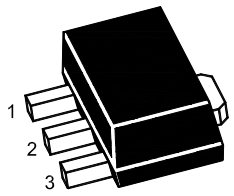
Silicon NPN Epitaxial

Application

- Low frequency power amplifier
- Complementary pair with 2SB1002



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	100	V
Collector to emitter voltage	V_{CEO}	50	V
Emitter to base voltage	V_{EBO}	6	V
Collector current	I_C	1	A
Collector peak current	$i_{C(peak)}$ *1	1.5	A
Collector power dissipation	P_C*2	1	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. PW ≤ 10 ms, Duty cycle ≤ 20%
2. Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)

Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	100	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	50	—	—	V	I_C = 1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	6	—	—	V	I_E = 10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	0.1	µA	V_{CB} = 80 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	0.1	µA	V_{EB} = 4 V, I_C = 0
DC current transfer ratio	h_{FE}*1	160	—	500		V_{CE} = 2 V, I_C = 0.1 A
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	I_C = 1 A, I_B = 0.1 A, Pulse
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	1.2	V	I_C = 1 A, I_B = 0.1 A, Pulse
Gain bandwidth product	f_T	—	100	—	MHz	V_{CE} = 2 V, I_C = 10 mA, Pulse
Collector output capacitance	Cob	—	20	—	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz

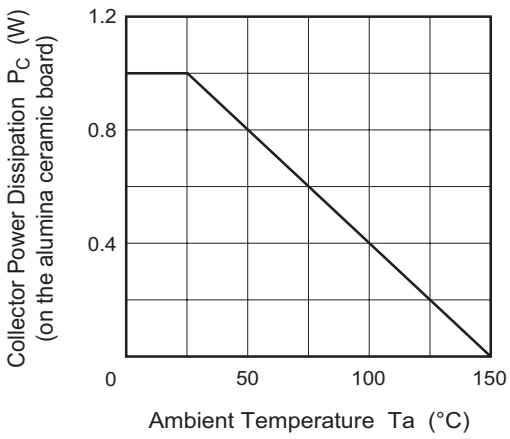
Note: 1. The 2SD1368 is grouped by h_{FE} as follows.

Mark	CB	CC
h_{FE}	160 to 320	250 to 500

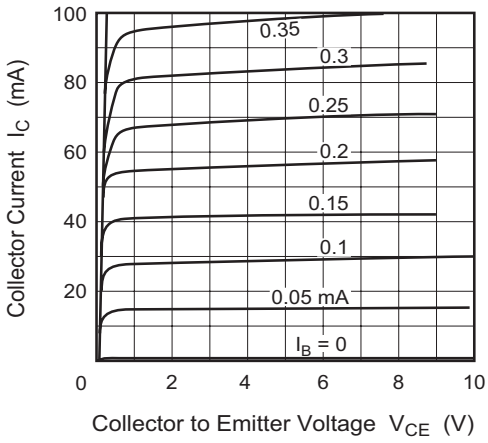
2SD1368

Main Characteristics

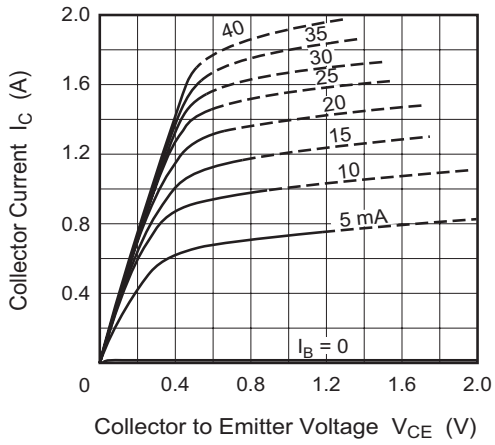
Maximum Collector Dissipation Curve



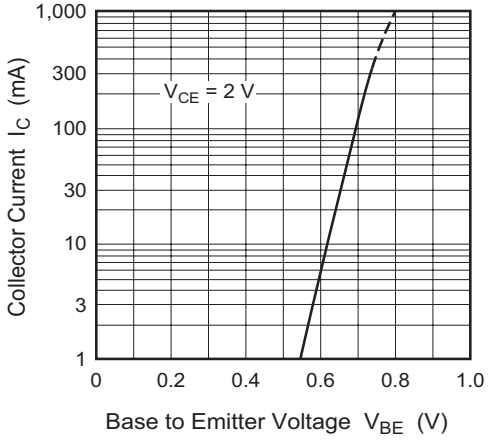
Typical Output Characteristics



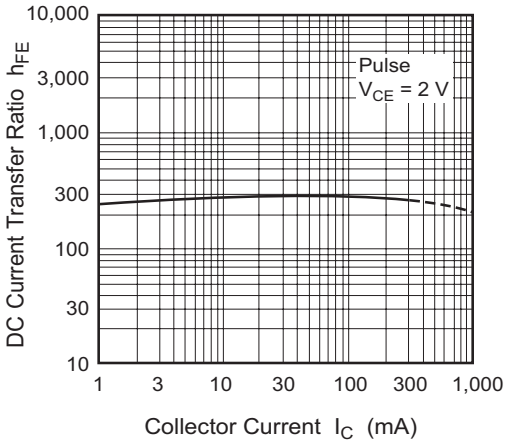
Typical Output Characteristics



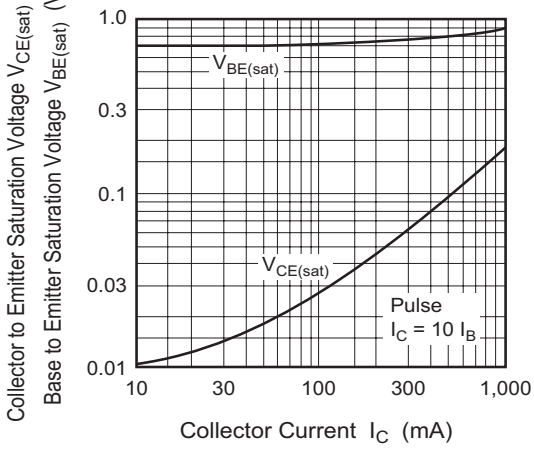
Typical Transfer Characteristics



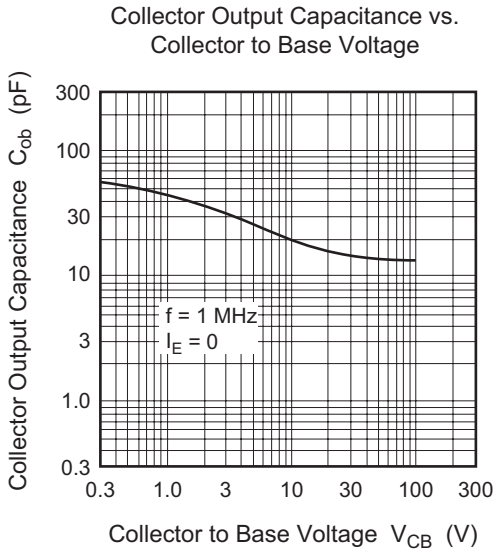
DC Current Transfer Ratio vs. Collector Current



Saturation Voltage vs. Collector Current



2SD1368


Collector Output Capacitance vs.
Collector to Base Voltage
Collector Output Capacitance C_{ob} (pF)
300
100
30
10
3
1.0
0.3
f = 1 MHz
I_E = 0
0.3
1.0
3
10
30
100
300
Collector to Base Voltage V_{CB} (V)