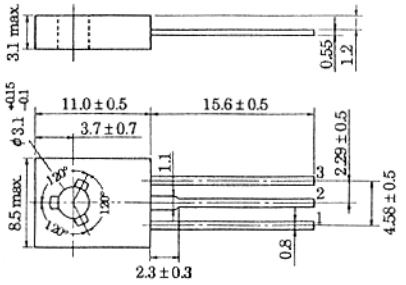
HITACHI

2SD1177

SILICON NPN EPITAXIAL

LOW FREQUENCY POWER AMPLIFIER
COMPLEMENTARY PAIR WITH 2SB874



1. Emitter
2. Collector
3. Base

(Dimensions in mm)

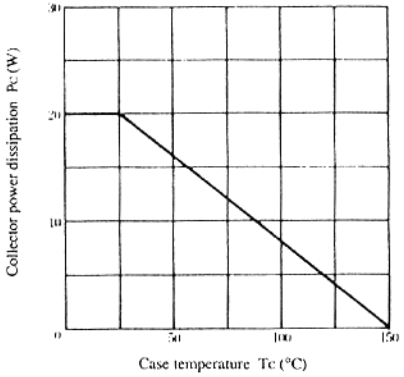
(JEDEC TO-126 MOD)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SD1177	Unit
Collector to base voltage	V_{CBO}	100	V
Collector to emitter voltage	V_{CEO}	60	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	2	A
Collector peak current	$i_{C(peak)}$	3	A
Collector power dissipation	P_C*	20	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

* Value at T_C = 25°C.

MAXIMUM COLLECTOR DISSIPATION CURVE



■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	$V_{(BR)CBO}$	I_C = 1mA, I_E = 0	100	—	—	V
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 10mA, R_{BE} = ∞	60	—	—	V
Emitter to base breakdown voltage	$V_{(BR)EBO}$	I_E = 1mA, I_C = 0	5	—	—	V
Collector cutoff current	I_{CBO}	V_{CB} = 80V, I_E = 0	—	—	1	μA
Emitter cutoff current	I_{EBO}	V_{EB} = 5V, I_C = 0	—	—	1	μA
DC current transfer ratio	h_{FE1}*	V_{CE} = 5V, I_C = 0.5A**	60	—	200	
	h_{FE2}	V_{CE} = 5V, I_C = 2A**	40	—	—	
Base to emitter voltage	V_{BE}	V_{CE} = 5V, I_C = 2A**	—	—	1.4	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 1.5V, I_B = 0.15A**	—	0.35	1.0	V
Gain bandwidth product	f_T	V_{CE} = 5V, I_C = 0.5A**	—	230	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	50	—	pF

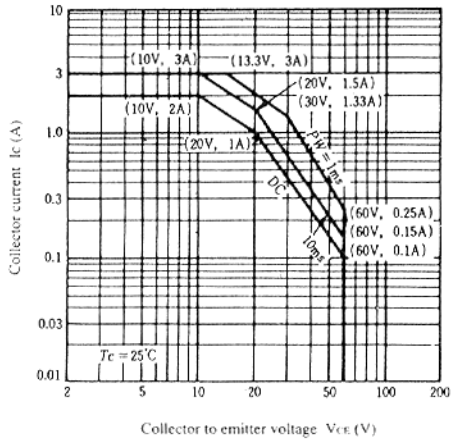
* The 2SD1177 is grouped by h_{FE1} as follows.

** Pulse Test.

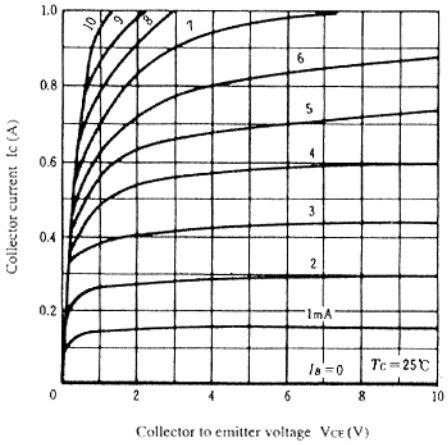
B	C
60 to 120	100 to 200

2SD1177

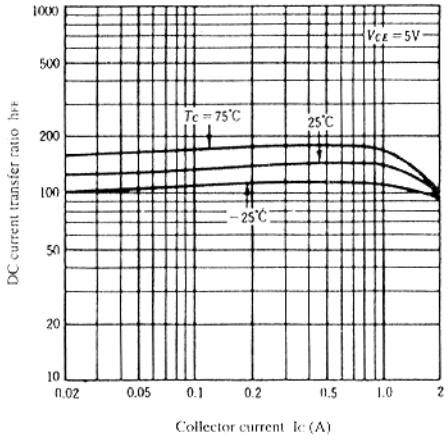
AREA OF SAFE OPERATION



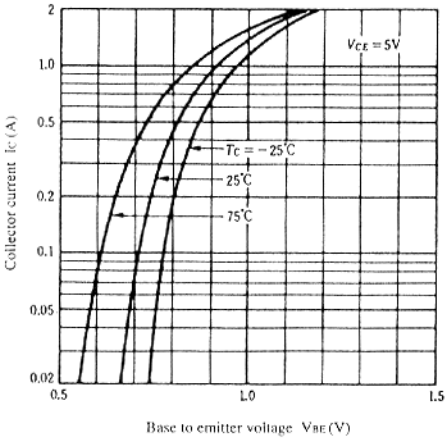
TYPICAL OUTPUT CHARACTERISTICS



DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



TYPICAL TRANSFER CHARACTERISTICS



COLLECTOR TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT