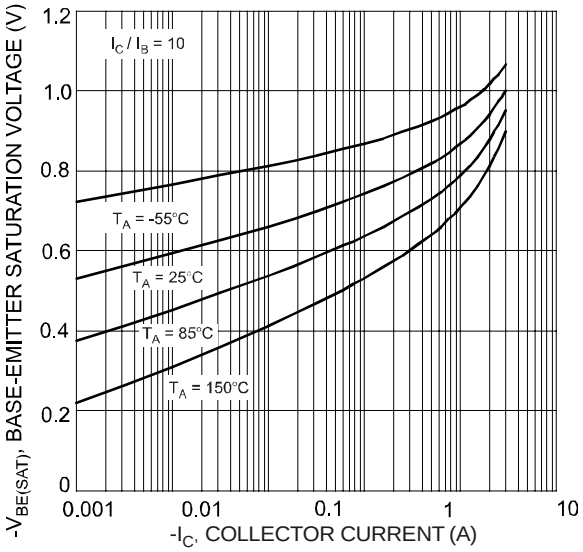


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

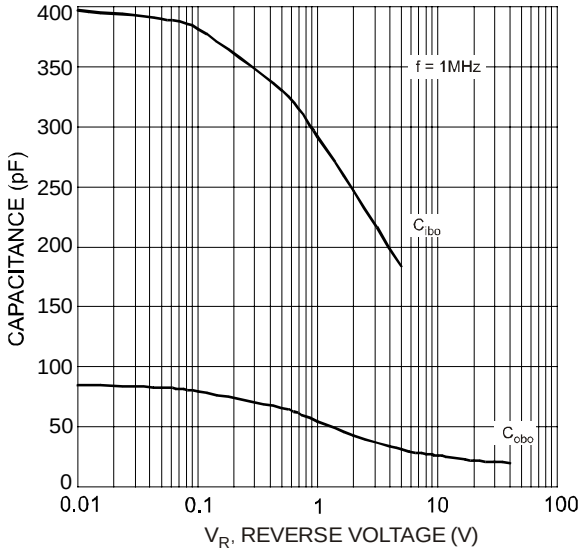


Fig. 7 Typical Capacitance Characteristics

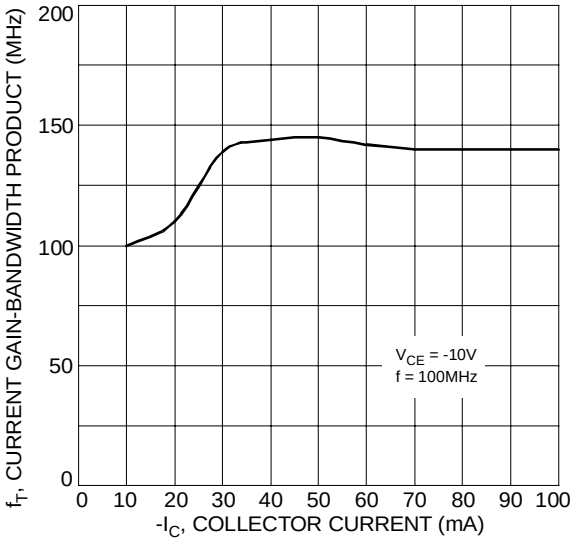
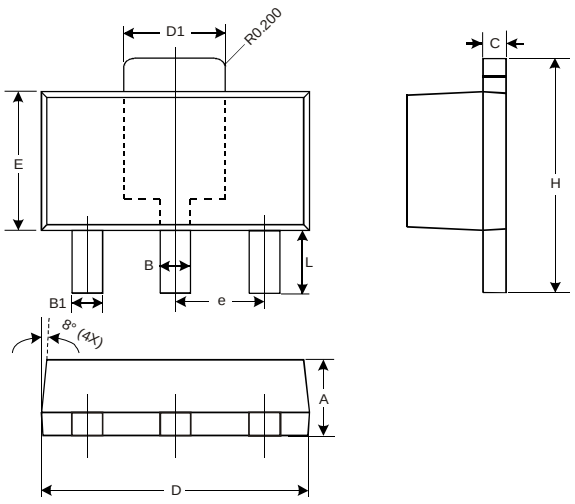


Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

Ordering Information (Note 5)

Device	Packaging	Shipping
2SB1561	SOT89-3L	1000/Tape & Reel

Package Outline Dimensions



SOT89-3L			
Dim	**Min**	**Max**	**Typ**
A	1.40	1.60	1.50
B	0.45	0.55	0.50
B1	0.37	0.47	0.42
C	0.35	0.43	0.38
D	4.40	4.60	4.50
D1	1.50	1.70	1.60
E	2.40	2.60	2.50
e	—	—	1.50
H	3.95	4.25	4.10
L	0.90	1.20	1.05
All Dimensions in mm			

Suggested Pad Layout

