

## 2SB1389

Silicon PNP Triple Diffused  
Low Frequency Power Amplifier

### Absolute Maximum Ratings (Ta = 25°C)

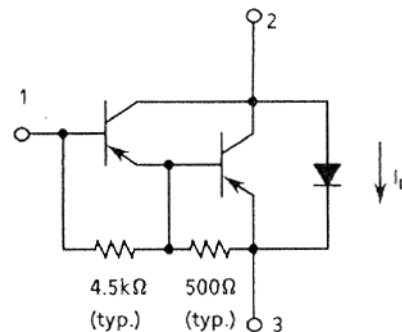
Item	Symbol	Rating	Unit
Collector to base voltage	$V_{CB0}$	-60	V
Collector to emitter voltage	$V_{CE0}$	-60	V
Emitter to base voltage	$V_{EB0}$	-7	V
Collector current	$I_C$	-4	A
Collector peak current	$i_{C(peak)}$	-8	A
Collector power dissipation	$P_C$	2	W
	$P_C^{-1}$	25	
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C
C to E diode forward current	$I_D^{-1}$	4	A

Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

TO-220 FM



1. Base
2. Collector
3. Emitter



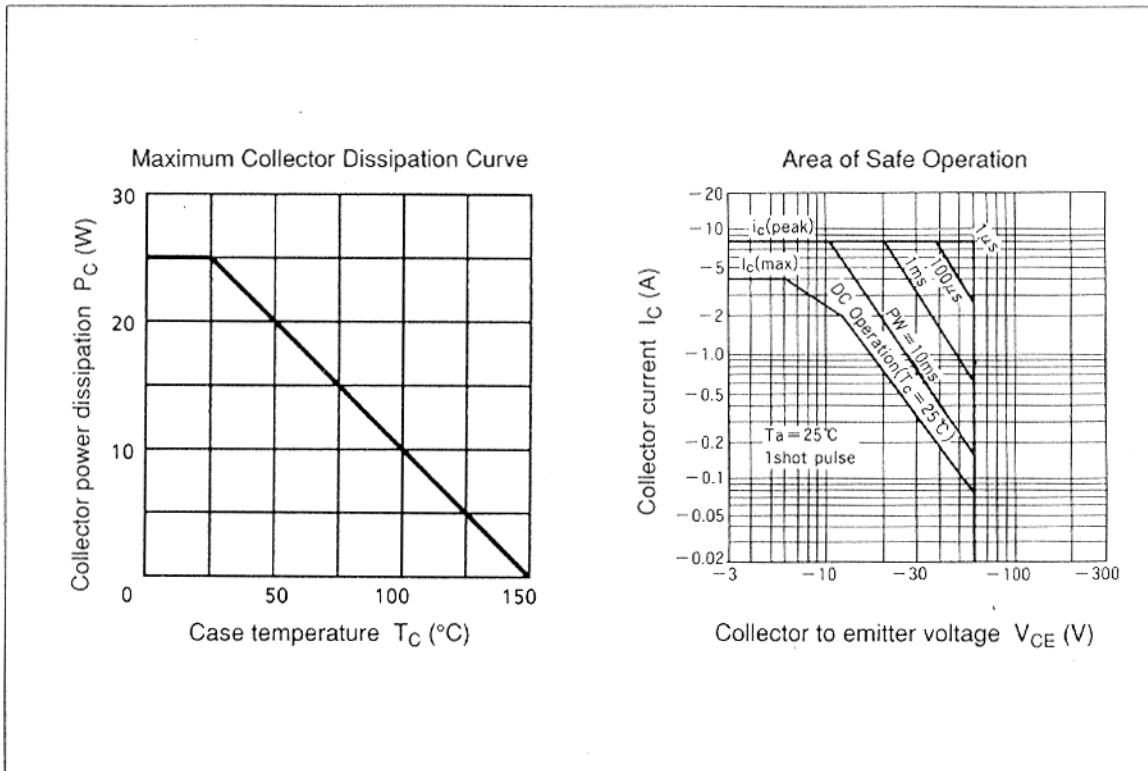
### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(BR)CB0}$	-60	—	—	V	$I_C = -0.1 \text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CE0}$	-60	—	—	V	$I_C = -25 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EB0}$	-7	—	—	V	$I_E = -50 \text{ mA}, I_C = 0$
Collector cutoff current	$I_{CB0}$	—	—	-10	$\mu\text{A}$	$V_{CB} = -50 \text{ V}, I_E = 0$
	$I_{CE0}$	—	—	-10		$V_{CE} = -50 \text{ V}, R_{BE} = \infty$
DC current transfer ratio	$h_{FE}$	1000	—	20000		$V_{CE} = -3 \text{ V}, I_C = -2 \text{ A}^{-1}$
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	-1.5	V	$I_C = -2 \text{ A}, I_B = -4 \text{ mA}^{-1}$
	$V_{CE(sat)2}$	—	—	-3.0		$I_C = -4 \text{ A}, I_B = -40 \text{ mA}^{-1}$

### Electrical Characteristics (Ta = 25°C) (cont)

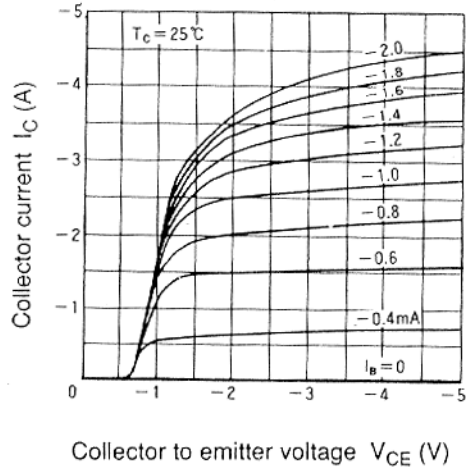
Item	Symbol	Min	Typ	Max	Unit	Test condition
Base to emitter saturation voltage	$V_{BE(sat)1}$	—	—	-2.0	V	$I_C = -2\text{ A}, I_B = -4\text{ mA}^{-1}$
	$V_{BE(sat)2}$	—	—	-3.5		$I_C = -4\text{ A}, I_B = -40\text{ mA}^{-1}$
C to E diode forward voltage	$V_D$	—	—	3.0	V	$I_D = 4\text{ A}^{-1}$

Note: 1. Pulse Test.  
See switching characteristic curve of 2SB1101.

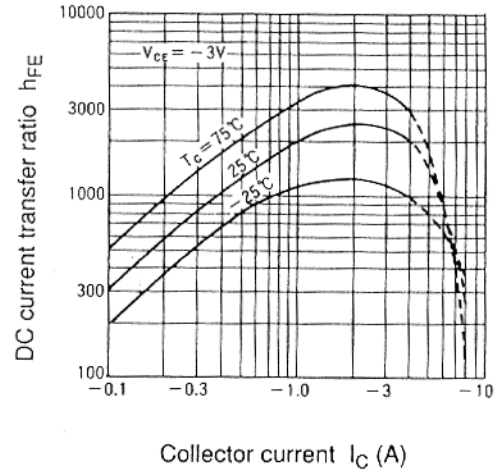


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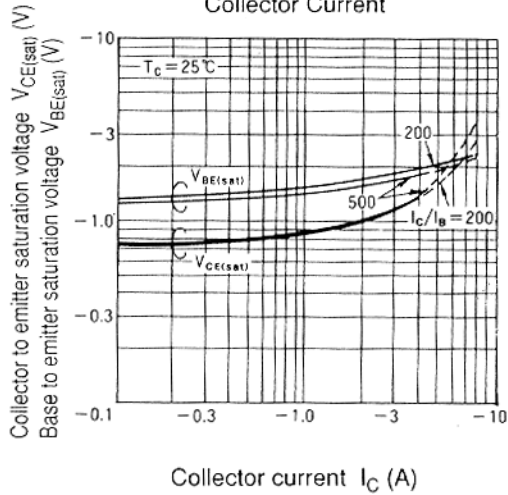
Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current



Saturation Voltage vs. Collector Current



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