

NEC

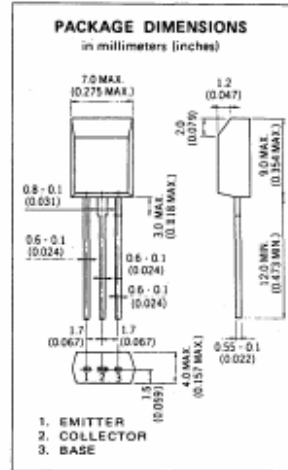
NPN SILICON TRANSISTOR 2SC3209

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

- FEATURES**
- High voltage $V_{CE0} \approx 300$ V
 - High Electrostatic-Discharge-Resistant (E-B reverse bias, $C=2$ 300 pF) V_{ESDR} : TYP. 1 000 V

ABSOLUTE MAXIMUM RATINGS

- Maximum Temperatures
- Storage Temperature -55 to +150 °C
 - Junction Temperature 150 °C Maximum
- Maximum Power Dissipation ($T_a = 25$ °C)
- Total Power Dissipation 1.0 W
- Maximum Voltages and Currents ($T_a = 25$ °C)
- V_{CBO} Collector to Base Voltage 300 V
 - V_{CEO} Collector to Emitter Voltage 300 V
 - V_{EBO} Emitter to Base Voltage 5.0 V
 - I_C Collector Current 200 mA



ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE}^*	DC Current Gain	60	150	250		$V_{CE} = 10$ V, $I_C = 10$ mA
t_d	Delay Time			1.0	μ s	$V_{CC} = 30$ V $I_C = 100$ mA $I_{B1} = -I_{B2} = 10$ mA
t_r	Rise Time			1.0	μ s	
t_{stg}	Storage Time			2.0	μ s	
t_f	Fall Time			1.0	μ s	
f_T	Gain Bandwidth Product				MHz	$V_{CE} = 30$ V, $I_E = -10$ mA
V_{ESDR}	Electrostatic-Discharge-Resistant		1000		V	See Test Circuit
C_{ob}	Output Capacitance		2.8	3.5	pF	$V_{CB} = 30$ V, $I_E = 0$, $f = 1.0$ MHz
I_{CBO}	Collector Cutoff Current			100	nA	$V_{CB} = 200$ V, $I_E = 0$
I_{EBO}	Emitter Cutoff Current			100	nA	$V_{EB} = 5.0$ V, $I_C = 0$
V_{BE}^*	Base to Emitter Voltage	600	670	700	mV	$V_{CE} = 10$ V, $I_C = 10$ mA
$V_{CE(sat)}^*$	Collector Saturation Voltage		0.15	1.5	V	$I_C = 50$ mA, $I_B = 5.0$ mA
$V_{BE(sat)}^*$	Base Saturation Voltage		0.80	1.5	V	$I_C = 50$ mA, $I_B = 5.0$ mA

* Pulsed PWS300 μ s, duty cycle $\leq 2\%$

Classification of h_{FE1}

Rank	M	L	K
Range	60 - 120	100 - 200	160 - 250

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