

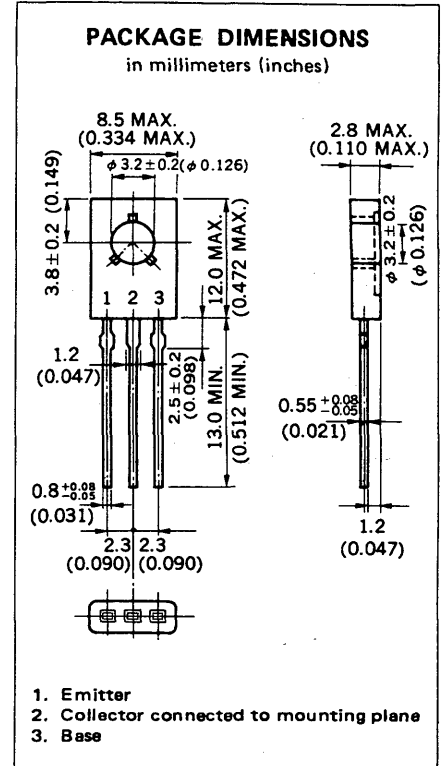
## NPN SILICON POWER TRANSISTOR 2SC4001

**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**
- High  $f_T$  :  $f_T = 300$  MHz TYP. (@ $V_{CE} = 30$  V,  $I_E = -30$  mA)
  - Low  $C_{ob}$  :  $C_{ob} = 2.8$  pF (@ $V_{CB} = 30$  V)
  - High Voltage :  $V_{CBO} = 300$  V,  $V_{CEO} = 250$  V
  - High Total Power Dissipation :  
 $P_T (T_a/T_c = 25^\circ\text{C}) = 1.3$  W/7 W
  - Complementary to 2SA1546

**ABSOLUTE MAXIMUM RATINGS**

Maximum Temperatures	
Storage Temperature	-55 to +150 °C
Junction Temperature	150 °C Maximum
Maximum Power Dissipation	
Total Power Dissipation ( $T_a = 25^\circ\text{C}$ )	1.3 W
Total Power Dissipation ( $T_c = 25^\circ\text{C}$ )	7.0 W
Maximum Voltages and Current ( $T_a = 25^\circ\text{C}$ )	
$V_{CBO}$ Collector to Base Voltage	300 V
$V_{CEO}$ Collector to Emitter Voltage	250 V
$V_{EBO}$ Emitter to Base Voltage	5.0 V
$I_C$ Collector Current	100 mA



**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )**

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$h_{FE}$	DC Current Gain	60	200	320		$V_{CE} = 10$ V, $I_C = 10$ mA*
$f_T$	Gain Bandwidth Product	200	300		MHz	$V_{CE} = 30$ V, $I_E = -30$ mA
$C_{ob}$	Output Capacitance		2.8	3.5	pF	$V_{CB} = 30$ V, $I_E = 0$ , $f = 1$ MHz
$I_{CBO}$	Collector Cutoff Current			100	nA	$V_{CB} = 200$ V, $I_E = 0$
$I_{EBO}$	Emitter Cutoff Current			100	nA	$V_{EB} = 3.0$ V, $I_C = 0$
$V_{CE(sat)}$	Collector Saturation Voltage		0.08	0.3	V	$I_C = 10$ mA, $I_B = 1.0$ mA*
$V_{BE(sat)}$	Base Saturation Voltage		0.72	1.2	V	$I_C = 10$ mA, $I_B = 1.0$ mA*
$V_{ESDR}$	Electrostatic Discharge-Resistant		1 000		V	$C = 1$ 000 pF, E-B Reverse Bias

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

**Classification of  $h_{FE}$**

Rank	M	L	K
Range	60 to 120	100 to 200	160 to 300

Test Conditions:  $V_{CE} = 10$  V,  $I_C = 10$  mA

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

