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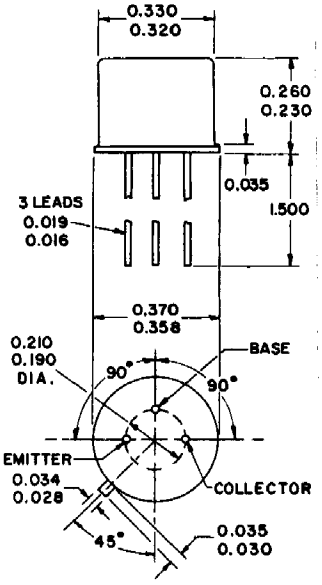
TYPE 2N3553

VHF Silicon NPN Power Transistor

The 2N3553 is a silicon epitaxial planar transistor of NPN structure. This device is intended for large signal, high power oscillator-amplifier application in the VHF-UHF (100MC to 400MC) region. The 2N3553 transistor utilizes a multi-emitter structure consisting of many separate emitter areas interconnected by metal applied on the silicon wafer using advanced photo-etching techniques. This processing technology applied to these transistors results in the high efficiency, high-gain characteristics desirable for UHF operation.



Absolute Maximum Ratings (25°C except where noted)

		2N3553	Units
V_{CBO}	Collector-to-Base Voltage	65	Volts
V_{CEO}	Collector-to-Emitter Voltage with base open	40	Volts
V_{CEV}	Collector-to-Emitter Voltage with V_{BE} = —1.5 volts	65	Volts
V_{EBO}	Emitter-to-Base Voltage	4	Volts
I_C	Collector Current	1.0	Amperes
P_T	Transistor Dissipation at 25°C case temperature	7.0	Watts
	At case temperature above 25°C	Derate linearly to 0 Watts at 200°C	
T_J	Operating Temperature (Junction)	—65 to +200°C	
T_S	Storage Temperature	—65 to +200°C	
Lead Temperature (during soldering)		At distances greater than or equal to 1/32" from insulating wafer from seating plane (TO-39) package for 10 sec. max. ..... 230°C	

Electrical Characteristics (25°C)

SYMBOL	CHARACTERISTICS	TEST CONDITION	MIN	TYP	MAX	UNITS
I_{CEO}	Collector-to-Cutoff Current	V_{CE} = 30V, I_B = 0			0.1	mA
BV_{CBO}	Collector-to-Base Breakdown Voltage	I_E = 0, I_C = 0.3mA	65			Volts
BV_{CEO}	Collector-to-Emitter Breakdown Voltage	I_B = 0, I_C = 0 to 200mA*	40**			Volts
BV_{CEV}	Collector-to-Emitter Breakdown Voltage	V_{BE} = 1.5V, I_C = 0 to 200mA*	65**			Volts
BV_{EBO}	Emitter-to-Base Breakdown Voltage	I_E = 0.1mA, I_C = 0	4			Volts
$V_{CE(sat)}$	Collector-to-Emitter Saturation Voltage	I_B = 50mA, I_C = 250mA			1	Volts
C_{ob}	Collector-to-Base Capacitance measured at 1 Mc	V_{CB} = 30V, I_E = 0			10	pf
P_{OUT}	RF Power Output Amplifier, Unneutralized At 175 Mc Oscillator At 500 Mc	 V_{CE} = 28V V_{CE} = 28V	 2.5†	 1.5††		
f_T	Gain-Bandwidth Product	V_{CE} = 28V, I_C = 100mA		500		
$r_{bb'}$	Base-Spreading Resistance measured at 100 Mc	V_{CE} = 28V, I_C = 100mA		12.0		ohms

Quality Semi-Conductors