2SC1162

Silicon NPN Epitaxial

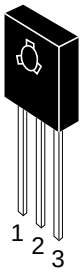
HITACHI

Application

Low frequency power amplifier complementary pair with 2SA715

Outline

TO-126 MOD



1. Emitter
2. Collector
3. Base

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	35	V
Collector to emitter voltage	V_{CEO}	35	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	2.5	A
Collector peak current	$I_{C(peak)}$	3	A
Collector power dissipation	P_C	0.75	W
	P_C*[1]	10	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

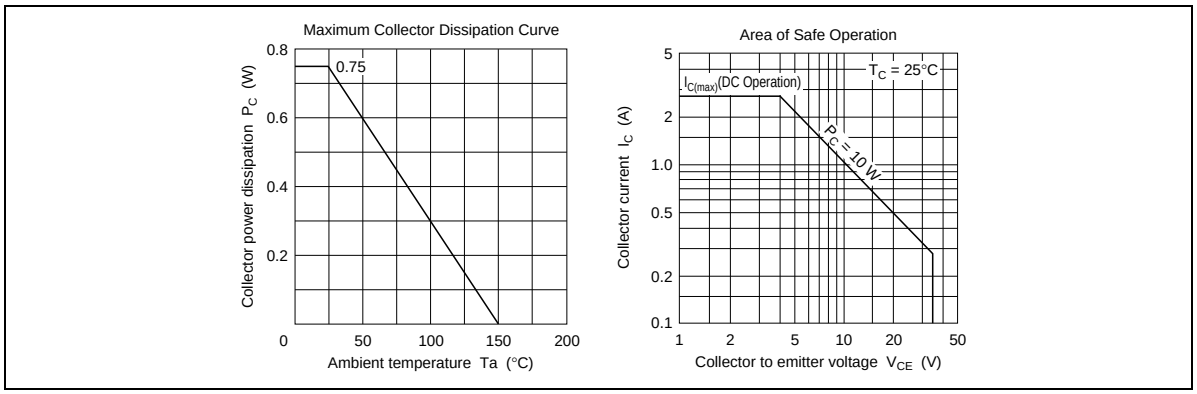
Note: 1. Value at T_C = 25°C.

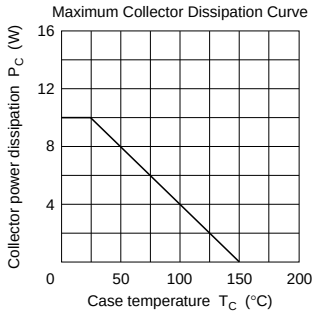
Electrical Characteristics (Ta = 25°C)

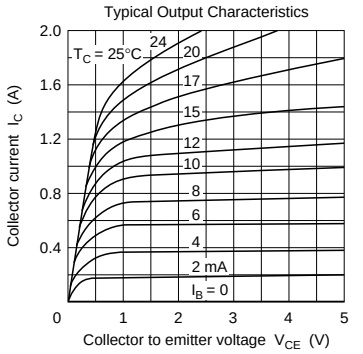
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	35	—	—	V	I_C = 1 mA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	35	—	—	V	I_C = 10 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	I_E = 1 mA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	20	µA	V_{CB} = 35 V, I_E = 0
DC current transfer ratio	h_{FE}*[1]	60	—	320		V_{CE} = 2 V, I_C = 0.5 A
	h_{FE}	20	—	—		V_{CE} = 2 V, I_C = 1.5 A (pulse test)
Base to emitter voltage	V_{BE}	—	0.93	1.5	V	V_{CE} = 2 V, I_C = 1.5 A (pulse test)
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	0.5	1.0	V	I_C = 2 A, I_B = 0.2 A (pulse test)
Gain bandwidth product	f_T	—	180	—	MHz	V_{CE} = 2 V, I_C = 0.2 A

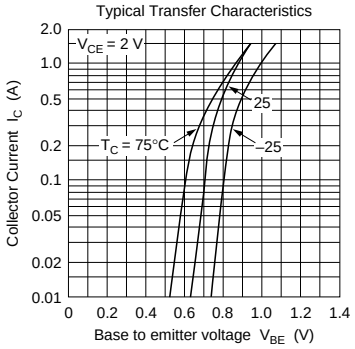
Note: 1. The 2SC1162 is grouped by h_{FE} as follows.

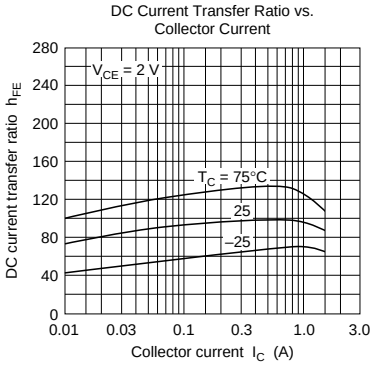
B	C	D
60 to 120	100 to 200	160 to 320




Maximum Collector Dissipation Curve
Collector power dissipation P_C (W)
16
12
8
4
0
50
100
150
200
Case temperature T_C (°C)


Typical Output Characteristics
T_C = 25°C
24
20
17
15
12
10
8
6
4
2 mA
I_B = 0
Collector current I_C (A)
2.0
1.6
1.2
0.8
0.4
0
1
2
3
4
5
Collector to emitter voltage V_{CE} (V)


Typical Transfer Characteristics
V_{CE} = 2 V
T_C = 75°C
25
–25
Collector Current I_C (A)
2.0
1.0
0.5
0.2
0.1
0.05
0.02
0.01
0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
Base to emitter voltage V_{BE} (V)


DC Current Transfer Ratio vs.
Collector Current
V_{CE} = 2 V
T_C = 75°C
25
–25
DC current transfer ratio h_{FE}
280
240
200
160
120
80
40
0
0.01
0.03
0.1
0.3
1.0
3.0
Collector current I_C (A)

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