

2SB1052

Silicon PNP Triple-Diffused Planar Type

Power Amplifier
Complementary Pair with 2SD1480

■ Features

- High DC current gain (h_{FE}) and good linearity
- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- "Full Pack" package for simplified mounting on a heat sink with one screw

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

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	-60	V
Collector-emitter voltage	V_{CEO}	-60	V
Emitter-base voltage	V_{EBO}	-6	V
Peak collector current	I_{CP}	-4	A
Collector current	I_C	-2	A
Collector power dissipation	P_C	$T_c=25^\circ\text{C}$	25
		$T_a=25^\circ\text{C}$	2.0
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

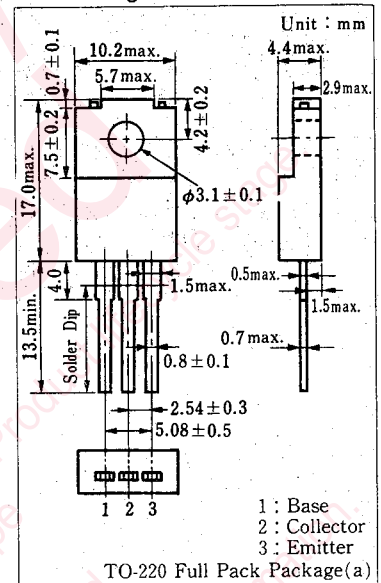
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CES}	$V_{CE} = -60\text{ V}, V_{BE} = 0$			-200	μA
	I_{CEO}	$V_{CE} = -30\text{ V}, I_B = 0$			-300	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -6\text{ V}, I_C = 0$			-1	mA
Collector-emitter voltage	V_{CEO}	$I_C = -30\text{ mA}, I_C = 0$	-60			V
DC current gain	h_{FE1}	$V_{CE} = -4\text{ V}, I_C = -0.1\text{ A}$	35			
	h_{FE2}^*	$V_{CE} = -4\text{ V}, I_C = -1\text{ A}$	40		250	
Base-emitter voltage	V_{BE}	$V_{CE} = -4\text{ V}, I_C = -1\text{ A}$			-1.2	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2\text{ A}, I_B = -0.2\text{ A}$			-2.0	V
Transition frequency	f_T	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 10\text{ MHz}$		25		MHz
Turn-on time	t_{on}	$I_C = -1\text{ A}, I_{B1} = -0.1\text{ A}, I_{B2} = 0.1\text{ A}$		0.1		μs
Storage time	t_{stg}			1.5		μs
Collector current fall time	t_f			0.3		μs

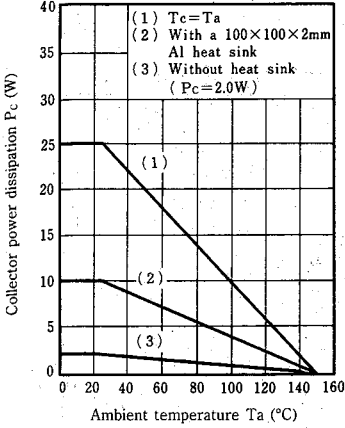
* h_{FE2} Classifications

Class	R	Q	P
h_{FE2}	40~90	70~150	120~250

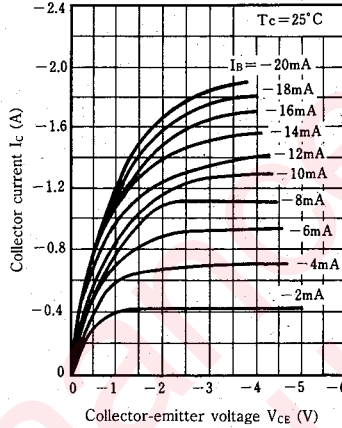
■ Package Dimensions



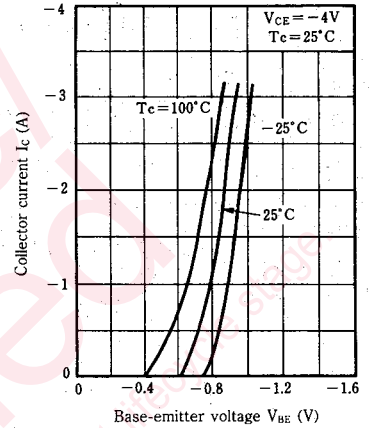
$P_C - T_a$



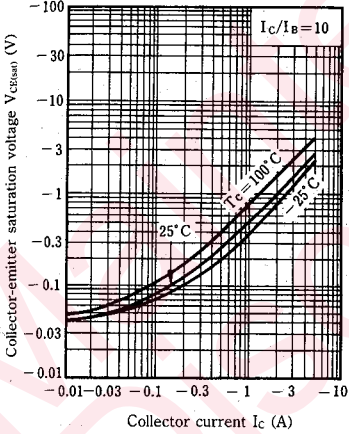
$I_C - V_{CE}$



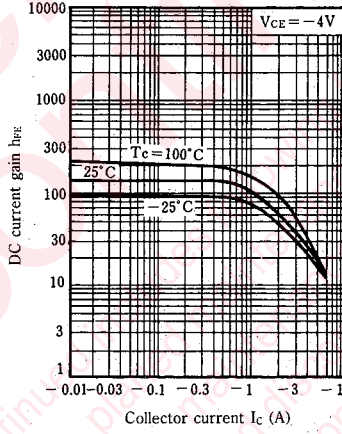
$I_C - V_{BE}$



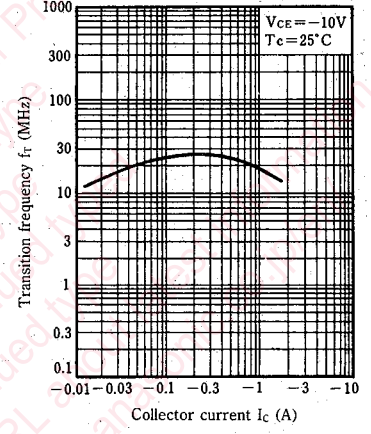
$V_{CE(sat)} - I_C$



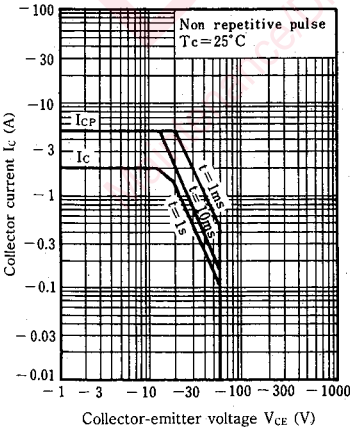
$h_{FE} - I_C$



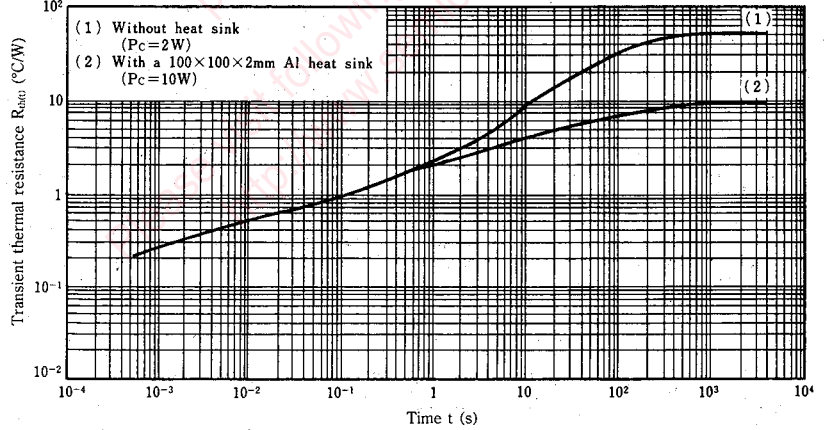
$f_T - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$



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