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# 2SD1521

Silicon NPN Epitaxial

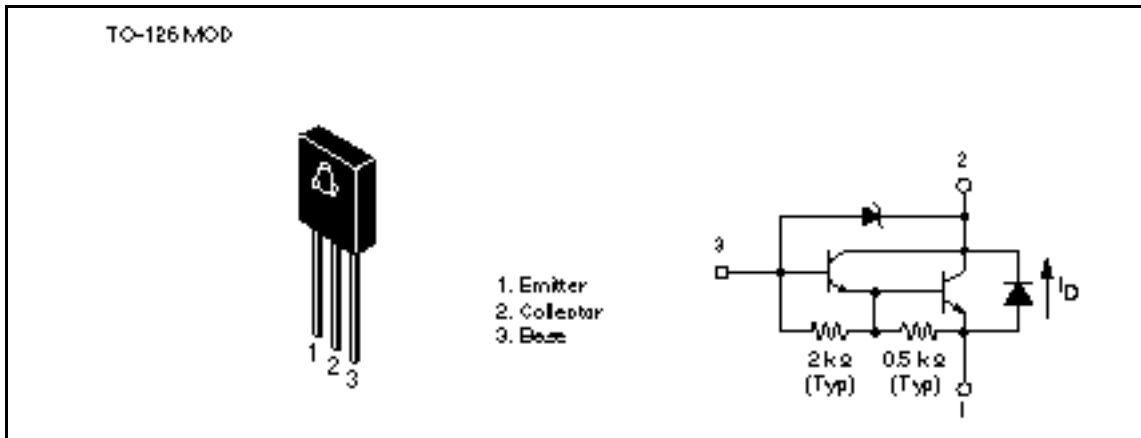
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## Application

Low frequency power amplifier

## Outline



## Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Item	Symbol	Rating	Unit
Collector to emitter voltage	V <sub>CEO</sub>	50	V
Emitter to base voltage	V <sub>EBO</sub>	7	V
Collector current	I <sub>C</sub>	1.5	A
Collector peak current	I <sub>C (peak)</sub>	3.0	A
Collector power dissipation	P <sub>C</sub>	10	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C
C to E diode forward current	I <sub>D</sub> <sup>*1</sup>	1.5	A

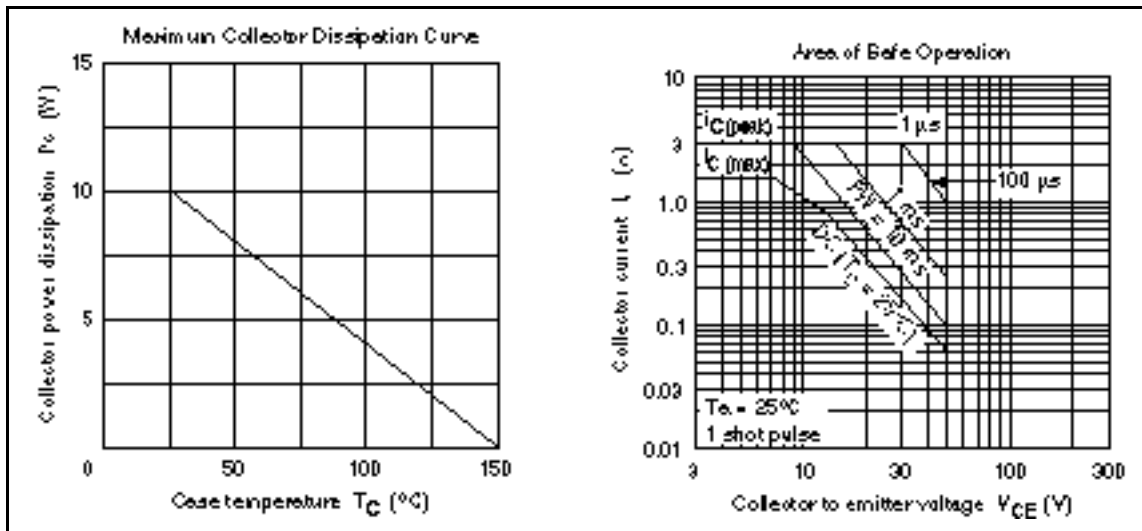
Note: 1. Value at T<sub>C</sub> = 25°C.

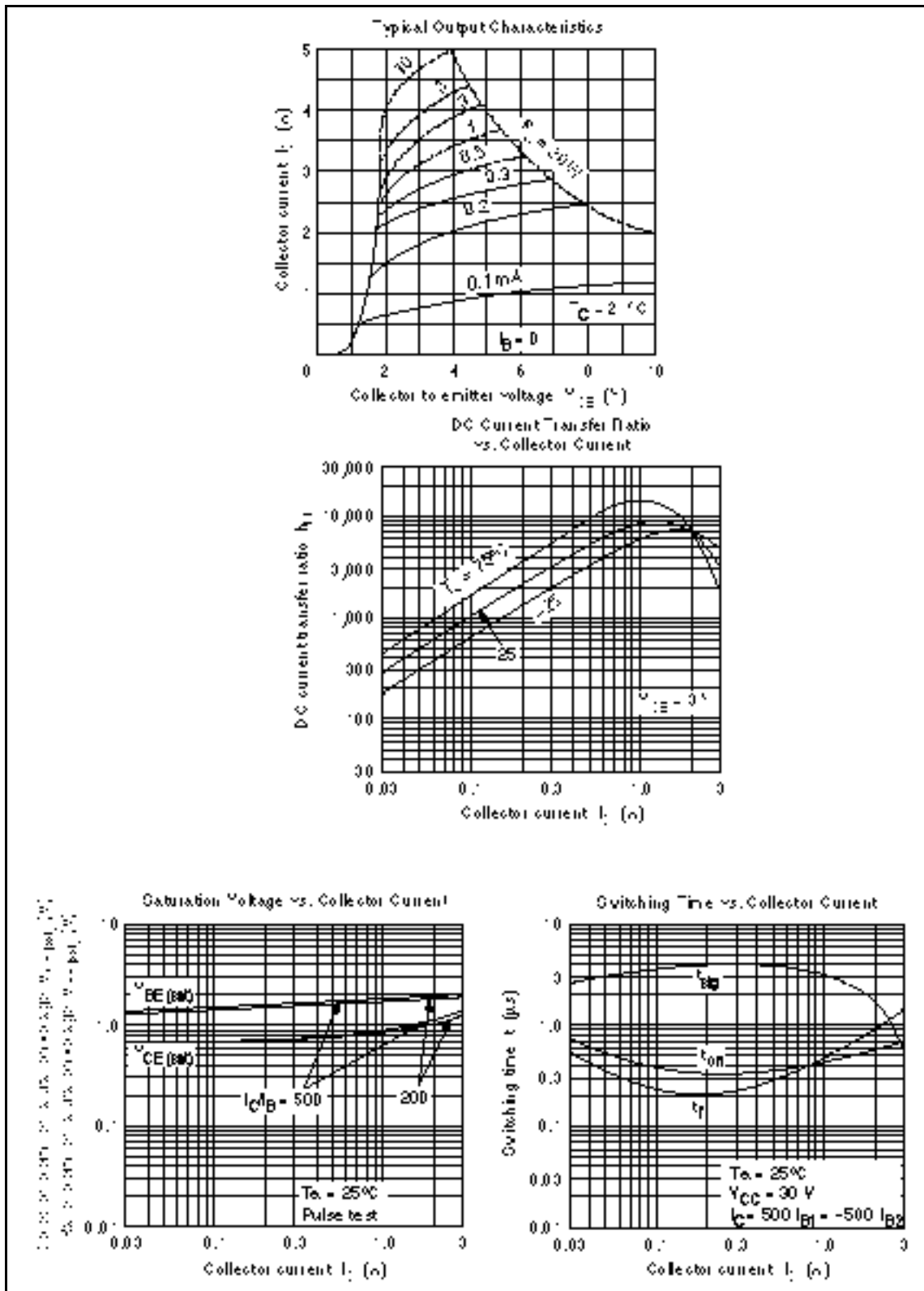
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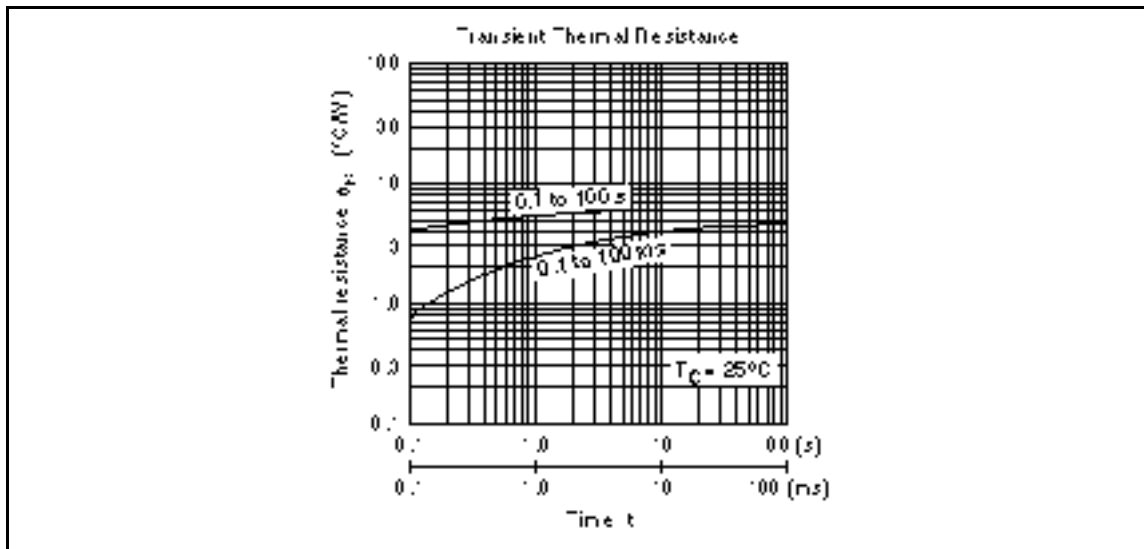
### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage (Zener breakdown voltage)	$V_{(BR)CBO}$ [V <sub>Z</sub> ]	50	60	70	V	$I_C = 0.1 \text{ mA}$ , $I_E = 0$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 50 \text{ mA}$ , $I_C = 0$
Collector cutoff current	$I_{CEO}$	—	—	10	μA	$V_{CE} = 50 \text{ V}$ , $R_{BE} =$
DC current transfer ratio	$h_{FE}$	2000	—	30000		$V_{CE} = 3 \text{ V}$ , $I_C = 1 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	1.5	V	$I_C = 1 \text{ A}$ , $I_B = 1 \text{ mA}^{*1}$
	$V_{CE(sat)2}$	—	—	2.0	V	$I_C = 1.5 \text{ A}$ , $I_B = 1.5 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)1}$	—	—	2.0	V	$I_C = 1 \text{ A}$ , $I_B = 1 \text{ mA}^{*1}$
	$V_{BE(sat)2}$	—	—	2.5	V	$I_C = 1.5 \text{ A}$ , $I_B = 1.5 \text{ mA}^{*1}$
C to E diode forward voltage	$V_D$	—	—	3.0	V	$I_D = 1.5 \text{ A}$
Turn on time	Ton	—	0.5	—	μs	$I_C = 1 \text{ A}$ , $I_{B1} = -I_{B2} = 1 \text{ mA}$
Turn off time	Toff	—	2.0	—	μs	

Note: 1. Pulse test.







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