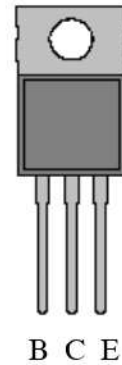


2SC1306
Silicon NPN Transistor
Final RF Power Output

Description:

The 2SC1306 is a silicon NPN transistor in a TO220 type case designed for use in high power output amplifier stages such as citizen band communications equipment.



Absolute Maximum Ratings: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Collector-Emitter Voltage ($R_{BE} = 150\ \Omega$), V_{CER}	75V
Collector-Base Voltage, V_{CBO}	80V
Emitter-Base Voltage, V_{EBO}	5V
Collector Current, I_C	
Continuous	3A
Peak	5A
Collector Power Dissipation ($T_A = +25^\circ\text{C}$), P_D	1.2W
Collector Power Dissipation ($T_C = +50^\circ\text{C}$), P_D	10W
Operating Junction Temperature, T_J	$+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$

Electrical Characteristics: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\ \mu\text{A}$, $I_B = 0$	80	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	$I_C = 1\ \text{mA}$, $R_{BE} = 150\ \Omega$	75	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\ \mu\text{A}$, $I_C = 0$	5	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 40\text{V}$, $I_E = 0$	-	-	10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}$, $I_C = 0$	-	-	10	μA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}$, $I_C = 0.5\text{A}$	25	-	200	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{A}$, $I_B = 0.1\text{A}$	-	0.15	0.60	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1\text{A}$, $I_B = 0.1\text{A}$	-	0.9	1.2	V
Current Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}$, $I_C = 0.1\text{A}$	100	150	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$	25	-	-	
Power Output	P_O	$V_{CC} = 12\text{V}$, $P_{in} = 0.2\text{W}$, $f = 27\text{MHz}$	4.0	-	-	W
Collector Efficiency			60	-	-	%