NEC

NPN SILICON TRANSISTOR 2SC2001

DESCRIPTION

The 2SC2001 is designed for use in output stage of portable RADIO and cassette type tape recorder, general purpose applica-

tions.

FEATURES

• High total power dissipation.

: 600 mW

High hee and low VCE(sat)

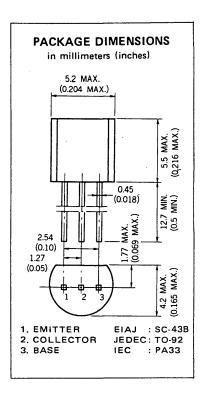
 h_{FE} ($I_C = 100 \text{ mA}$) : 200 TYP.

V_{CE(sat)} (700 mA) : 0.20 V TYP.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to +150 °C Junction Temperature +150 °C Maximum Maximum Power Dissipation (Ta = 25 °C) Total Power Dissipation 600 mW Maximum Voltages and Currents (Ta = 25 °C) V_{CBO} Collector to Base Voltage30 ٧ V_{CEO} Collector to Emitter Voltage 25 ٧ V_{EBO} Emitter to Base Voltage 5.0 Collector Current 700



ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

IB

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
hFE1*	DC Current Gain	90	200	400	. –	V _{CE} = 1.0 V, I _C = 100 mA
hFE2*	DC Current Gain	50	140		_	$V_{CE} = 1.0 \text{ V, } I_{C} = 700 \text{ mA}$
Cob	Collector to Base Capacitance		13	25	pF	$V_{CB} = 6.0 \text{ V, IE} = 0$ f = 1.0 MHz
fŢ	Gain Bandwidth Product	50	170		MHz	$V_{CE} = 6.0 \text{ V, } I_{E} = -10 \text{ mA}$
VBE*	Base to Emitter Voltage	600	640	700	mV	$V_{CE} = 6.0 \text{ V, } I_{C} = 10 \text{ mA}$
VCE(sat)*	Collector Saturation Voltage		0.2	0.6	V	$I_C = 700 \text{ mA}, I_B = 70 \text{ mA}$
VBE(sat)*	Base Saturation Voltage		0.95	1.2	. V	I _C = 700 mA, I _B = 70 mA
Ісво	Collector Cutoff Current			100	nA	$V_{CB} = 30 \text{ V, } I_{E} = 0$
IEBO	Emitter Cutoff Current			100	nΑ	V _{EB} = 5.0 V, I _C = 0

^{*} Pulsed PW \leq 350 μ s, duty cycle \leq 2.0 %

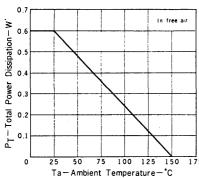
Classification of h_{FE1}

Rank	Μ .	L	κ
Range	90 – 180	135 – 270	200 – 400

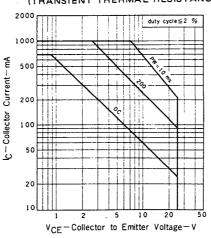
hFE Test Conditions : VCE = 1.0 V, IC = 100 mA

TYPICAL CHARACTERISTICS (Ta = 25 °C unless otherwise noted)

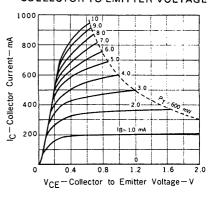




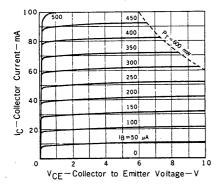
SAFE OPERATING AREAS (TRANSIENT THERMAL RESISTANCE)



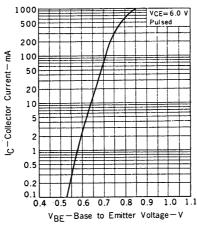
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



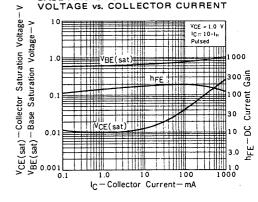
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



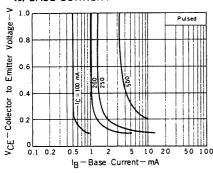
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



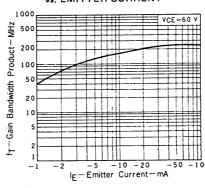
DC CURRENT GAIN, BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



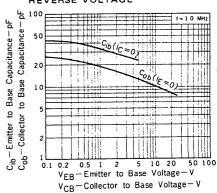
COLLECTOR TO EMITTER VOLTAGE vs. BASE CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



EMITTER TO BASE AND COLLECTOR TO BASE CAPACITANCE vs. REVERSE VOLTAGE



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