

2SB1416

Silicon PNP Epitaxial Planar Type

AF Power Amplifier

Complementary Pair with 2SD2136

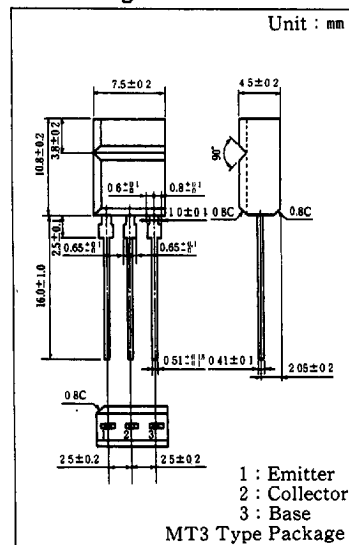
■ Features

- 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 ($T_a=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	-60	V
Collector-emitter voltage	V_{CEO}	-60	V
Emitter-base voltage	V_{EBO}	-5	V
Peak collector current	I_{CP}	-5	A
Collector current	I_C	-3	A
Collector power dissipation	P_C	1.5	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

■ Package Dimensions



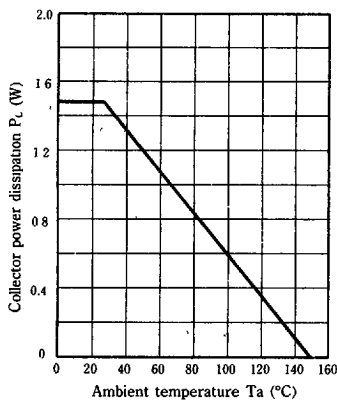
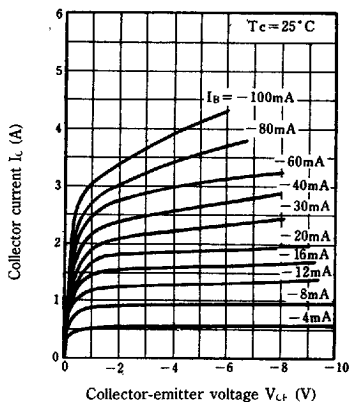
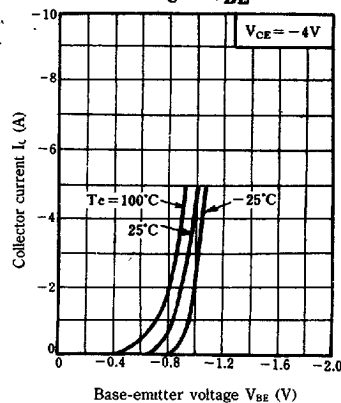
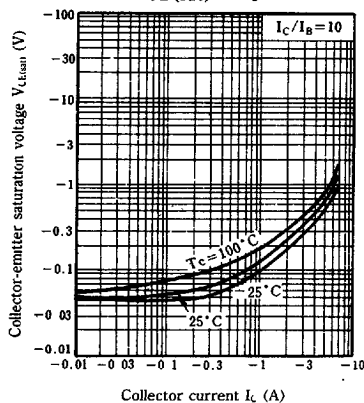
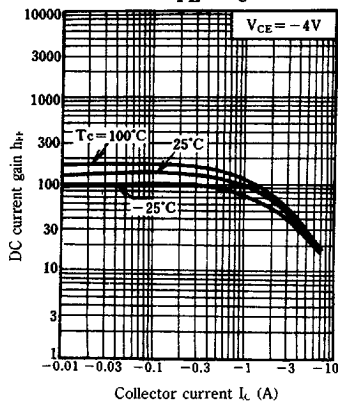
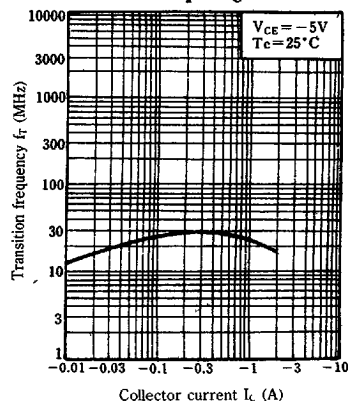
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CES}	$V_{CE} = -60\text{V}, V_{BE} = 0$			-200	μA
Collector cutoff current	I_{CEO}	$V_{CE} = -30\text{V}, I_B = 0$			-300	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-1	mA
Collector-emitter voltage	V_{CEO}	$I_C = -30\text{mA}, I_B = 0$	-60			V
DC current gain	h_{FE1}^*	$V_{CE} = -4\text{V}, I_C = -1\text{A}$	40		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
Turn-on time	t_{on}	$I_C = -1\text{A}, I_{B1} = -0.1\text{A}, I_{B2} = 0.1\text{A}$		0.5		μs
Storage time	t_{stg}			1.2		μs
Collector current fall time	t_f			0.3		μs

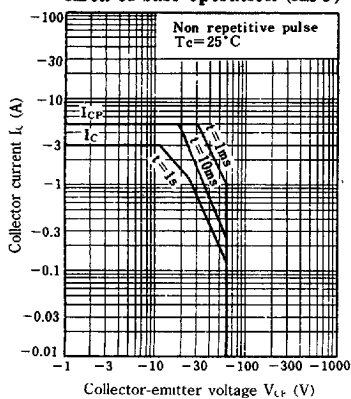
* h_{FE1} Classifications

Class	P	Q	R
h_{FE1}	40 ~ 90	70 ~ 150	120 ~ 250

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$P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$ 

Area of safe operation (ASO)

 $R_{th(t)} - t$ 