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# 2SD1471

Silicon NPN Planar, Darlington

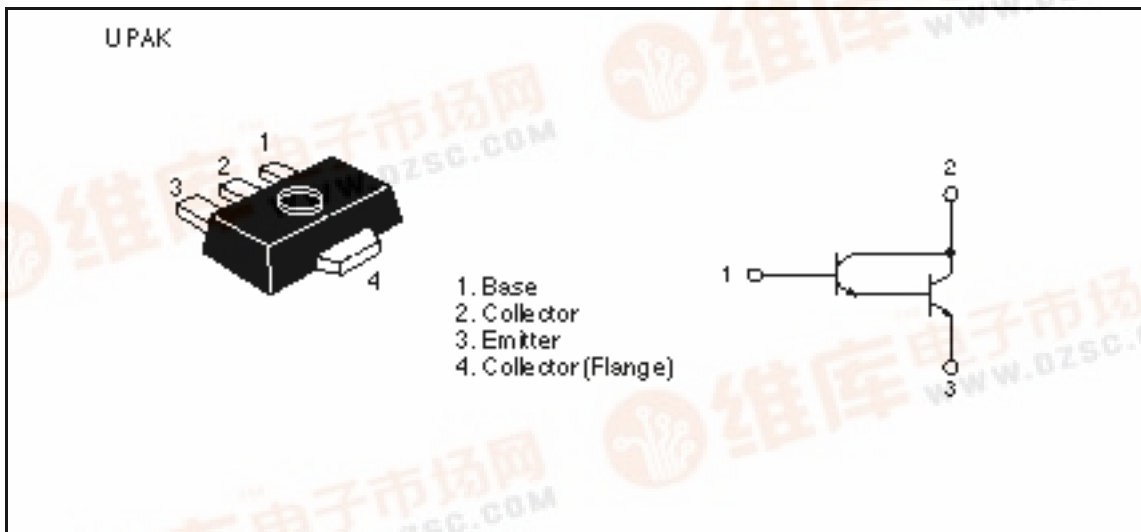
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## Application

High gain amplifier

## Outline



## 2SD1471

### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	40	V
Collector to emitter voltage	$V_{CEO}$	30	V
Emitter to base voltage	$V_{EBO}$	10	V
Collector current	$I_C$	300	mA
Collector peak current	$i_{C(\text{peak})}^{*1}$	500	mA
Collector power dissipation	$P_C^{*2}$	1	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{\text{stg}}$	-55 to +150	°C

Notes: 1. Pulse 10 ms, Duty cycle 20%

2. Value on the alumina ceramic board (12.5 x 30 x 0.7 mm)

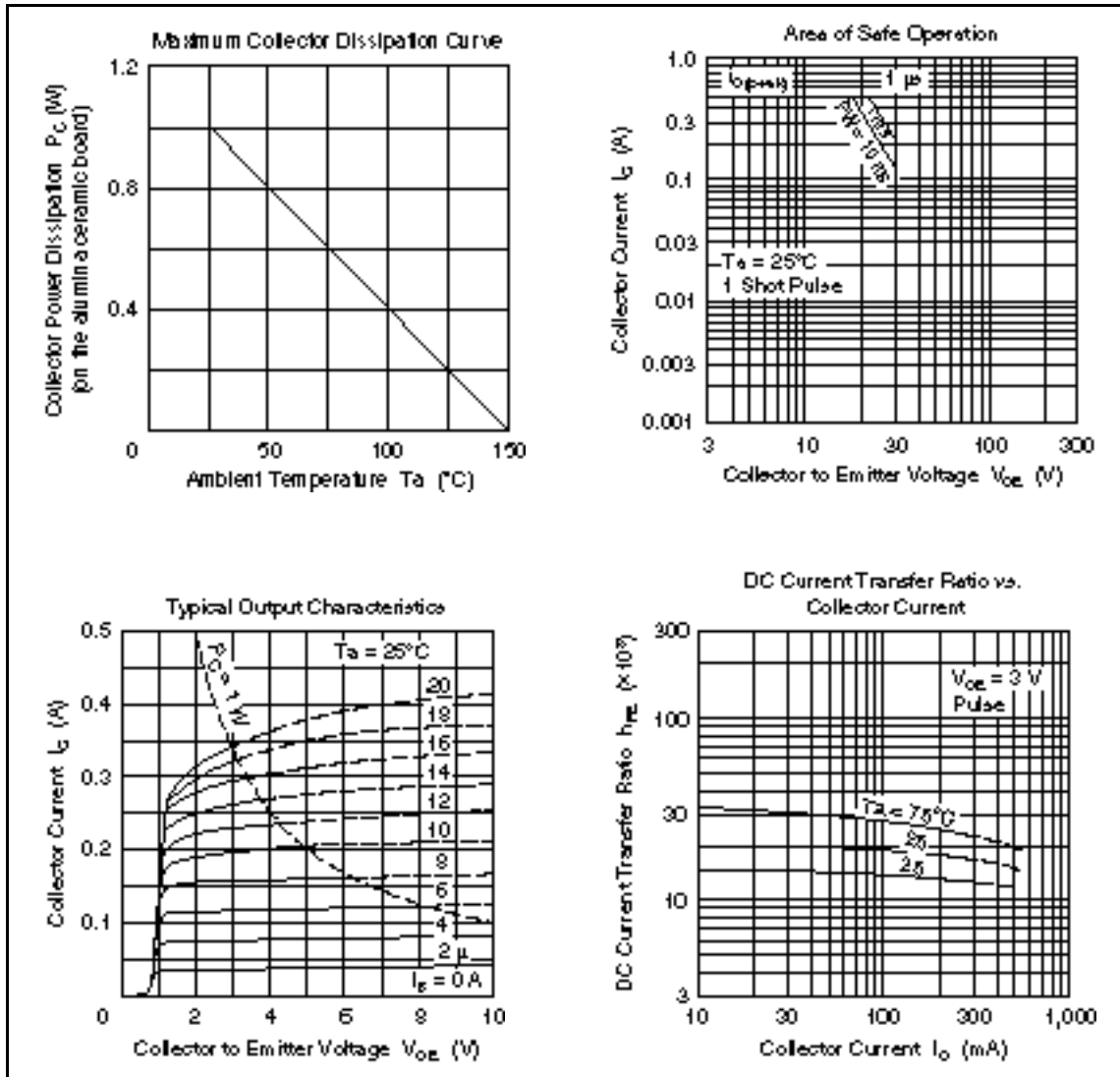
### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	40	—	—	V	$I_C = 10 \mu\text{A}$ , $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	30	—	—	V	$I_C = 1 \text{ mA}$ , $R_{BE} =$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	10	—	—	V	$I_E = 10 \mu\text{A}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	1	$\mu\text{A}$	$V_{CB} = 30 \text{ V}$ , $I_E = 0$
	$I_{CEO}$	—	—	10	$\mu\text{A}$	$V_{CE} = 24 \text{ V}$ , $R_{BE} =$
DC current transfer ratio	$h_{FE1}^{*1}$	2000	—	100000		$V_{CE} = 5 \text{ V}$ , $I_C = 10 \text{ mA}^{*2}$
	$h_{FE2}^{*1}$	3000	—	—		$V_{CE} = 5 \text{ V}$ , $I_C = 100 \text{ mA}^{*2}$
	$h_{FE3}^{*1}$	3000	—	—		$V_{CE} = 5 \text{ V}$ , $I_C = 400 \text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{CE(\text{sat})}$	—	—	1.5	V	$I_C = 100 \text{ mA}$ , $I_B = 0.1 \text{ mA}^{*2}$
Base to emitter saturation voltage	$V_{BE(\text{sat})}$	—	—	2.0	V	$I_C = 100 \text{ mA}$ , $I_B = 0.1 \text{ mA}^{*2}$

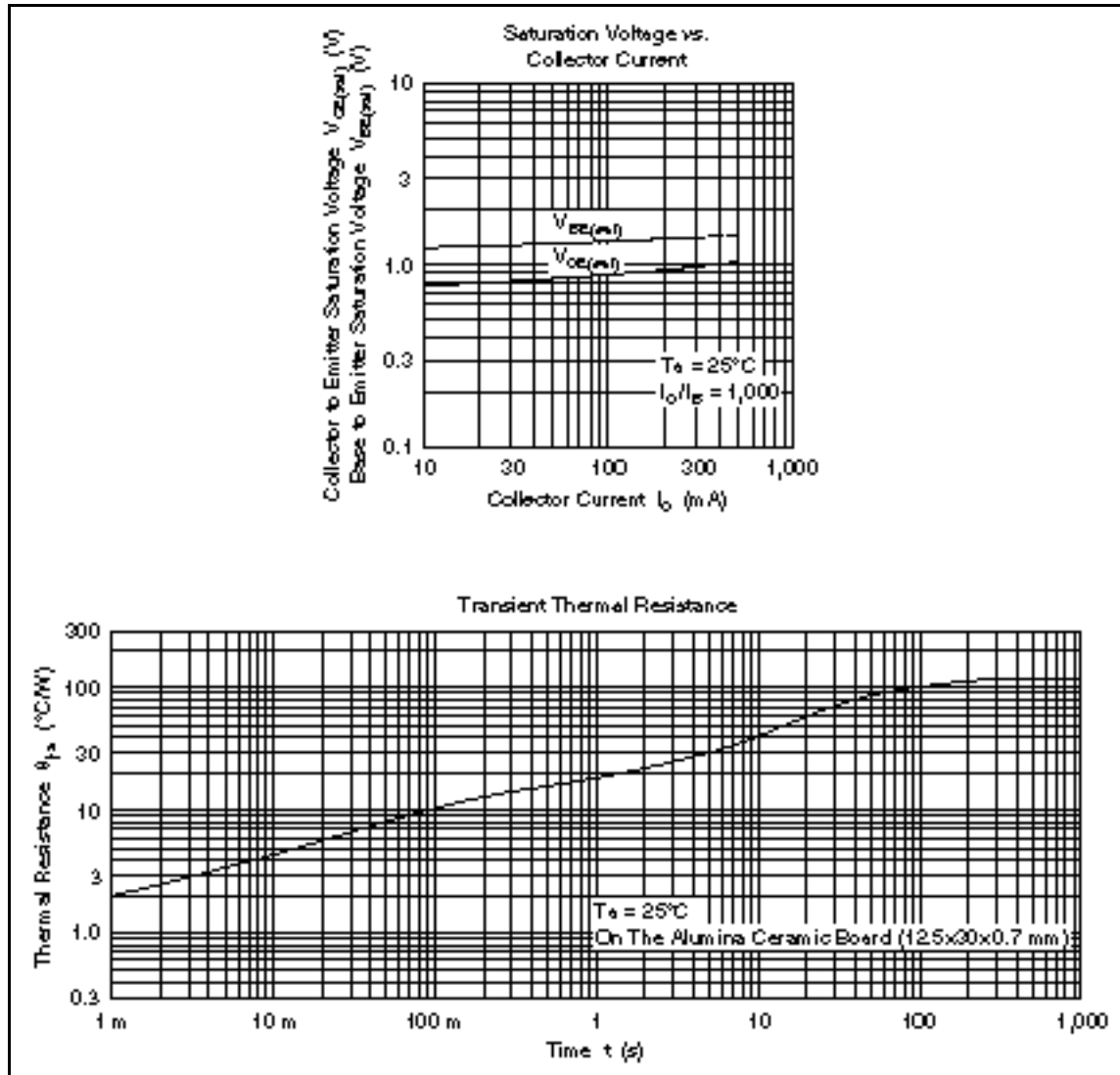
Notes: 1. The 2SD1471 is grouped by  $h_{FE}$  as follows.

2. Pulse test

Mark	DT	ET
$h_{FE1}$	2000 to 100000	5000 to 100000
$h_{FE2}$	3000 min	10000 min
$h_{FE3}$	3000 min	10000 min



## 2SD1471



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