

2SB1378

Silicon PNP epitaxial planer type

For low-frequency power amplification

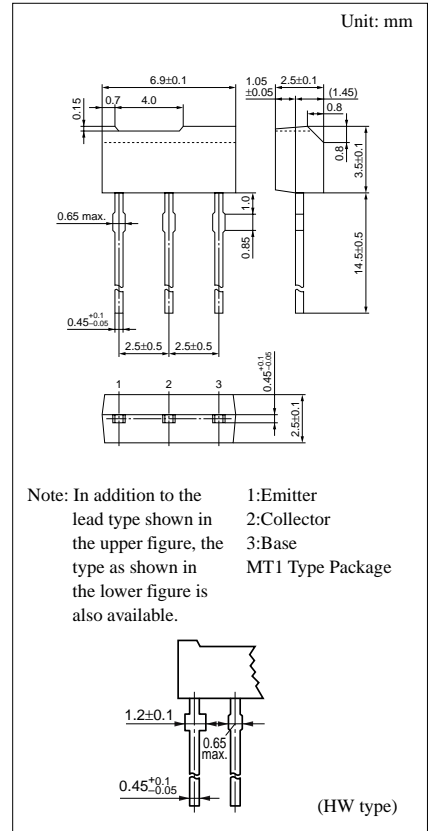
Complementary to 2SD1996

Features

- Low collector to emitter saturation voltage $V_{CE(sat)}$.
- Optimum for low-voltage operation and for converters.
- Allowing supply with the radial taping.

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	-25	V
Collector to emitter voltage	V_{CEO}	-20	V
Emitter to base voltage	V_{EBO}	-7	V
Peak collector current	I_{CP}	-1	A
Collector current	I_C	-0.5	A
Collector power dissipation	P_C	600	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C



Electrical Characteristics (Ta=25°C)

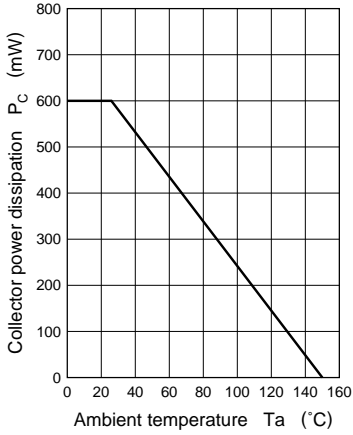
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -25V, I_E = 0$			-100	nA
	I_{CEO}	$V_{CE} = -20V, I_B = 0$			-1	μA
Collector to base voltage	V_{CBO}	$I_C = -10\mu A, I_E = 0$	-25			V
Collector to emitter voltage	V_{CEO}	$I_C = -1mA, I_B = 0$	-20			V
Emitter to base voltage	V_{EBO}	$I_E = -10\mu A, I_C = 0$	-7			V
Forward current transfer ratio	h_{FE1}^{*1}	$V_{CE} = -2V, I_C = -0.5A^{*2}$	90		350	
	h_{FE2}	$V_{CE} = -2V, I_C = -1A^{*2}$	25			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500mA, I_B = -50mA^{*2}$			-0.4	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = -500mA, I_B = -50mA^{*2}$			-1.2	V
Transition frequency	f_T	$V_{CB} = -10V, I_E = 50mA, f = 200MHz$		150		MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$		15	25	pF

*2 Pulse measurement

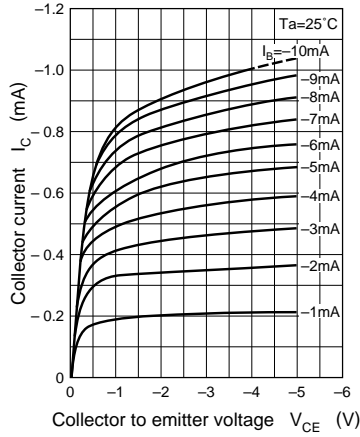
*1 h_{FE1} Rank classification

Rank	Q	R	S
h_{FE1}	90 ~ 155	130 ~ 220	180 ~ 350

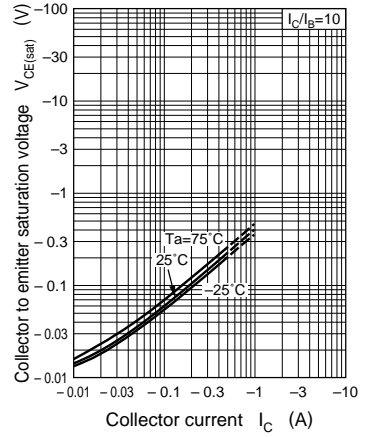
$P_C - T_a$



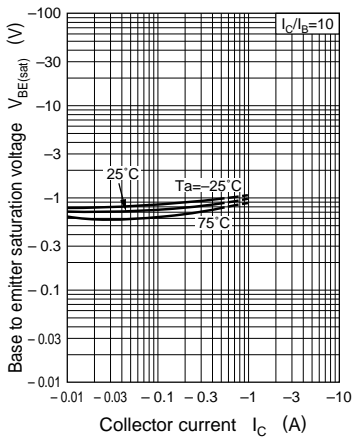
$I_C - V_{CE}$



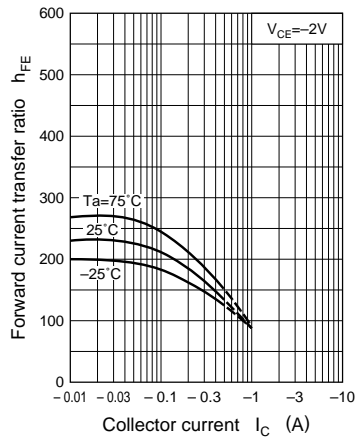
$V_{CE(sat)} - I_C$



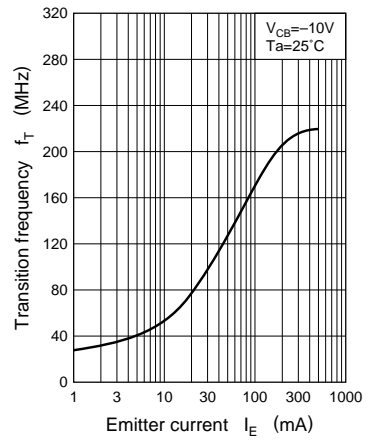
$V_{BE(sat)} - I_C$



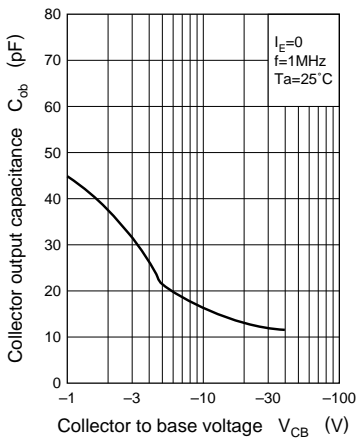
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



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