

2SB1418, 2SB1418A

Silicon PNP Epitaxial Planar Darlington Type

Power Amplifier

Complementary Pair with 2SD2138

■ Features

- High DC current gain (h_{FE})
- High speed switching
- Automatic mounting by radial taping is possible.

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

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	-60	V
		-80	
Collector-emitter voltage	V_{CEO}	-60	V
		-80	
Emitter-base voltage	V_{EBO}	-5	V
Peak collector current	I_{CP}	-4	A
Collector current	I_C	-2	A
Collector power dissipation	P_C	15	W
		2.0	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

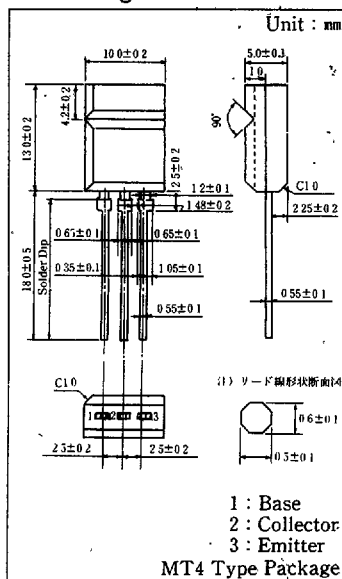
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -60\text{V}, I_B = 0$			-100	μA
		$V_{CB} = -80\text{V}, I_B = 0$			-100	
Collector cutoff current	I_{CEO}	$V_{CE} = -30\text{V}, V_{BE} = 0$			-100	μA
		$V_{CE} = -40\text{V}, V_{BE} = 0$			-100	
Emitter cutoff current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-100	μA
Collector-emitter voltage	V_{CEO}	$I_C = -30\text{mA}, I_B = 0$	-60			V
			-80			
DC current gain	h_{FE1}	$V_{CE} = -4\text{V}, I_C = -1\text{A}$	1000			
	h_{FE2}^*	$V_{CE} = -4\text{V}, I_C = -2\text{A}$	1000		10000	
Base-emitter voltage	V_{BE}	$V_{CE} = -4\text{V}, I_C = -2\text{A}$			-2.8	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2\text{A}, I_B = -8\text{mA}$			-2.5	V
Transition frequency	f_T	$V_{CE} = -10\text{V}, I_C = -0.5\text{A}, f = 1\text{MHz}$		20		MHz
Turn-on time	t_{on}	$I_C = -2\text{A}, I_{B1} = -8\text{mA}, I_{B2} = 8\text{mA}$		0.2		μs
Turn-off time	t_{off}			2		μs

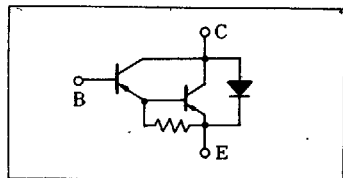
* h_{FE2} Classifications

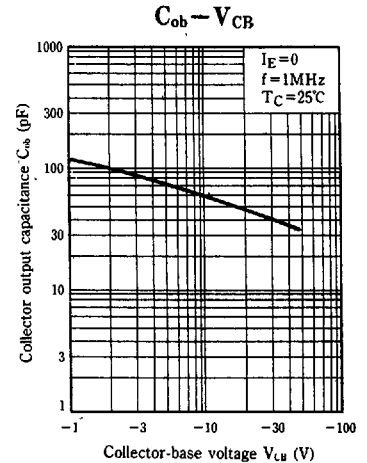
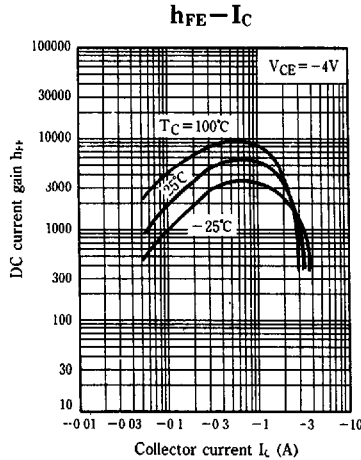
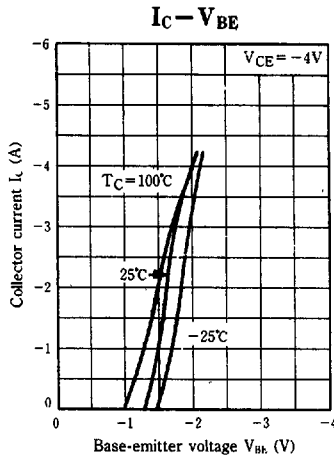
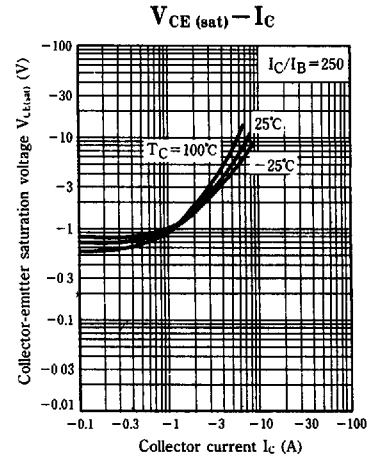
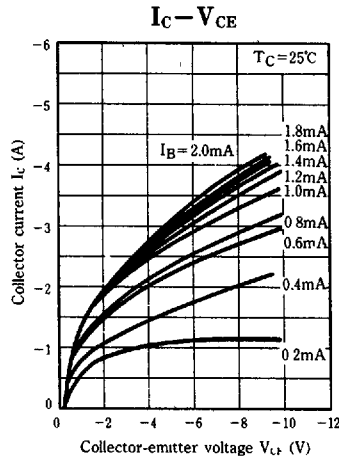
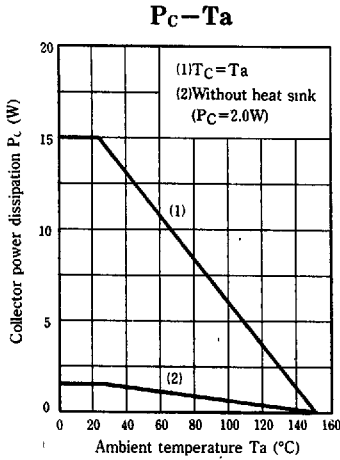
Class	R	Q	P
h_{FE2}	1000~2500	2000~5000	4000~10000

■ Package Dimensions



■ Inner Circuit





Safety operation area-forward bias (ASO)

