

# 2SD1970

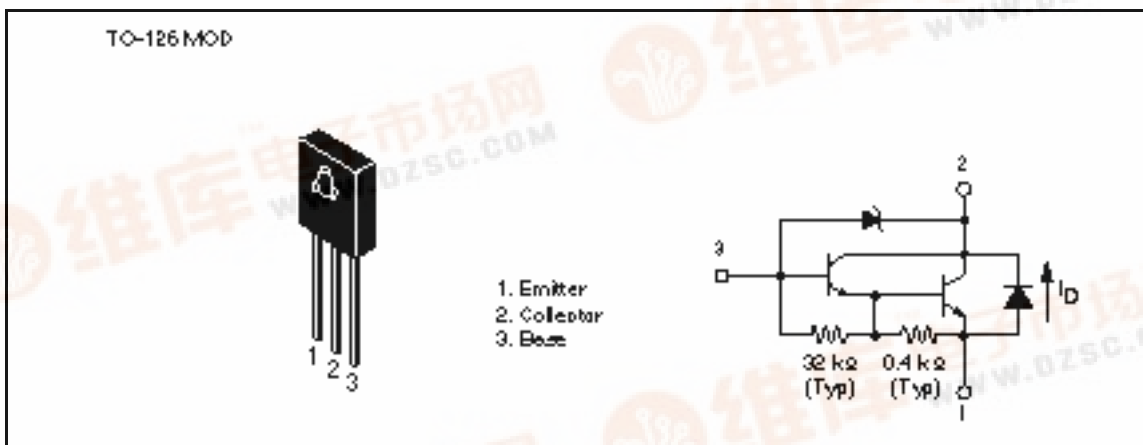
Silicon NPN Epitaxial

# HITACHI

## Application

Low frequency power amplifier

## Outline



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

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	24	V
Collector to emitter voltage	$V_{CEO}$	24	V
Emitter to base voltage	$V_{EBO}$	7	V
Collector current	$I_C$	2	A
Collector peak current	$I_{C(peak)}$	4	A
C to E diode forward current	$I_D$	2	A
Collector power dissipation	$P_C^{*1}$	10	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

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

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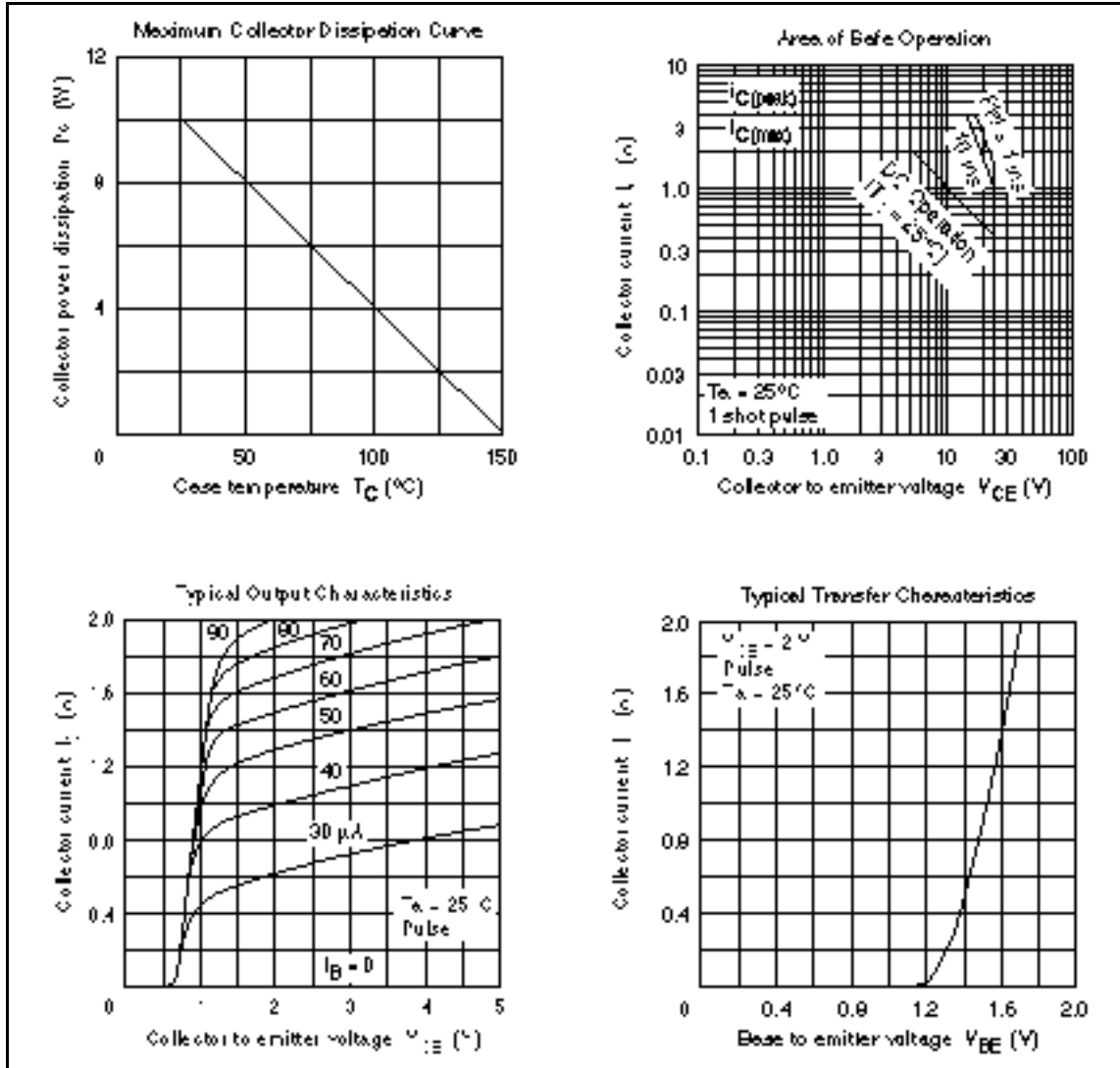
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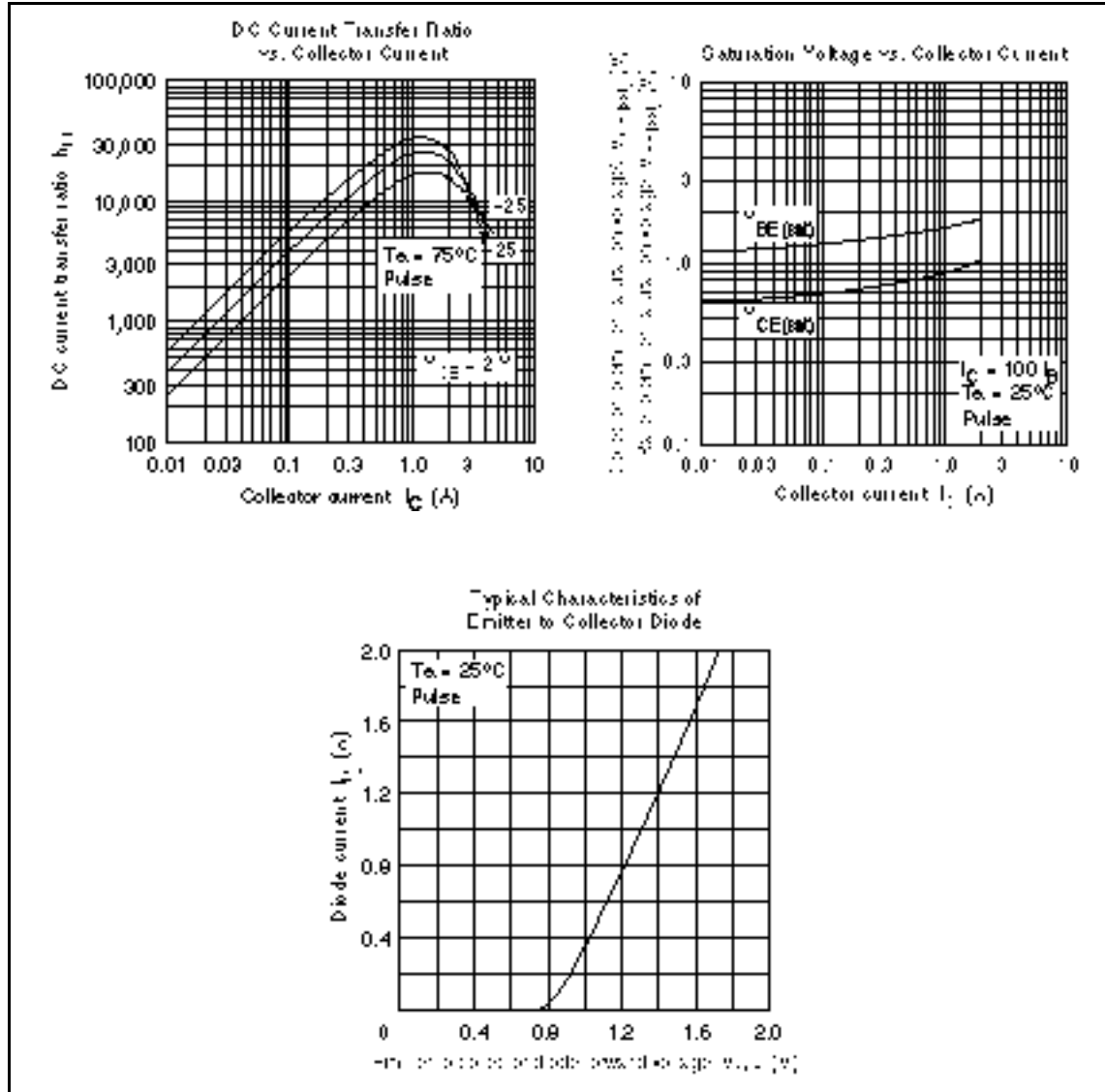
### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CEO}$	24	—	32	V	$I_C = 1 \text{ mA}, I_E = 0$
Collector to emitter sustain voltage	$V_{CEO(sus)}$	25	—	33	V	$I_C = 1 \text{ A}, L = 20 \text{ mH}, R_{BE} =$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 5 \text{ mA}, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	1	$\mu\text{A}$	$V_{CB} = 20 \text{ V}, I_E = 0$
	$I_{CEO}$	—	—	5	$\mu\text{A}$	$V_{CE} = 20 \text{ V}, R_{BE} =$
DC current transfer ratio	$h_{FE}$	7000	—	30000		$V_{CE} = 2 \text{ V}, I_C = 0.5 \text{ A}^{*1}$
	$h_{FE}$	2000	—	—	—	$V_{CE} = 2 \text{ V}, I_C = 2 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C = 2 \text{ A}, I_B = 2 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	2.0	V	$I_C = 2 \text{ A}, I_B = 2 \text{ mA}^{*1}$
C to E diode forward voltage	$V_D$	—	—	2.0	V	$I_D = 2 \text{ A}^{*1}$

Note: 1. Pulse test.



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