
2SD669, 2SD669A

Silicon NPN Epitaxial

HITACHI

ADE-208-899 (Z)

1st. Edition

Sep. 2000

Application

Low frequency power amplifier complementary pair with 2SB649/A

Outline

TO-126 MOD



1. Emitter
2. Collector
3. Base

2SD669, 2SD669A

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings		Unit
		2SD669	2SD669A	
Collector to base voltage	V_{CBO}	180	180	V
Collector to emitter voltage	V_{CEO}	120	160	V
Emitter to base voltage	V_{EBO}	5	5	V
Collector current	I_C	1.5	1.5	A
Collector peak current	$I_{C(peak)}$	3	3	A
Collector power dissipation	P_C	1	1	W
	P_C^{*1}	20	20	W
Junction temperature	T_j	150	150	°C
Storage temperature	T_{stg}	−55 to +150	−55 to +150	°C

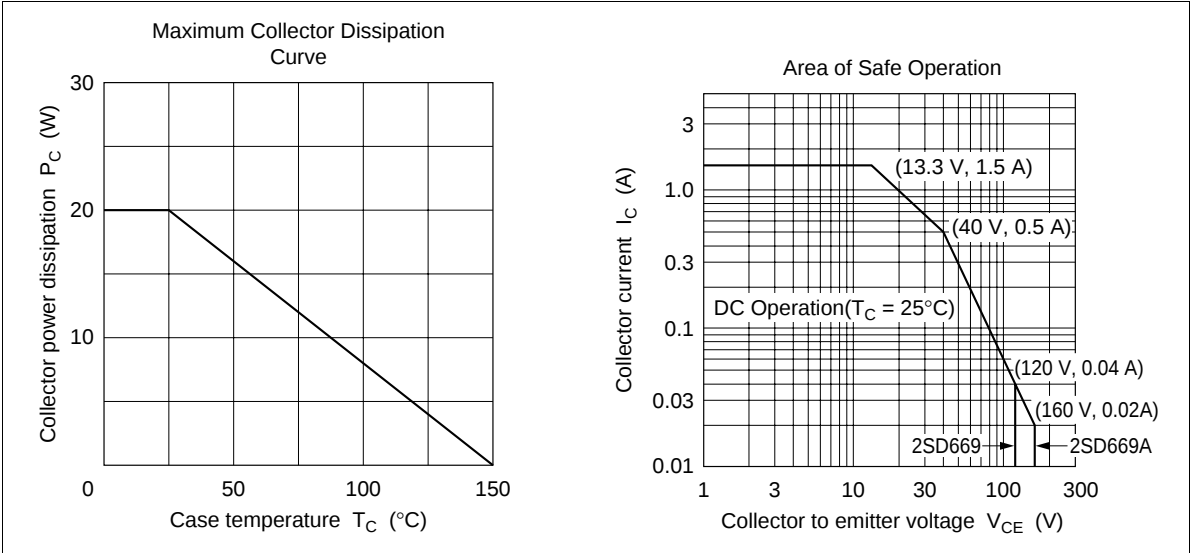
Note: 1. Value at $T_c = 25^{\circ}C$.

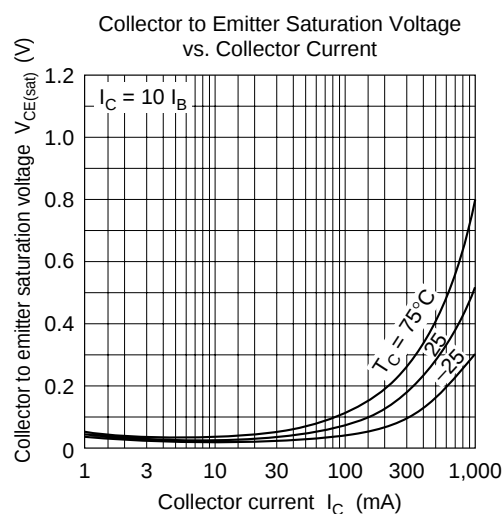
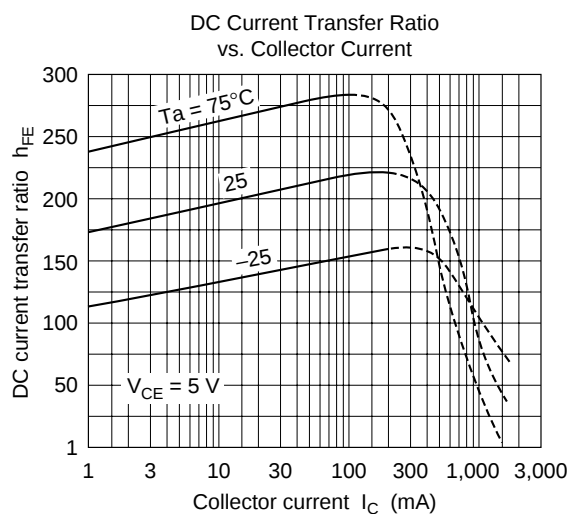
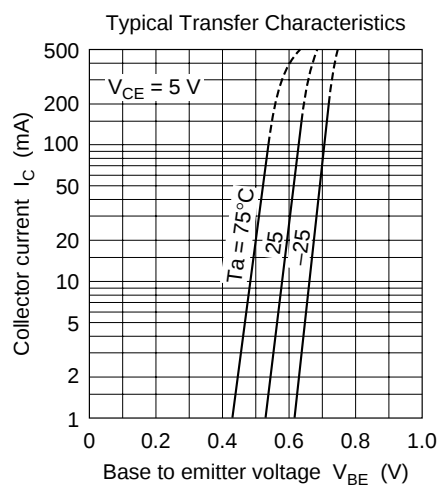
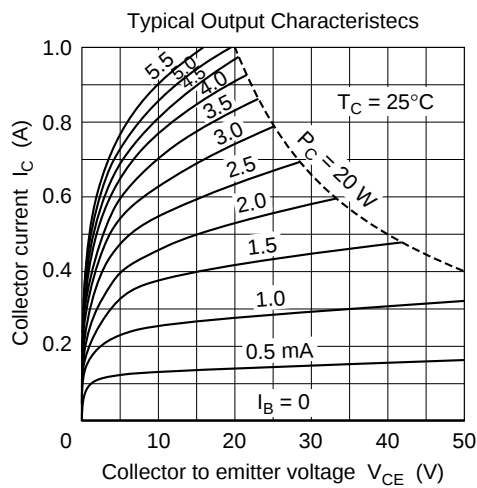
Electrical Characteristics (Ta = 25°C)

Item	Symbol	2SD669			2SD669A			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	180	—	—	180	—	—	V	$I_C = 1\text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	160	—	—	V	$I_C = 10\text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	5	—	—	V	$I_E = 1\text{ mA}, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	10	—	—	10	μA	$V_{CB} = 160\text{ V}, I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	60	—	320	60	—	200		$V_{CE} = 5\text{ V}, I_C = 150\text{ mA}^{*2}$
	h_{FE2}	30	—	—	30	—	—		$V_{CE} = 5\text{ V}, I_C = 500\text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1	—	—	1	V	$I_C = 500\text{ mA}, I_B = 50\text{ mA}^{*2}$
Base to emitter voltage	V_{BE}	—	—	1.5	—	—	1.5	V	$V_{CE} = 5\text{ V}, I_C = 150\text{ mA}^{*2}$
Gain bandwidth product	f_T	—	140	—	—	140	—	MHz	$V_{CE} = 5\text{ V}, I_C = 150\text{ mA}^{*2}$
Collector output capacitance	Cob	—	14	—	—	14	—	pF	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$

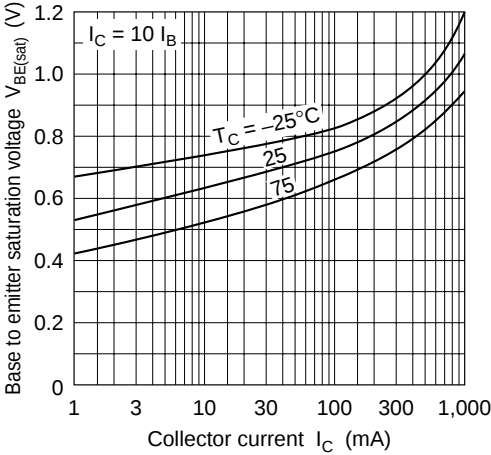
Notes: 1. The 2SD669 and 2SD669A are grouped by h_{FE1} as follows.
2. Pulse test.

	B	C	D
2SD669	60 to 120	100 to 200	160 to 320
2SD669A	60 to 120	100 to 200	—

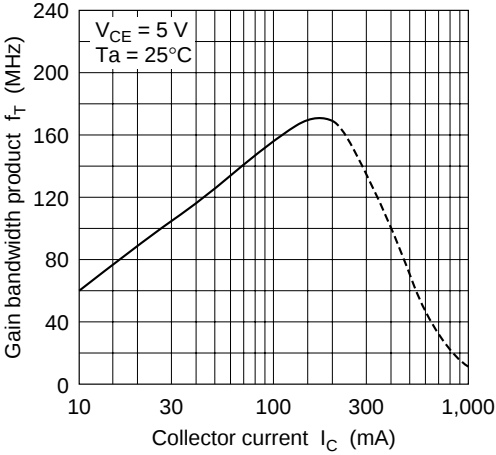




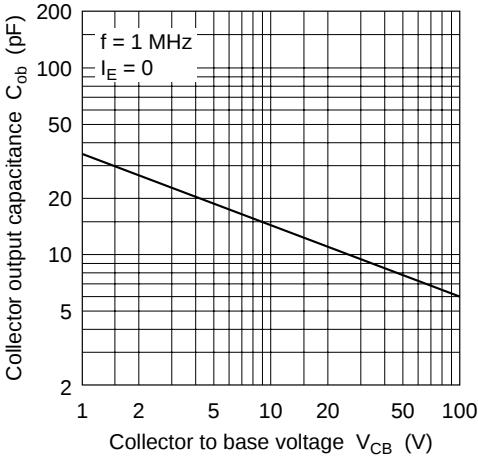
Base to Emitter Saturation Voltage
vs. Collector Current



Gain Bandwidth Product
vs. Collector Current

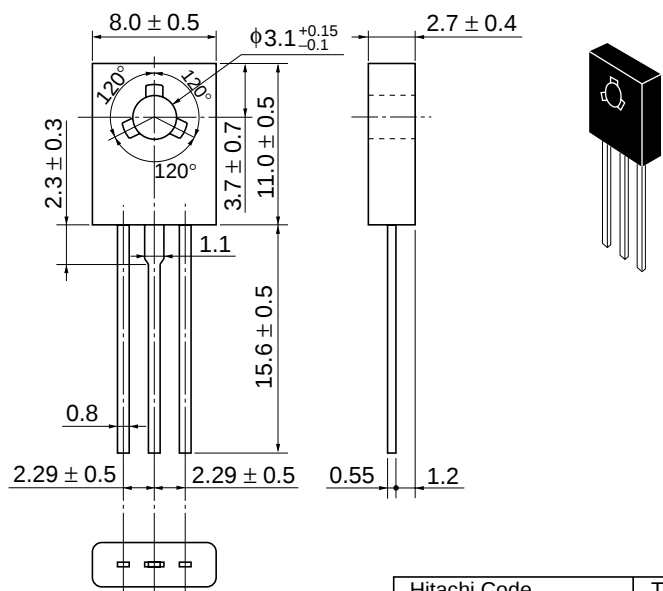


Collector Output Capacitance
vs. Collector to Base Voltage



Package Dimensions

Unit: mm



Hitachi Code	TO-126 Mod
JEDEC	—
EIAJ	—
Mass (reference value)	0.67 g

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