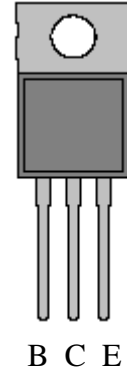2SC1306
Silicon NPN Transistor
Final RF Power Output

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.

B C E

Absolute Maximum Ratings: (T_C = +25°C unless otherwise specified)

Collector-Emitter Voltage (R_{BE} = 150 Ohm), 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°C), P_D	1.2W
Collector Power Dissipation (T_C = +50°C), P_D	10W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	-55° to +150°C

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

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