

2SD1051

Silicon NPN epitaxial planer type

For low-frequency power amplification

Complementary to 2SB819

Features

- High collector to emitter voltage V_{CEO} .
- Large collector power dissipation P_C .
- 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}	50	V
Collector to emitter voltage	V_{CEO}	40	V
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	3	A
Collector current	I_C	1.5	A
Collector power dissipation	P_C^*	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

* Printed circuit board: Copper foil area of 1cm² or more, and the board thickness of 1.7mm for the collector portion

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20V, I_E = 0$			1	μA
	I_{CEO}	$V_{CE} = 10V, I_B = 0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 5V, I_E = 0$			10	μA
Collector to base voltage	V_{CBO}	$I_C = 1mA, I_E = 0$	50			V
Collector to emitter voltage	V_{CEO}	$I_C = 2mA, I_B = 0$	40			V
Forward current transfer ratio	h_{FE}^{*1}	$V_{CE} = 5V, I_C = 1A^{*2}$	80	120	220	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1.5A, I_B = 0.15A^{*2}$			1	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 2A, I_B = 0.2A^{*2}$			1.5	V
Transition frequency	f_T	$V_{CB} = 5V, I_E = -0.5A^{*2}, f = 200MHz$		150		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 20V, I_E = 0, f = 1MHz$		45		pF

*2 Pulse measurement

*1 h_{FE} Rank classification

Rank	Q	R
h_{FE}	80 ~ 160	120 ~ 220



