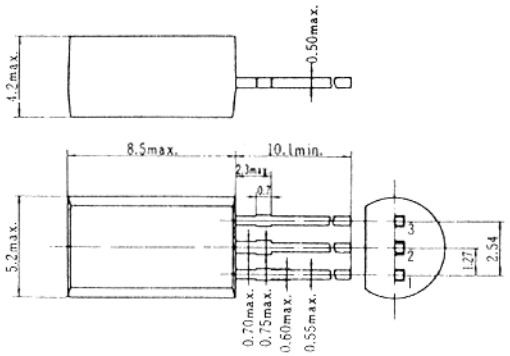
HITACHI

2SB647, 2SB647A

SILICON PNP EPITAXIAL

LOW FREQUENCY POWER AMPLIFIER
Complementary pair with 2SD667/A



1. Emitter
2. Collector
3. Base

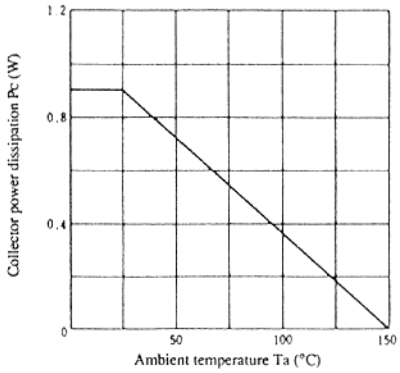
(Dimensions in mm)

(JEDEC TO-92 MOD.)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SB647	2SB647A	Unit
Collector to base voltage	V_{CBO}	−120	−120	V
Collector to emitter voltage	V_{CEO}	−80	−100	V
Emitter to base voltage	V_{EBO}	−5	−5	V
Collector current	I_C	−1	−1	A
Collector peak current	$i_{C(peak)}$	−2	−2	A
Collector power dissipation	P_C	0.9	0.9	W
Junction temperature	T_j	150	150	°C
Storage temperature	T_{stg}	−55 to +150	−55 to +150	°C

MAXIMUM COLLECTOR DISSIPATION CURVE



■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	2SB647			2SB647A			Unit
			min.	typ.	max.	min.	typ.	max.	
Collector to base breakdown voltage	$V_{(BR)CBO}$	I_C = −10μA, I_E = 0	−120	—	—	−120	—	—	V
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	I_C = −1mA, R_{BE} = ∞	−80	—	—	−100	—	—	V
Emitter to base breakdown voltage	$V_{(BR)EBO}$	I_E = −10μA, I_C = 0	−5	—	—	−5	—	—	V
Collector cutoff current	I_{CBO}	V_{CB} = −100V, I_E = 0	—	—	−10	—	—	−10	μA
DC current transfer ratio	h_{FE1}	V_{CE} = −5V, I_C = −150mA	60	—	320	60	—	200	
	h_{FE2}	V_{CE} = −5V, I_C = −500mA**	30	—	—	30	—	—	
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = −500mA, I_B = −50mA	—	—	−1	—	—	−1	V
Base to emitter voltage	V_{BE}	V_{CE} = −5V, I_C = −150mA	—	—	−1,5	—	—	−1.5	V
Gain bandwidth product	f_T	V_{CE} = −5V, I_C = −150mA,	—	140	—	—	140	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = −10V, I_E = 0, f = 1MHz	—	20	—	—	20	—	pF

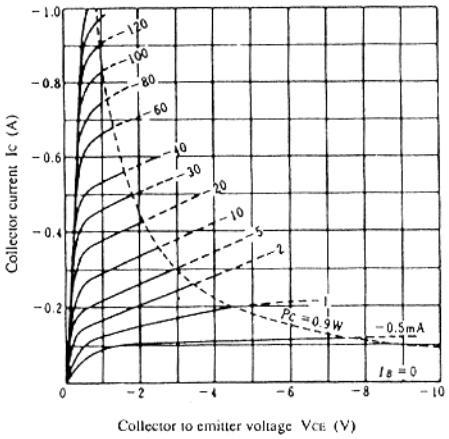
* The 2SB647 and 2SB647A are grouped by h_{FE1} as follows.

** Pulse Test

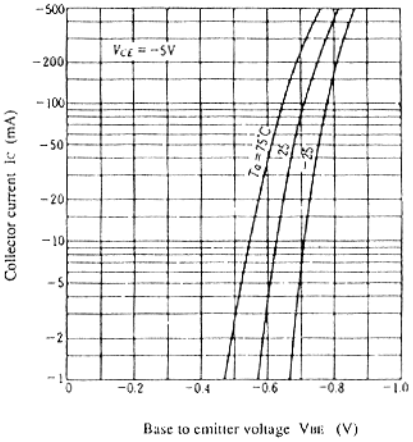
	B	C	D
2SB647	60 to 120	100 to 200	160 to 320
2SB647A	60 to1 20	100 to 200	—

2SB647, 2SB647A

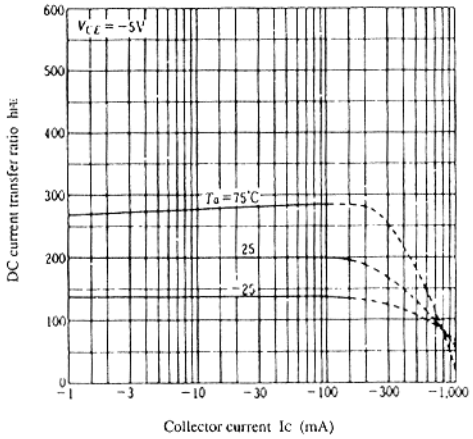
TYPICAL OUTPUT CHARACTERISTICS



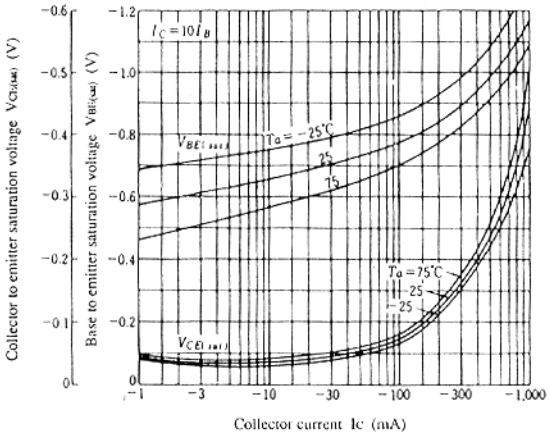
TYPICAL TRANSFER CHARACTERISTICS



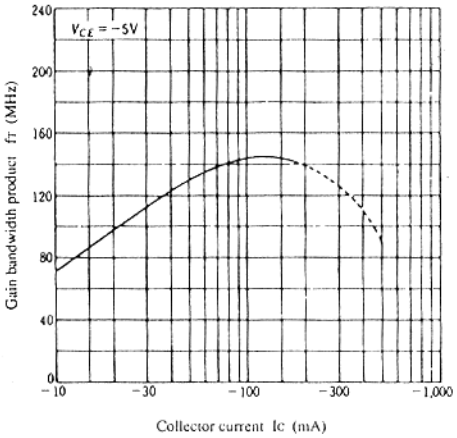
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



SATURATION VOLTAGE VS. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE