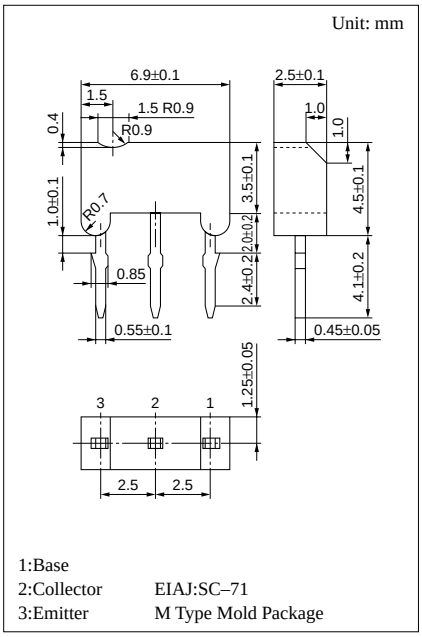
2SD1330

Silicon NPN epitaxial planer type

For low-voltage output amplification
For muting
For DC-DC converter



Features

- Low collector to emitter saturation voltage $V_{CE(sat)}$.
- Low ON resistance R_{on}.
- High foward current transfer ratio h_{FE}.
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

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}	12	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)

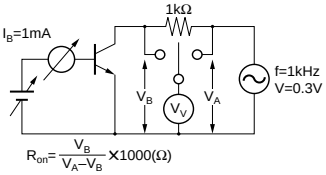
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 25V, I_C = 0			100	nA
Collector to base voltage	V_{CBO}	I_C = 10μA, I_E = 0	25			V
Collector to emitter voltage	V_{CEO}	I_C = 1mA, I_B = 0	20			V
Emitter to base voltage	V_{EBO}	I_E = 10μA, I_C = 0	12			V
Forward current transfer ratio	h_{FE1} *1	V_{CE} = 2V, I_C = 0.5A*2	200		800	
	h_{FE2}	V_{CE} = 2V, I_C = 1A*2	60			
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 0.5A, I_B = 20mA		0.13	0.4	V
Base to emitter saturation voltage	$V_{BE(sat)}$	I_C = 0.5A, I_B = 50mA			1.2	V
Transition frequency	f_T	V_{CB} = 10V, I_E = –50mA, f = 200MHz		200		MHz
Collector output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz		10		pF
ON resistanse	R_{on} *3			1.0		Ω

*2 Pulse measurement

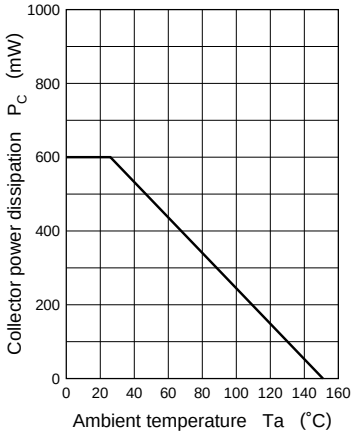
*1 h_{FE1} Rank classification

Rank	R	S	T
h_{FE1}	200 ~ 350	300 ~ 500	400 ~ 800

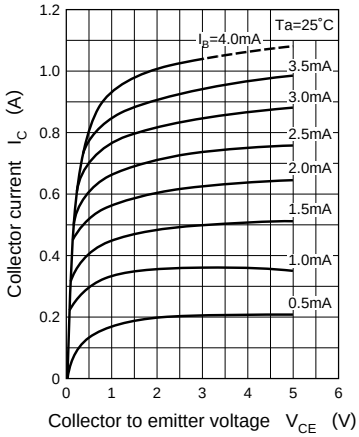
*3 R_{on} Measurement circuit



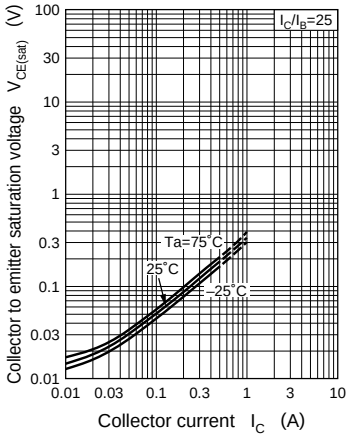
P_C — Ta



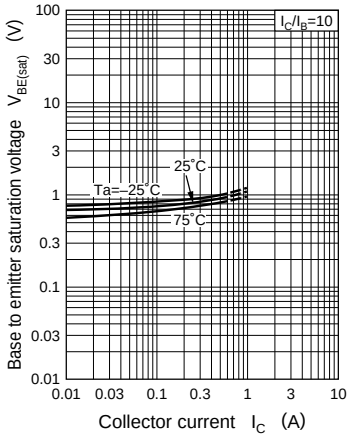
I_C — V_{CE}



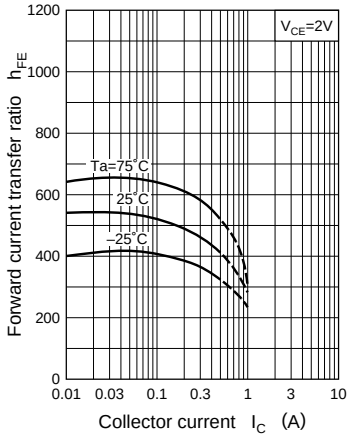
$V_{CE(sat)}$ — I_C



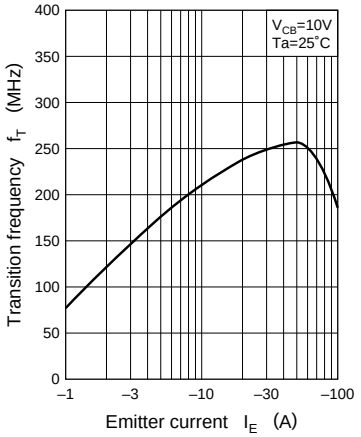
$V_{BE(sat)}$ — I_C



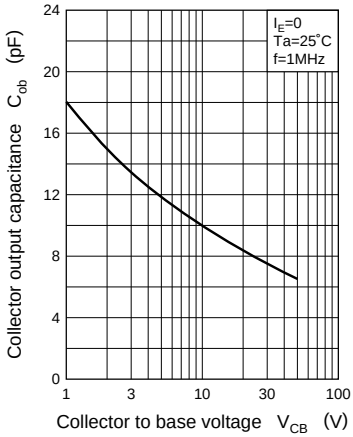
h_{FE} — I_C



f_T — I_E



C_{ob} — V_{CB}



R_{on} — I_B

