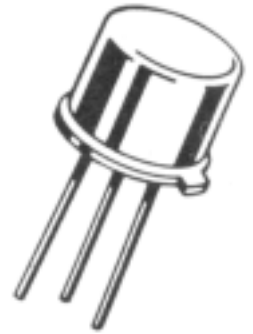


2N3866

Silicon NPN Transistor

Frequency Multiplier and Driver in VHF/UHF Transmitters



C B E

Absolute Maximum Ratings:

Collector-Emitter Voltage, V_{CEO}	30V
Collector-Base Voltage, V_{CBO}	55V
Emitter-Base Voltage, V_{EBO}	3.5V
Continuous Collector Current, I_C	400mA
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	5W
Derate above 25°C	28.6mW/ $^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65°C 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 Breakdown Voltage	$V_{CER(sus)}$	$I_C = 5\text{mA}$, $R_{BE} = 10\ \Omega$	55	-	-	V
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 5\text{mA}$, $I_B = 0$	30	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_F = 100\ \mu\text{A}$, $I_C = 0$	3.5	-	-	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 28\text{V}$, $I_B = 0$	-	-	0.02	mA
	I_{CEX}	$V_{CE} = 30\text{V}$, $V_{BE} = -1.5\text{V}$, $T_C = +200^\circ\text{C}$	-	-	5.0	mA
		$V_{CE} = 55\text{V}$, $V_{BE} = -1.5\text{V}$	-	-	0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 3.5\text{V}$, $I_C = 0$	-	-	0.1	mA
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 50\text{mA}$, $V_{CE} = 5\text{V}$	25	-	200	

Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100\text{mA}, I_B = 20\text{mA}$	-	-	1.0	V
Small-Signal Characteristics						
Current-Gain Bandwidth Product	f_T	$I_C = 50\text{mA}, V_{CE} = 15\text{V}, f = 200\text{MHz}$	800	-	-	MHz
Output Capacitance	C_{obo}	$V_{CB} = 28\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	3.0	pF
Functional Test						
Common Emitter Amplifier Power Gain	G_{PE}	$P_{OUT} = 1\text{W}, V_{CC} = 28\text{V}, f = 400\text{MHz}$	10	-	-	dB
Collector Efficiency		$P_{OUT} = 1\text{W}, V_{CC} = 20\text{V}, f = 400\text{MHz}$	45	-	-	%