NEC

NPN SILICON TRANSISTOR 2SC3209

DESCRIPTION

The 2SC3209 is designed for use in TV chroma output circuits and TV horizontal deflection output circuits.

FEATURES

High voltage

V_{CEO}≥300 V

High Electrostatic-

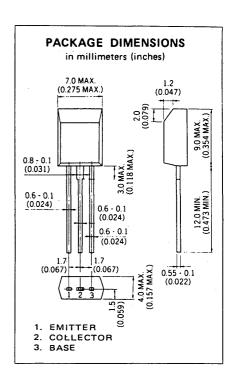
(E-B reverse bias, C=2 300 pF)

Discharge-Resistant

VESDR: TYP. 1 000 V

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures



ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
hFE *	DC Current Gain	60	150	250		V _{CE} = 10 V, I _C = 10 mA
t _d	Delay Time			1.0	μs	/v
t _r	Rise Time			1.0	μs	V _{CC} = 30 V
t _{stg}	Storage Time			2.0	μs	$\left(\begin{array}{c} I_{C} = 100 \text{ mA} \\ I_{B1} = -I_{B2} = 10 \text{ mA} \end{array}\right)$
tf	Fall Time			1.0	μs	\ IB1 = - IB2 = 10 mA /
f _T	Gain Bandwidth Product		50		MHz	$V_{CE} = 30 \text{ V, } I_{E} = -10 \text{ mA}$
VESDR	Electrostatic-Discharge-Resistant		1000		V	See Test Circuit
C _{ob}	Output Capacitance	,	2.8	3.5	pF	$V_{CB} = 30 \text{ V}, I_{E} = 0, f = 1.0 \text{ MHz}$
ICBO	Collector Cutoff Current			100	nΑ	V _{CB} = 200 V, I _E = 0
I _{EBO}	Emitter Cutoff Current			100	nA	$V_{EB} = 5.0 \text{ V, } I_{C} = 0$
V _{BE} *	Base to Emitter Voltage	600	670	700	mV	$V_{CE} = 10 \text{ V, } I_{C} = 10 \text{ mA}$
V _{CE(sat)} *	Collector Saturation Voltage		0.15	1.5	V	$I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$
V _{BE(sat)} *	Base Saturation Voltage		0.80	1.5	V	I _C = 50 mA, I _B = 5.0 mA

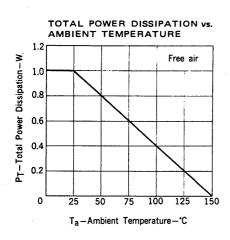
^{*} Pulsed PW \leq 300 μ s, duty cycle \leq 2 %

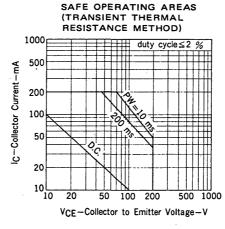
Classification of h_{FE1}

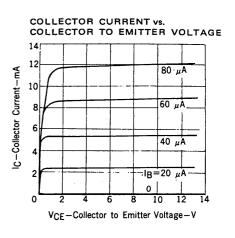
Rank	М	L	κ
Range	60 — 120	100 — 200	160 – 250

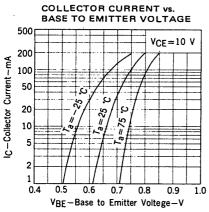
Test Conditions: VCE = 10 V, IC = 10 mA

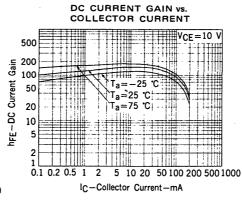
TYPICAL CHARACTERISTICS (Ta = 25 °C)

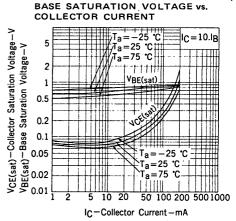




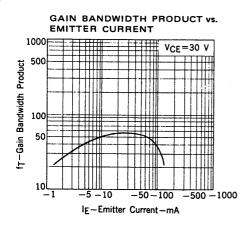


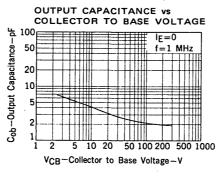


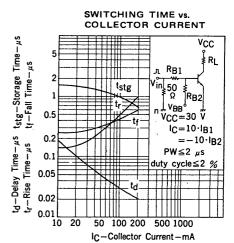




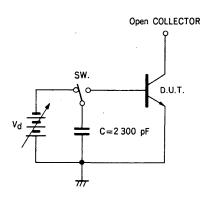
COLLECTOR SATURATION VOLTAGE,







ELECTROSTATIC-DISCHARGE-RESISTANT TEST CIRCUIT



TEST CONDITION

- 1) E-B reverse bias
- 2) C = 2 300 pF
- 3) Apply one shot pluse to D.U.T. (Transistor Under the Test) by SW.

JUDGEMENT

REJECT; BV_{EBO} waveform defect As a result if D.U.T. is not rejected, apply higher voltage to capacitor and test again.