

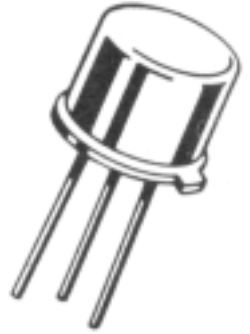
2N3553

Silicon NPN Transistor

RF Power Driver

Description:

The 2N3553 is a silicon NPN transistor in a TO39 type package designed for amplifier and oscillator applications in military and industrial equipment. Suitable for use as an output, driver, or in predriver stages in VHF equipment.



C B E

Features:

- Specified 175MHz, 28V Characteristics:
 - Output Power: 2.5W
 - Minimum Gain: 10dB
 - Efficiency: 50%

Absolute Maximum Ratings:

Collector-Emitter Voltage, V_{CE0}	40V
Collector-Base Voltage, V_{CB} , V_{DG2}	65V
Emitter-Base Voltage, V_{EB} , V_{DG2}	4V
Collector Current, I_C	1A
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	7W
Derate above 25°C	40mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to $+200^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+200^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Sustaining Voltage Voltage	$V_{CEO(sus)}$	$I_C = 200mA, I_B = 0$, Note 1	40	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 0.1mA, I_C = 0$	4	-	-	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 30V, I_B = 0$	-	-	0.1	mA
	I_{CEX}	$V_{CE} = 30V, V_{BE(off)} = 1.5V, T_C = +200^\circ C$	-	-	5.0	mA
		$V_{CE} = 65V, V_{BE(off)} = 1.5V$	-	-	1.0	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 4V, I_C = 0$	-	-	0.1	mA
ON Characteristics						
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 5V$	10	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 250mA, I_B = 50mA$	-	-	1.0	V
Dynamic Characteristics						
Current Gain-Bandwidth Product	f_T	$V_{CE} = 28V, I_C = 100mA, f = 100MHz$	-	500	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 30V, I_E = 0, f = 100kHz$	-	8	10	pF
Functional Tests						
Power Input	P_{in}	$V_{CE} = 28V, P_{out} = 2.5W, f = 175MHz$	-	-	0.25	W
Common-Emitter Amplifier Power Gain	G_{pe}		10	-	-	dB
Collector Efficiency			50	-	-	%

Note 1. Pulsed through a 25mH inductor.