

ST 2SC1393

NPN Silicon Epitaxial Planar Transistor TV VHF TUNER RF AMPLIFIER (FORWARD AGC)

The transistor is subdivided into three group, R, O and Y, according to its DC current gain.

On special request, these transistors can be manufactured in different pin configurations.



1. Emitter 2. Collector 3. Base
TO-92 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	30	V
Collector Emitter Voltage	V_{CEO}	30	V
Emitter Base Voltage	V_{EBO}	4	V
Collector Current	I_C	20	mA
Collector Dissipation	P_{tot}	250	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 10\text{ V}$, $I_C = 2\text{ mA}$ Current Gain Group	R	h_{FE}	40	-	80	-
	O	h_{FE}	60	-	140	-
	Y	h_{FE}	90	-	180	-
Collector Base Cutoff Current at $V_{CB} = 20\text{ V}$	I_{CBO}	-	-	0.1	μA	
Collector Base Breakdown Voltage at $I_C = 10\text{ }\mu\text{A}$	$V_{(BR)CBO}$	30	-	-	V	
Collector Emitter Breakdown Voltage at $I_C = 5\text{ mA}$	$V_{(BR)CEO}$	30	-	-	V	
Emitter Base Breakdown Voltage at $I_E = 10\text{ }\mu\text{A}$	$V_{(BR)EBO}$	4	-	-	V	
AGC Current I_E at $G_{pe} = -30\text{ dB}$, $f = 200\text{ MHz}$	I_{AGC}	-	-10	-12	mA	
Reverse Transfer Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{re}	-	0.35	0.5	pF	
Current Gain Bandwidth Product at $V_{CE} = 10\text{ V}$, $I_C = 3\text{ mA}$	f_T	400	700	-	MHz	
Power Gain at $V_{CE} = 10\text{ V}$, $f = 200\text{ MHz}$, $R_S = 50\text{ }\Omega$, $I_E = -3\text{ mA}$	G_{pe}	20	24	-	dB	
Noise Figure at $V_{CE} = 10\text{ V}$, $I_E = -3\text{ mA}$, $f = 200\text{ MHz}$, $R_S = 50\text{ }\Omega$	NF	-	2.0	3.0	dB	