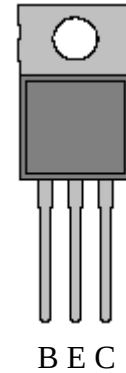


2SC1590
Silicon NPN Transistor
RF Power Output

The 2SC1590 is a silicon NPN epitaxial planer type transistor designed for 136-174MHz RF power amplifiers on VHF band mobile radio applications.



Features:

- High Power Gain: $G_{pe} \geq 10\text{dB}$ ($V_{CC} = 13.5\text{V}$, $P_O = 6\text{W}$, $f = 175\text{MHz}$)
- Ability to Withstand more than 20:1 VSWR Load when Operated at:
 $V_{CC} = 15.2\text{V}$, $P_O = 6\text{W}$, $f = 175\text{MHz}$

Application:

- 4 to 5 Watt Output Power Amplifier Applications in VHF Band

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

Collector-Emitter Voltage ($R_{BE} = \text{Infinity}$), V_{CEO}	17V
Collector-Base Voltage, V_{CBO}	35V
Emitter-Base Voltage, V_{EBO}	4V
Collector Current, I_C	12A
Collector Power Dissipation ($T_A = +25^\circ\text{C}$), P_D	1.5W
Collector Power Dissipation ($T_C = +50^\circ\text{C}$), P_D	12.5W
Operating Junction Temperature, T_J	$+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Case, R_{thJC}	10°C/W
Thermal Resistance, Junction-to-Ambient, R_{thJA}	83°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\text{mA}$, $I_E = 0$	35	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50\text{mA}$, $R_{BE} = \text{Infinity}$	17	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 5\text{mA}$, $I_C = 0$	4	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 25\text{V}$, $I_E = 0$	-	-	500	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 3\text{V}$, $I_C = 0$	-	-	500	μA
DC Forward Current Gain	h_{FE}	$V_{CE} = 10\text{V}$, $I_C = 100\text{mA}$, Note 1	10	50	180	
Power Output	P_O	$V_{CC} = 13.5\text{V}$, $P_{in} = 600\text{mW}$, $f = 175\text{MHz}$	6	7	-	W
Collector Efficiency			60	70	-	%

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