

2SB1417, 2SB1417A

Silicon PNP Epitaxial Planar Type

Power Amplifier

Complementary Pair with 2SD2137

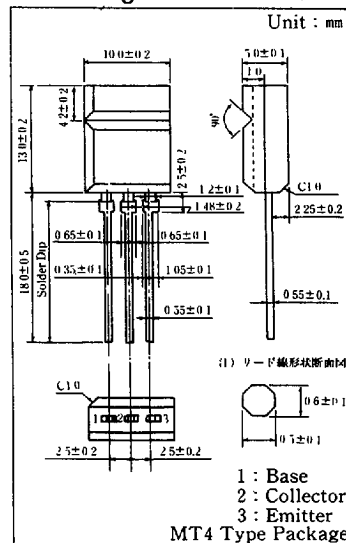
■ Features

- High DC current gain (h_{FE}) and good linearity
- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- Automatic mounting by radial taping is possible.

■ Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Collector-base voltage	2SB1417	V_{CBO}	V
	2SB1417A	-80	
Collector-emitter voltage	2SB1417	V_{CEO}	V
	2SB1417A	-80	
Emitter-base voltage	V_{EBO}	-6	V
Peak collector current	I_{CP}	-5	A
Collector current	I_C	-3	A
Collector power dissipation	$T_c=25^\circ\text{C}$	P_C	W
	$T_a=25^\circ\text{C}$	2.0	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

■ Package Dimensions



■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

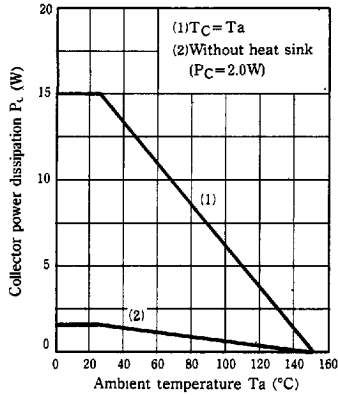
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SB1417	$V_{CE} = -60\text{V}, I_E = 0$			-100	μA
	2SB1417A	$V_{CE} = -80\text{V}, I_B = 0$			-100	
Collector cutoff current	2SB1417	$V_{CE} = -30\text{V}, V_{BE} = 0$			-100	μA
	2SB1417A	$V_{CE} = -60\text{V}, V_{BE} = 0$			-100	
Emitter cutoff current	I_{EBO}	$V_{EB} = -6\text{V}, I_C = 0$			-100	μA
Collector-emitter voltage	2SB1417	$I_C = -30\text{mA}, I_B = 0$	-60			V
	2SB1417A	$I_C = -30\text{mA}, I_B = 0$	-80			
DC current gain	h_{FE1}^*	$V_{CE} = -4\text{V}, I_C = -1\text{A}$	70		250	
	h_{FE2}	$V_{CE} = -4\text{V}, I_C = -3\text{A}$	10			
Base-emitter voltage	V_{BE}	$V_{CE} = -4\text{V}, I_C = -3\text{A}$			-1.8	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3\text{A}, I_B = -0.375\text{A}$			-1.2	V
Transition frequency	f_T	$V_{CE} = -5\text{V}, I_C = -0.2\text{A}, f = 10\text{MHz}$		30		MHz
Turn-on time	t_{on}	$I_C = 1\text{A}$		0.3		μs
Storage time	t_{stg}	$I_{B1} = -0.1\text{A}, I_{B2} = 0.1\text{A}$		1.0		μs
Collector current fall time	t_f	$V_{CC} = -50\text{V}$		0.2		μs

* h_{FE1} Classifications

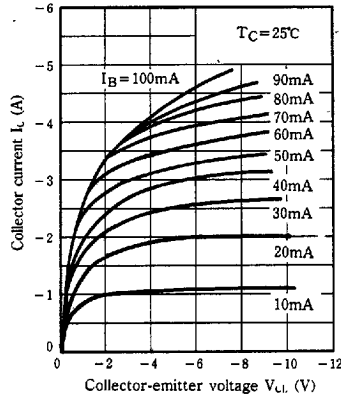
Class	Q	P
h_{FE1}	70 ~ 150	120 ~ 250

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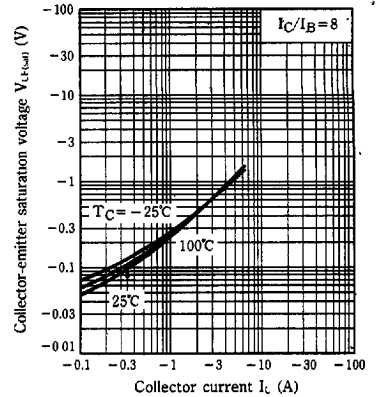
$P_C - T_a$



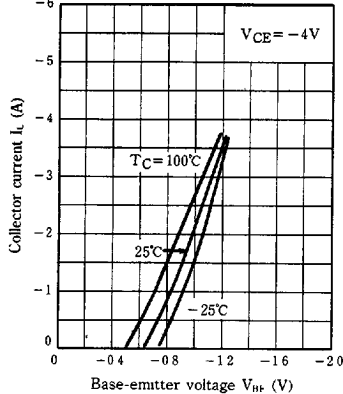
$I_C - V_{CE}$



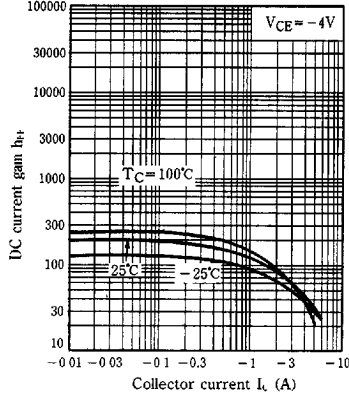
$V_{CE(sat)} - I_C$



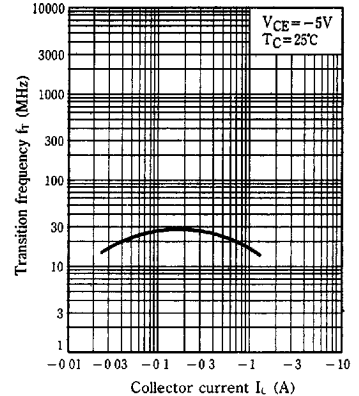
$I_C - V_{BE}$



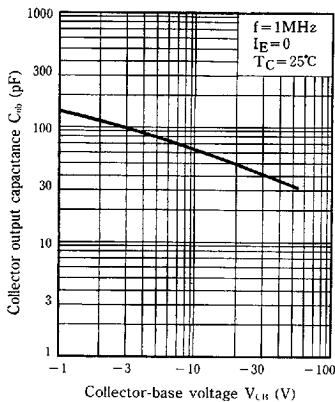
$h_{FE} - I_C$



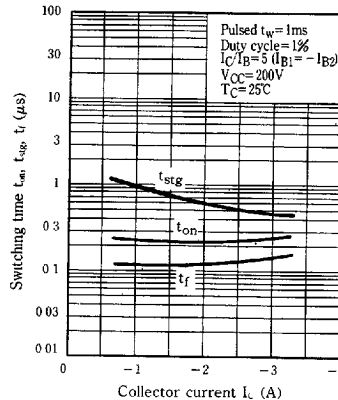
$f_T - I_C$



$C_{ob} - V_{CB}$



$t_{on}, t_{stg}, t_f - I_C$



Safety operation area-forward bias (ASO)

