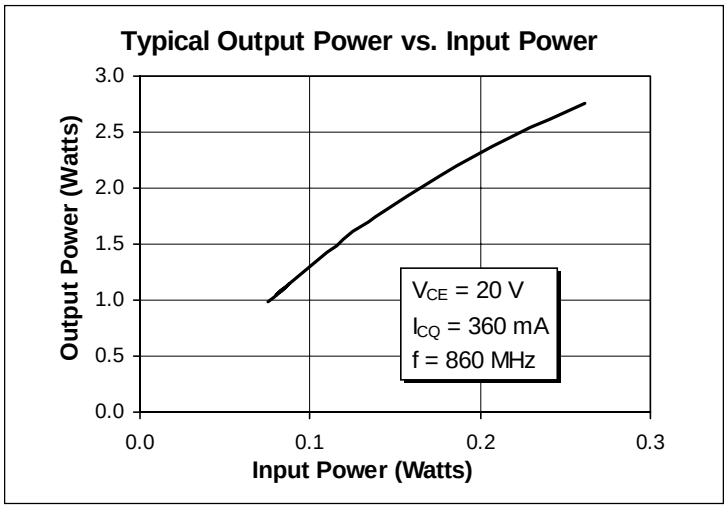
ERICSSON

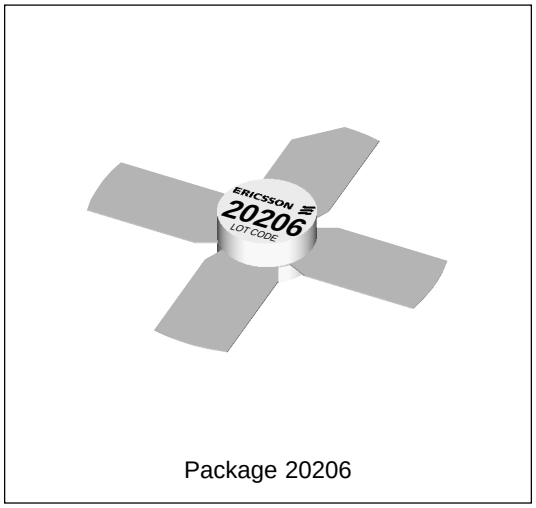
PTB 20206
1.0 Watt, 470–860 MHz
RF Power Transistor

Description

The 20206 is an NPN common emitter RF power transistor intended for 20 Vdc class A operation from 470 to 860 MHz. Rated at 1.0 watt minimum output power, it may be used for both CW and PEP applications. Ion implantation, nitride surface passivation and gold metallization ensure excellent device reliability. 100% lot traceability is standard.

- Class A Characteristics
- 1.0 Watt, 470–860 MHz
- -44 dBc Max Two-tone IMD at 1 W(PEP)
- Gold Metallization
- Silicon Nitride Passivated





Package 20206

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	40	Vdc
Collector-Base Voltage	V_{CBO}	50	Vdc
Emitter-Base Voltage (collector open)	V_{EBO}	4.0	Vdc
Collector Current (continuous)	I_C	1.7	Adc
Total Device Dissipation at T_{flange} = 25°C Above 25°C derate by	P_D	13.5 0.077	Watts W/°C
Storage Temperature Range	T_{STG}	–40 to +150	°C
Thermal Resistance (T_{flange} = 70°C)	$R_{\theta JC}$	13.0	°C/W

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Electrical Characteristics (100% Tested)

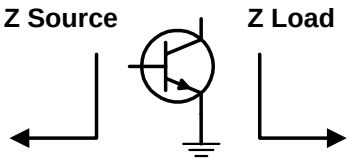
Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Breakdown Voltage C to E	I_C = 5 mA, I_B = 0 A	$V_{(BR)CEO}$	25	30	—	Volts
Breakdown Voltage C to E	V_{BE} = 0 V, I_C = 5 mA	$V_{(BR)CES}$	55	70	—	Volts
Breakdown Voltage C to E	I_B = 0 A, I_C = 5 mA, R_{BE} = 22 Ω	$V_{(BR)CER}$	40	—	—	Volts
Breakdown Voltage E to B	I_C = 0 A, I_E = 5 mA	$V_{(BR)EBO}$	3.5	5	—	Volts
DC Current Gain	V_{CE} = 5 V, I_C = 250 mA	h_{FE}	20	50	120	—
Output Capacitance	V_{cb} = 20 V, I_E = 0 A, f = 1 MHz	Cobo	—	4.5	—	pF

RF Specifications (100% Tested)

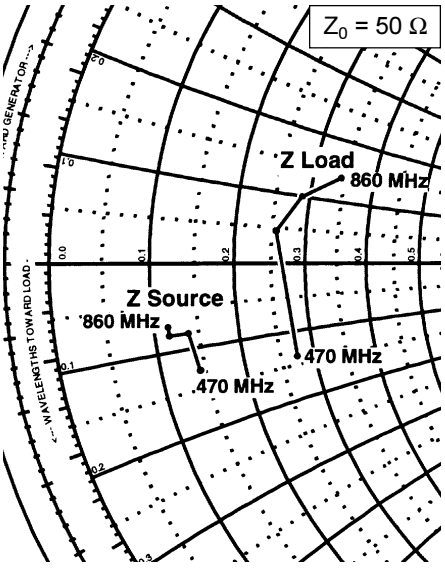
Characteristic	Symbol	Min	Typ	Max	Units
Gain (V_{CE} = 20 Vdc, P_{out} = 1 W, I_{CQ} = 360 mA, f = 860 MHz)	G_{pe}	11	11.5	—	dB
Two-tone Intermodulation Distortion (V_{CE} = 20 Vdc, Pout = 1 W(PEP), I_{CQ} = 360 mA, f_1 = 860 MHz, f_2 = 860.1 MHz),	IM_2	—	-46	-44	dBc
Load Mismatch Tolerance (V_{CE} = 20 Vdc, P_{out} = 2 W, I_{CQ} = 360 mA, f = 860 MHz—all phase angles at frequency of test)	Ψ	—	—	30:1	—

Impedance Data (data shown for fixed-tuned broadband circuit)

(V_{CE} = 20 Vdc, P_{out} = 1 W, I_{CQ} = 360 mA)



Frequency	Z Source		Z Load	
MHz	R	jX	R	jX
470	7.2	-6.4	13.7	-6.9
704	6.9	-4.1	12.8	2.3
782	5.8	-4.1	14.4	5.0
860	5.8	-3.6	17.2	7.0



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