

2SD669

NPN TRANSISTOR



- 1. Emitter
- 2. Collector
- 3. Base

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Value	Unit
Collector to base voltage	V_{CBO}	180	V
Collector to emitter voltage	V_{CEO}	120	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	1.5	A
Collector peak current	$I_{C(peak)}$	3	A
Collector power dissipation	P_C	1	W
	P_C^{*1}	20	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	180	—	—	V	$I_C = 1 \text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	V	$I_C = 10 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 1 \text{ mA}, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{CB} = 160 \text{ V}, I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	60	—	320		$V_{CE} = 5 \text{ V}, I_C = 150 \text{ mA}^{*2}$
	h_{FE2}	30	—	—		$V_{CE} = 5 \text{ V}, I_C = 500 \text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1	V	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}^{*2}$
Base to emitter voltage	V_{BE}	—	—	1.5	V	$V_{CE} = 5 \text{ V}, I_C = 150 \text{ mA}^{*2}$
Gain bandwidth product	f_T	—	140	—	MHz	$V_{CE} = 5 \text{ V}, I_C = 150 \text{ mA}^{*2}$
Collector output capacitance	C_{ob}	—	14	—	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$

B	C	D
60 to 120	100 to 200	160 to 320