# NEC

# NPN SILICON POWER TRANSISTOR 2SC4001

DESCRIPTION

The 2SC4001 is designed for uses of high-resolution monitor TV applications. This makes it possible to raise the video band of high-resolution monitor TVs to 50 MHz.

#### **FEATURES**

- $\bullet$  High f<sub>T</sub> : f<sub>T</sub> = 300 MHz TYP. (@V<sub>CE</sub> = 30 V, I<sub>E</sub> = -30 mA)
- Low  $C_{ob} : C_{ob} = 2.8 pF (@V_{CB} = 30 V)$
- High Voltage : V<sub>CBO</sub> = 300 V, V<sub>CEO</sub> = 250 V
- High Total Power Dissipation :

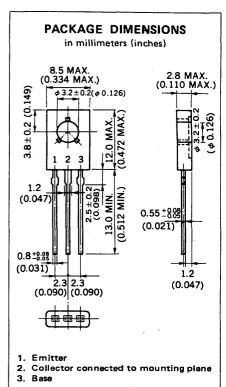
 $P_T (T_a/T_c = 25 \,^{\circ}C) = 1.3 \, W/7 \, W$ 

Collector Current

• Complementary to 2SA1546

#### **ABSOLUTE MAXIMUM RATINGS**

Maximum Tei	mperatures					
Storage	Temperature	55 to +1	1 <b>50</b> °C			
Junctio	n Temperature	150 °C Max	imum			
	wer Dissipation					
Total Power Dissipation ( $T_a = 25$ °C)						
Total Po		7.0 W				
Maximum Vo	Itages and Current $(T_a = 25 ^{\circ}C)$					
$V_{CBO}$	Collector to Base Voltage	300	V			
$V_{CEO}$	Collector to Emitter Voltage	250	V			
$V_{FRO}$	Emitter to Base Voltage	5.0	٧			



# ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
pE	DC Current Gain	60	200	320		V <sub>CE</sub> = 10 V, I <sub>C</sub> = 10 mA*
f <sub>T</sub>	Gain Bandwidth Product	200	300		MHz	$V_{CE} = 30 \text{ V, } I_{E} = -30 \text{ mA}$
Cob	Output Capacitance		2.8	3.5	pF	$V_{CB} = 30 \text{ V}, I_{E} = 0, f = 1 \text{ MHz}$
ICBO	Collector Cutoff Current			100	nΑ	$V_{CB} = 200 \text{ V, I}_{E} = 0$
<sup>1</sup> EBO	Emitter Cutoff Current			100	nA	V <sub>EB</sub> = 3.0 V, I <sub>C</sub> = 0
V <sub>CE(sat)</sub>	Collector Saturation Voltage		80.0	0.3	V	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 1.0 mA*
V <sub>BE(sat)</sub>	Base Saturation Voltage		0.72	1.2	V	$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA*}$
VESDR	Electrostatic Discharge-Resistant		1 000		V	C = 1 000 pF, E-B Reverse Bias

100

mΑ

\* Pulsed PW  $\leq$  350  $\mu$ s, Duty Cycle  $\leq$  2 %

### Classification of hFE

Rank	М	L	К
Range	60 to 120	100 to 200	160 to 300

Test Conditions:  $V_{CE} = 10 \text{ V}$ ,  $I_{C} = 10 \text{ mA}$ 

# TYPICAL CHARACTERISTICS (Ta = 25 °C)

