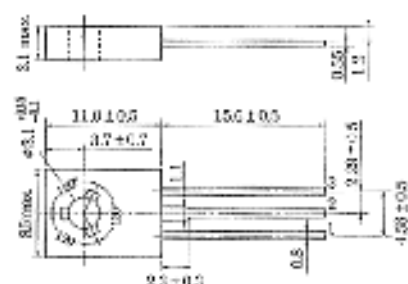


2SB1109, 2SB1110

SILICON PNP EPITAXIAL

LOW FREQUENCY HIGH VOLTAGE AMPLIFIER

COMPLEMENTARY PAIR WITH 2SD1609 AND 2SD1610



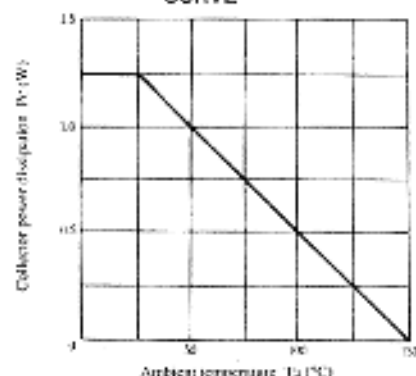
1. Emitter
2. Collector
3. Base

(JEDEC TO-126 MOD.)

■ ABSOLUTE MAXIMUM RATINGS (T_B=25°C)

Item	Symbol	2SB1109	2SB1110	Unit
Collector to base voltage	V_{CB0}	-160	-200	V
Collector to emitter voltage	V_{CE0}	-160	-200	V
Emitter to base voltage	V_{EB0}	5	5	V
Collector current	I_C	-100	-100	mA
Collector power dissipation	P_C	1.35	1.35	W
Junction temperature	T_j	150	150	°C
Storage temperature	T_{stg}	-45 to +150	-45 to +150	°C

MAXIMUM COLLECTOR DISSIPATION
CURVE



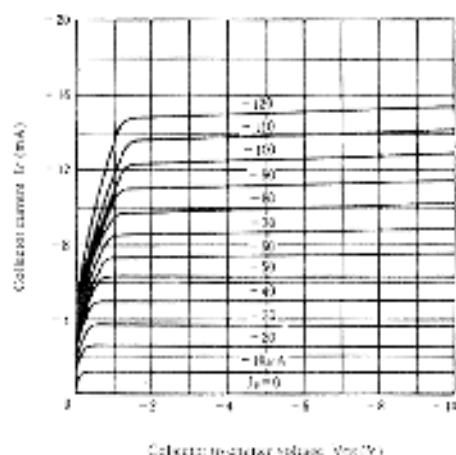
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	2SB1109			2SB1110			Unit
			min.	typ.	max.	min.	typ.	max.	
Collector to base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-160	—	—	-200	—	—	V
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-160	—	—	-200	—	—	V
Emitter to base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5	—	—	-5	—	—	V
Collector cutoff current	I_{CBO}	$V_{CB} = -140V, I_E = 0$	—	—	-10	—	—	—	μA
		$V_{CB} = -160V, I_E = 0$	—	—	—	—	—	-10	μA
DC current transfer ratio	h_{FE1}^*	$V_{CE} = -5V, I_C = -10mA$	60	—	320	60	—	320	
	h_{FE1}	$V_{CE} = -5V, I_C = -1mA$	30	—	—	30	—	—	
Base to emitter voltage	V_{BE}	$V_{CE} = -5V, I_C = -10mA$	—	—	-1.5	—	—	-1.5	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -30mA, I_E = -5mA$	—	—	-2	—	—	-2	V
Gain bandwidth product	f_T	$V_{CB} = -5V, I_C = -10mA$	—	140	—	—	140	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10V, I_C = 0, f = 1MHz$	—	5.5	—	—	5.5	—	pF

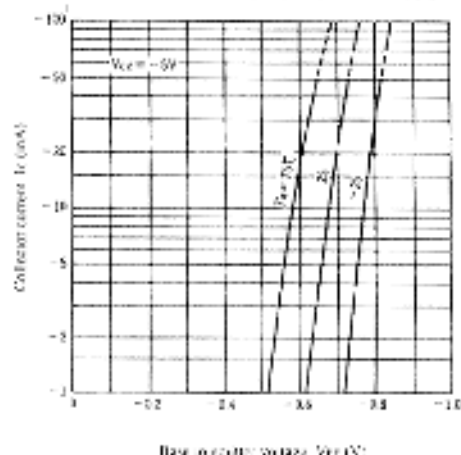
* The 25B1109 and 25B1110 are grouped by IFEI as follows.

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

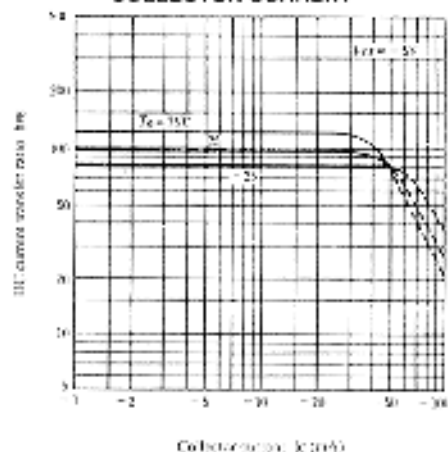
TYPICAL OUTPUT CHARACTERISTICS



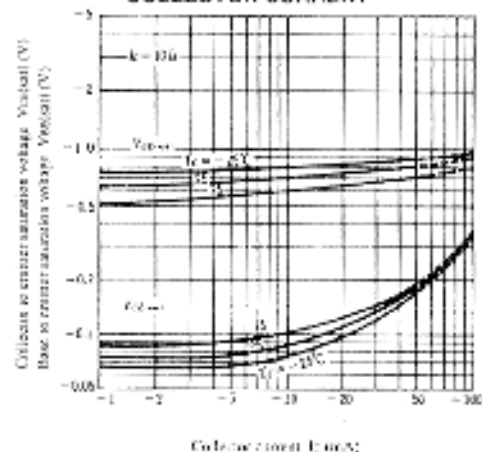
TYPICAL TRANSFER CHARACTERISTICS



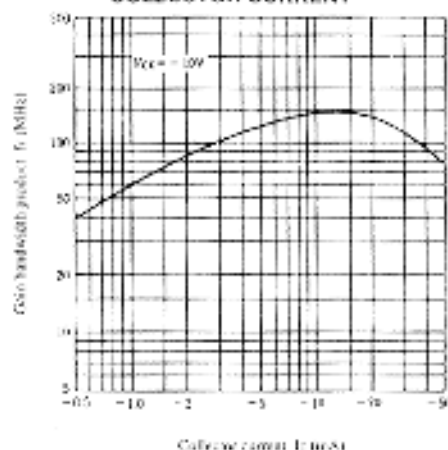
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



SATURATION VOLTAGE VS. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE

