

2SB859

Silicon PNP Triple Diffused

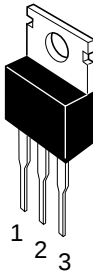
HITACHI

Application

Low frequency power amplifier complementary pair with 2SD1135

Outline

TO-220AB



1. Base
2. Collector (Flange)
3. Emitter

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

Item	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	-100	V
Collector to emitter voltage	V_{CEO}	-80	V
Emitter to base voltage	V_{EBO}	-5	V
Collector current	I_{C}	-4	A
Collector peak current	$I_{\text{C(peak)}}$	-8	A
Collector power dissipation	P_{C}^{*1}	40	W
Junction temperature	T_{j}	150	$^{\circ}\text{C}$
Storage temperature	T_{stg}	-45 to +150	$^{\circ}\text{C}$

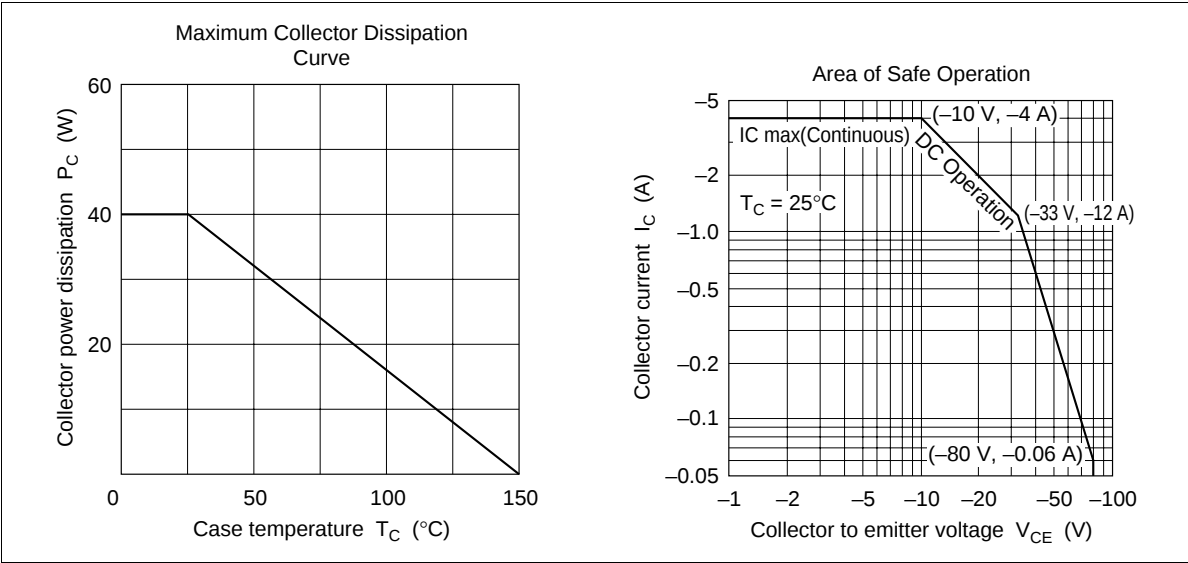
Note: 1. Value at $T_{\text{C}} = 25^{\circ}\text{C}$

Electrical Characteristics (Ta = 25°C)

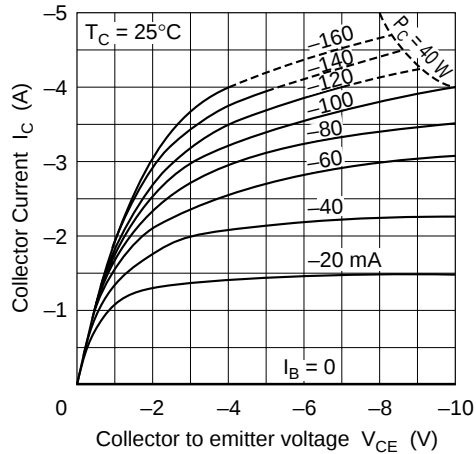
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-80	—	—	V	$I_C = -50\text{ mA}$, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -10\text{ }\mu\text{A}$, $I_C = 0$
Collector cutoff current	I_{CBO}	—	—	-0.1	mA	$V_{CB} = -80\text{ V}$, $I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	60	—	200		$V_{CE} = -5\text{ V}$, $I_C = -1\text{ A}^{*2}$
	h_{FE2}	35	—	—		$V_{CE} = -5\text{ V}$, $I_C = -0.1\text{ A}^{*2}$
Base to emitter voltage	V_{BE}	—	—	-1.5	V	$V_{CE} = -5\text{ V}$, $I_C = -1\text{ A}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-2	V	$I_C = -2\text{ A}$, $I_B = -0.2\text{ A}^{*2}$
Gain bandwidth product	f_T	—	20	—	MHz	$V_{CE} = -5\text{ V}$, $I_C = -0.5\text{ A}^{*2}$
Collector output capacitance	C_{ob}	—	75	—	pF	$V_{CB} = -20\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$

Notes: 1. The 2SB859 is grouped by h_{FE1} as follows.
2. Pulse test

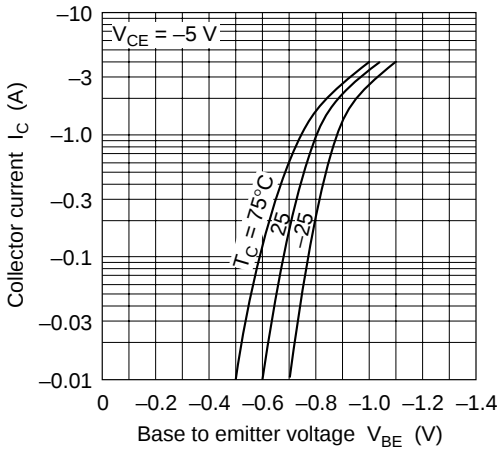
B	C
60 to 120	100 to 200



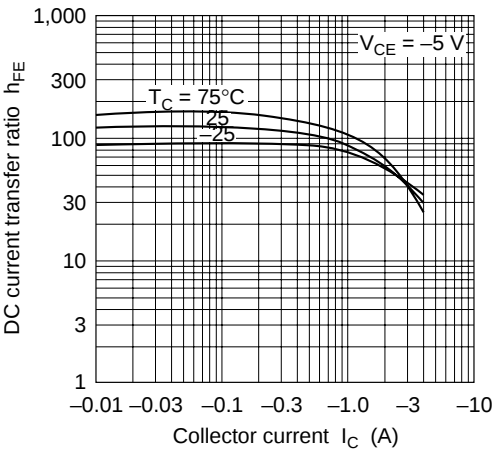
Typical Output Characteristics



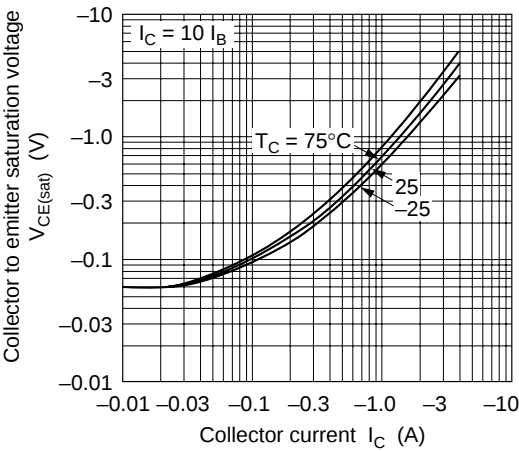
Typical Transfer Characteristics

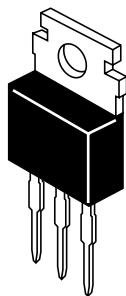
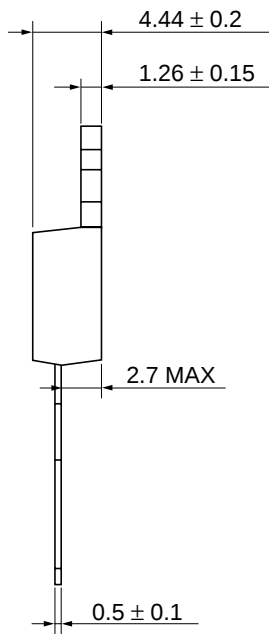
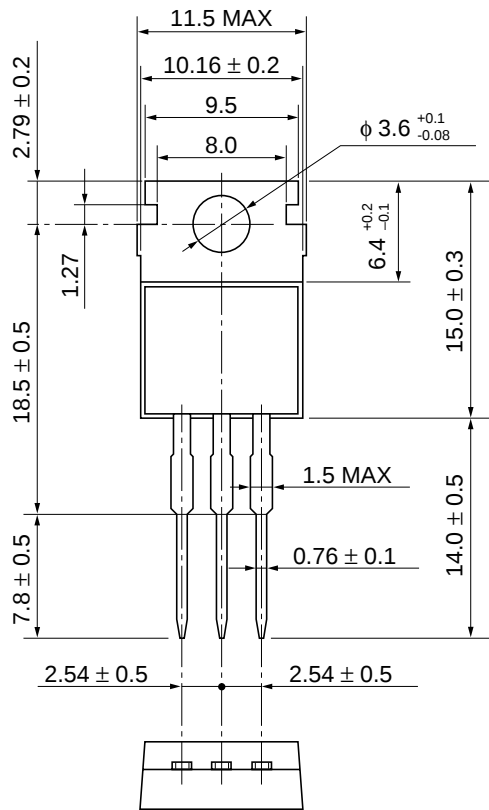


DC Current Transfer Ratio vs. Collector Current



Collector to Emitter Saturation Voltage vs. Collector Current





Hitachi Code	TO-220AB
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	1.8 g

Cautions

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