

# 2SB1401

Silicon PNP Triple Diffused

# HITACHI

ADE-208-875 (Z)

1st. Edition

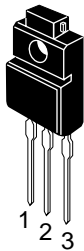
Sep. 2000

## Application

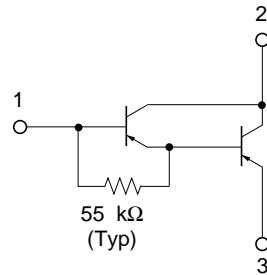
Low frequency power amplifier

## Outline

TO-220FM



1. Base
2. Collector
3. Emitter



**Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{\text{CBO}}$	-300	V
Collector to emitter voltage	$V_{\text{CEO}}$	-300	V
Emitter to base voltage	$V_{\text{EBO}}$	-7	V
Collector current	$I_{\text{C}}$	-0.3	A
Collector peak current	$I_{\text{C(peak)}}$	-0.6	A
Collector power dissipation	$P_{\text{C}}$	2	W
	$P_{\text{C}}^{*1}$	15	
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

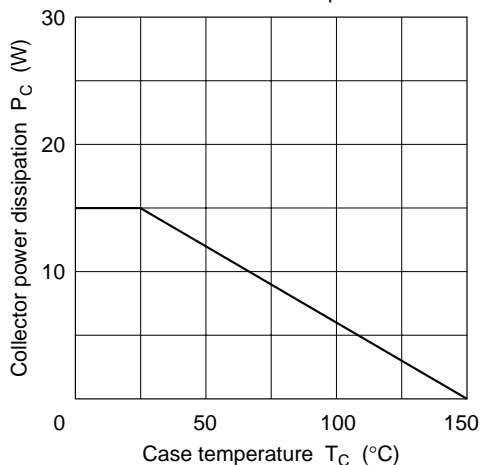
Note: 1. Value at  $T_{\text{C}} = 25^\circ\text{C}$ .

**Electrical Characteristics** ( $T_a = 25^\circ\text{C}$ )

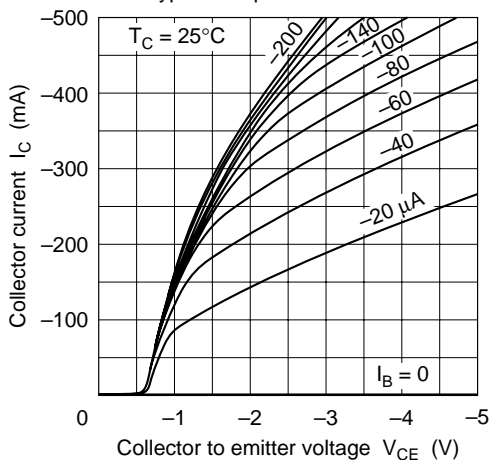
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	-300	—	—	V	$I_{\text{C}} = -1 \text{ mA}, I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	-300	—	—	V	$I_{\text{C}} = -10 \text{ mA}, R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	-7	—	—	V	$I_{\text{E}} = -1 \text{ mA}, I_{\text{C}} = 0$
Collector cutoff current	$I_{\text{CBO}}$	—	—	-10	$\mu\text{A}$	$V_{\text{CB}} = -300 \text{ V}, I_{\text{E}} = 0$
	$I_{\text{CEO}}$	—	—	-10		$V_{\text{CE}} = -60 \text{ V}, R_{\text{BE}} = \infty$
	$I_{\text{EBO}}$	—	—	-10		$V_{\text{EB}} = -5 \text{ V}, I_{\text{C}} = 0$
DC current transfer ratio	$h_{\text{FE1}}$	1000	—	—		$V_{\text{CE}} = -1.5 \text{ V}, I_{\text{C}} = -20 \text{ mA}^{*1}$
	$h_{\text{FE2}}$	1500	—	—		$V_{\text{CE}} = -1.5 \text{ V}, I_{\text{C}} = -100 \text{ mA}^{*1}$
Collector to emitter saturation voltage	$V_{\text{CE(sat)}}$	—	—	-1.5	V	$I_{\text{C}} = -100 \text{ mA}, I_{\text{B}} = -0.2 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{\text{BE(sat)}}$	—	—	-2.0	V	$I_{\text{C}} = -100 \text{ mA}, I_{\text{B}} = -0.2 \text{ mA}^{*1}$

Note: 1. Pulse test.

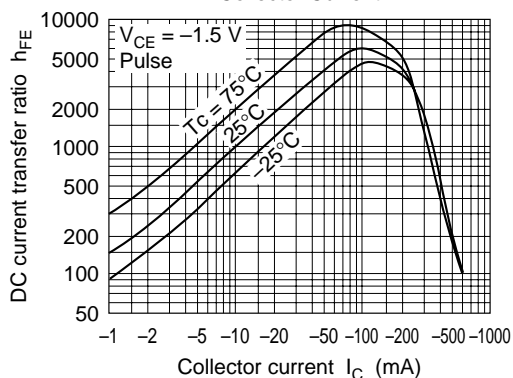
Maximum Collector Dissipation Curve



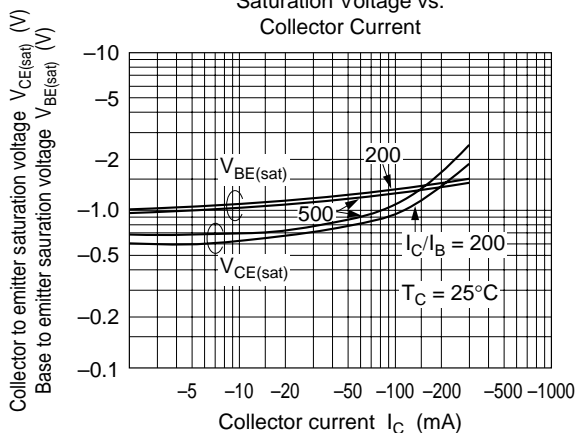
Typical Output Characteristics



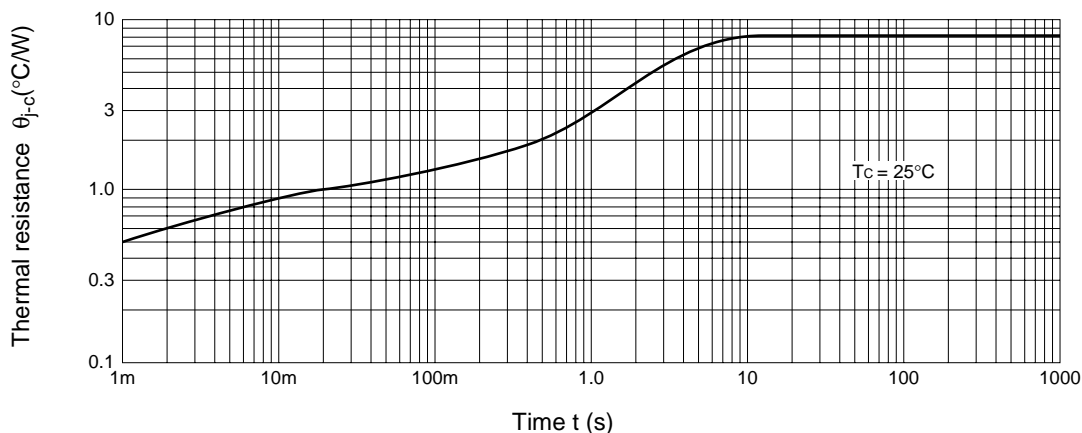
DC Current Transfer Ratio vs. Collector Current



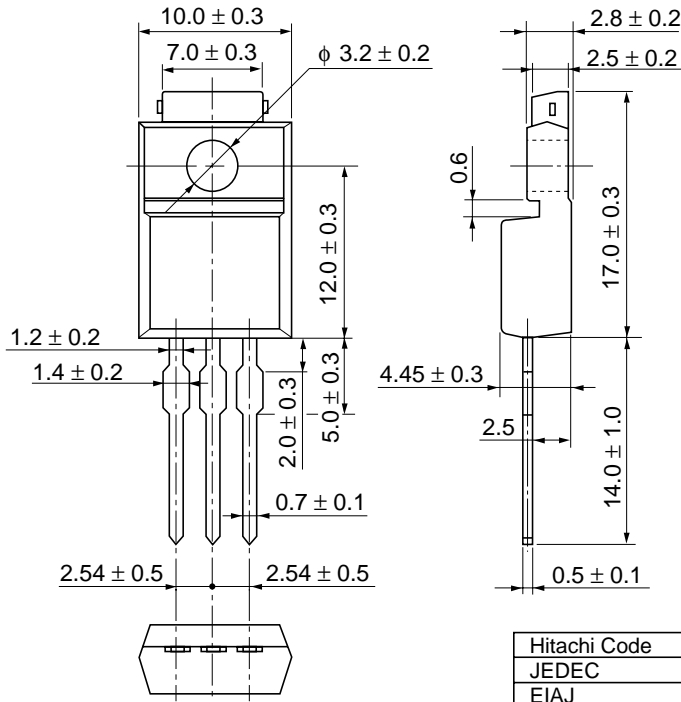
Saturation Voltage vs. Collector Current



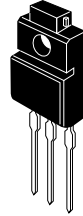
Transient Thermal Resistance



## Package Dimensions



Unit: mm



Hitachi Code	TO-220FM
JEDEC	—
EIAJ	Conforms
Mass (reference value)	1.8 g

## Cautions

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