

## 2SD2109

Silicon NPN Triple Diffused  
Low Frequency Power Amplifier

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

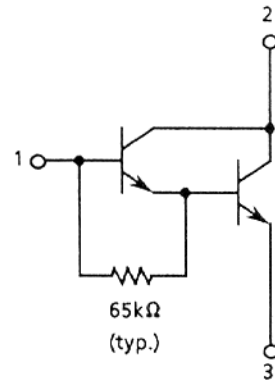
Item	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	300	V
Collector to emitter voltage	$V_{CEO}$	300	V
Emitter to base voltage	$V_{EBO}$	7	V
Collector current	$I_C$	0.3	A
Collector peak current	$i_{C(peak)}$	0.6	A
Collector power dissipation	$P_C$	2	W
	$P_C^{*1}$	15	
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

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

TO-220FM



1. Base
2. Collector
3. Emitter



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

Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	300	—	—	V	$I_C = 1 \text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	300	—	—	V	$I_C = 10 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 1 \text{ mA}, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	10	$\mu\text{A}$	$V_{CB} = 300 \text{ V}, I_E = 0$
	$I_{CEO}$	—	—	10		$V_{CE} = 60 \text{ V}, R_{BE} = \infty$
	$I_{EBO}$	—	—	10		$V_{EB} = 5 \text{ V}, I_E = 0$
DC current transfer ratio	$h_{FE1}$	1000	—	—		$V_{CE} = 1.5 \text{ V}, I_C = 20 \text{ mA}^{*1}$
	$h_{FE2}$	1500	—	—		$V_{CE} = 1.5 \text{ V}, I_C = 100 \text{ mA}^{*1}$

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

Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C = 100 \text{ mA}, I_B = 0.2 \text{ mA}^{*1}$
Base to emitter saturation voltage	$I_{BE(sat)}$	—	—	2.0	V	$I_C = 100 \text{ mA}, I_B = 0.2 \text{ mA}^{*1}$

Note: 1. Pulse Test.

