2SA1111, 2SA1112

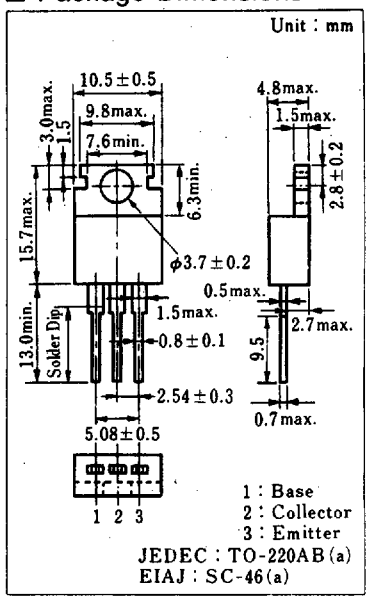
Silicon PNP Epitaxial Planar Type

AF Drivers, High Power Amplifiers
Complementary Pair with 2SC2591, 2SC2592

■ Features

- Very good linearity of DC current gain (h_{FE})
- High transition frequency (f_T)
- 60~100W output driver in complementary pair with 2SC2591, 2SC2592

■ Package Dimensions



■ Absolute Maximum Ratings (Ta=25°C)

Item		Symbol	Value	Unit
Collector-base voltage	2SA1111	V_{CBO}	−150	V
	2SA1112		−180	
Collector-emitter voltage	2SA1111	V_{CEO}	−150	V
	2SA1112		−180	
Emitter-base voltage		V_{EBO}	−5	V
Peak collector current		I_{CP}	−1.5	A
Collector current		I_C	−1	A
Collector power dissipation (Tc=25°C)		P_C	20	W
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55~+150	°C

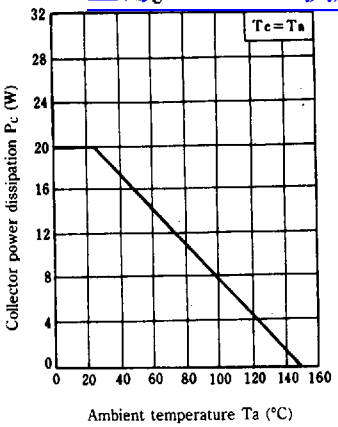
■ Electrical Characteristics (Tc=25°C)

Item		Symbol	Condition	min.	typ.	max.	Unit
Collector-emitter voltage	2SA1111	V_{CEO}	I_C=−100μA, I_B=0	−150			V
	2SA1112			−180			
Emitter-base voltage		V_{EBO}	I_E=−10μA, I_C=0	−5			V
DC current gain		h_{FE1}*	V_{CE}=−10V, I_C=−150 mA	65	160	330	
		h_{FE2}	V_{CE}=−5 V, I_C=−500 mA	50	100		
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=−500 mA, I_B=−50 mA		−0.5	−2.0	V
Base-emitter saturation voltage		$V_{BE(sat)}$	I_C=−500 mA, I_B=−50 mA		−1.0	−2.0	V
Transition frequency		f_T	V_{CB}=−10V, I_E=50mA, f=200MHz		200		MHz
Collector output capacitance		C_{ob}	V_{CB}=−10 V, I_E=0, f=1 MHz		30	50	pF

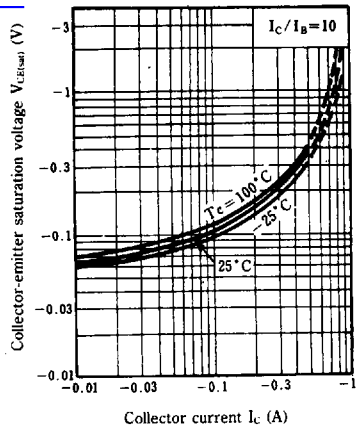
*h_{FE1} Classifications

Class	P	Q	R	S
h_{FE1}	65~110	90~155	130~220	185~330

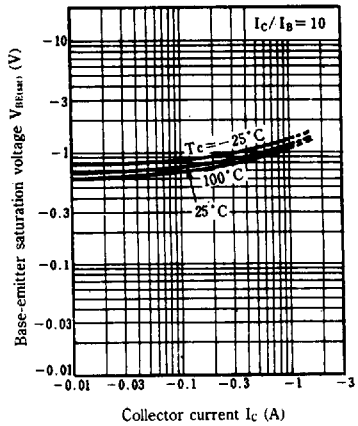
$P_C - Ta$



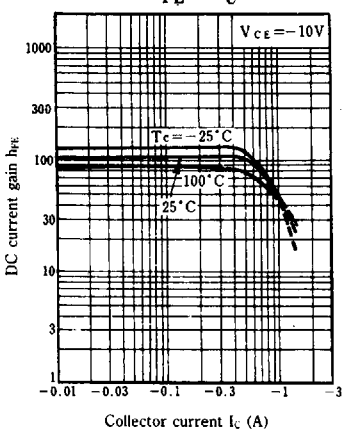
$V_{CE(sat)} - I_C$



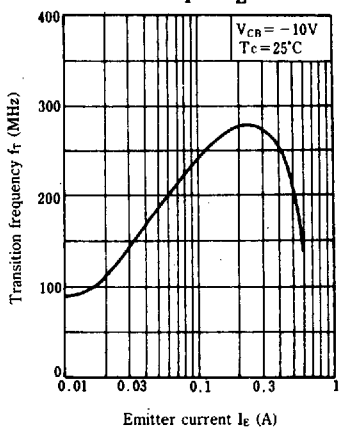
$V_{BE(sat)} - I_C$



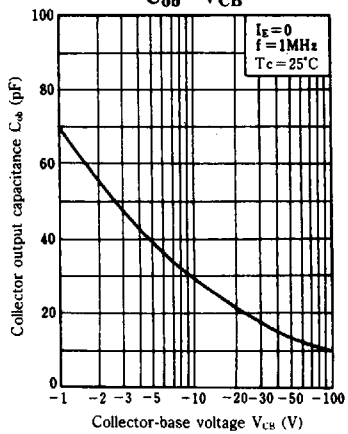
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)