2SB1233, 2SB1233A

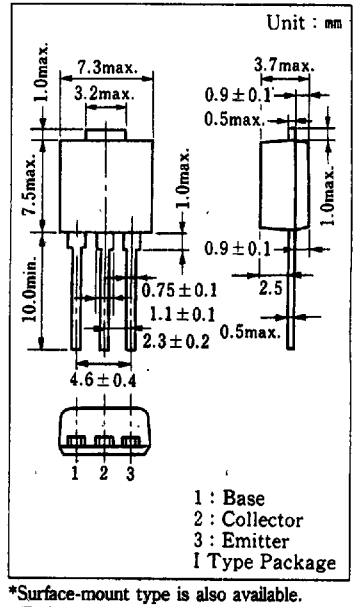
Silicon PNP Epitaxial Planar Type

Power Amplifier

■ Features

- High collector-emitter voltage (V_{CEO})
- Wide area of safety operation (ASO)
- "I Type" package configuration with a cooling fin for direct soldering on PC board of a small-size electronic equipment

■ Package Dimensions



*Surface-mount type is also available. (Refer to p.81.)

■ Absolute Maximum Ratings (Tc=25°C)

Item		Symbol	Value	Unit
Collector-base voltage	2SB1233	V_{CBO}	−200	V
	2SB1233A		−200	
Collector-emitter voltage	2SB1233	V_{CEO}	−150	V
	2SB1233A		−180	
Emitter-base voltage		V_{EBO}	−6	V
Peak collector current		I_{CP}	−2	A
Collector current		I_C	−1	A
Collector power dissipation	Tc=25°C	P_C	15	W
	Ta=25°C		1.3	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55~+150	°C

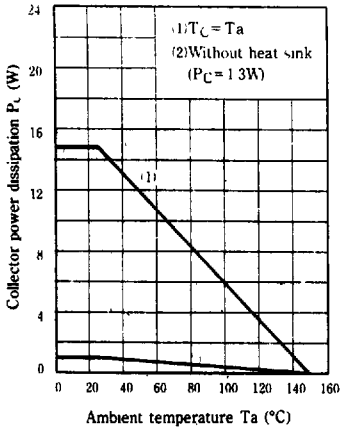
■ Electrical Characteristics (Tc=25°C)

Item		Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current		I_{CBO}	V_{CB}=−200V, I_E=0			−50	μA
Emitter cutoff current		I_{EBO}	V_{EB}=−4V, I_C=0			−50	μA
Collector-emitter voltage	2SB1233	V_{CEO}	I_C=−5mA, I_B=0	−150			V
	2SB1233A			−180			
Emitter-base voltage		V_{EBO}	I_E=−0.5mA, I_C=0	−6			V
DC current gain		h_{FE1}*	V_{CE}=−10V, I_C=−100mA	60		240	
		h_{FE2}	V_{CE}=−10V, I_C=−300mA	50			
Base-emitter voltage		V_{BE}	V_{CE}=−10V, I_C=−300mA			−1	V
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=−500mA, I_B=−50mA			−1	V
Transition frequency		f_T	V_{CE}=−10V, I_C=−100mA, f=1MHz		20		MHz
Collector output capacitance		Cob	V_{CB}=−10V, I_E=0, f=1MHz		35		pF

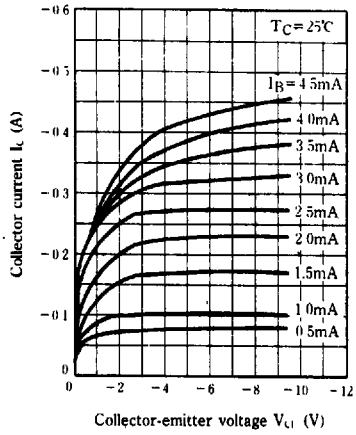
*h_{FE1} Classifications

Class	Q	P
h_{FE1}	60~140	100~240

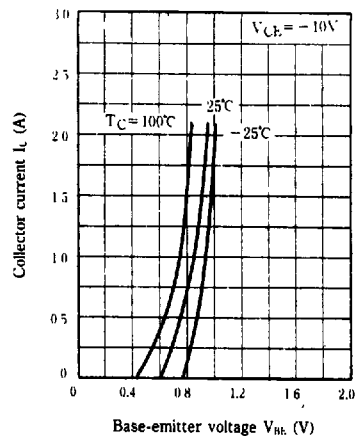
$P_C - Ta$



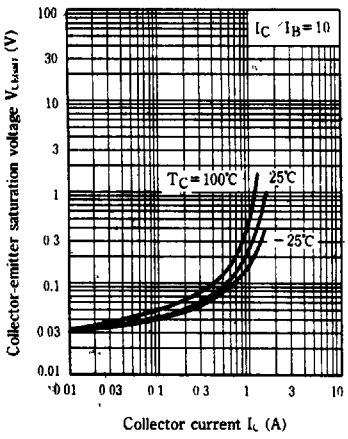
$I_C - V_{CE}$



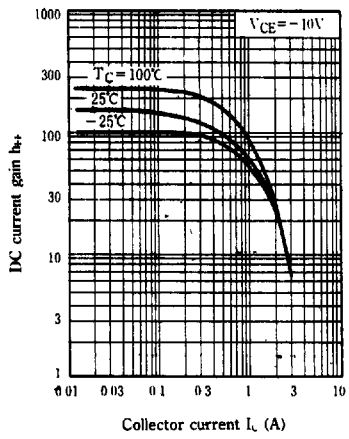
$I_C - V_{BE}$



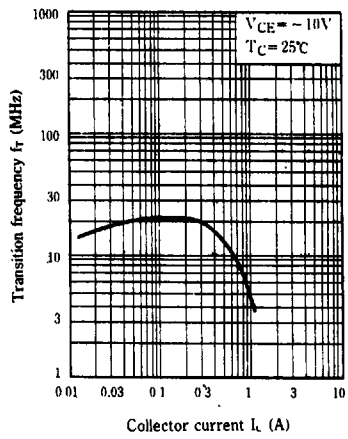
$V_{CE(sat)} - I_C$



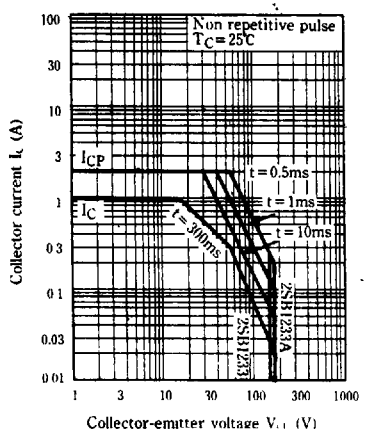
$h_{FE} - I_C$



$f_T - I_C$



Safety operation area-forward bias (ASO)



$R_{th(t)} - t$