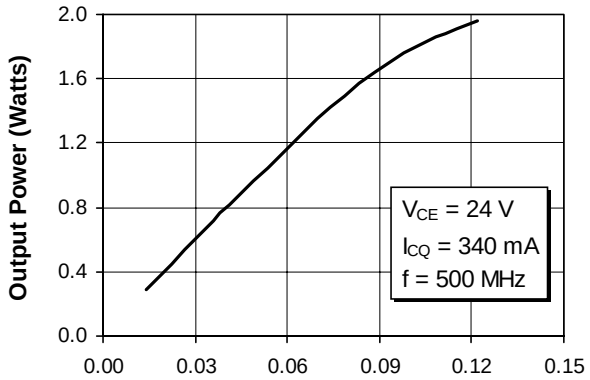
ERICSSON

PTB 20204
1.0 Watt, 380–500 MHz
RF Power Transistor

Description

The 20204 is a class A, NPN, common emitter RF power transistor intended for 24 Vdc operation from 380 to 500 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.

- 1.0 Watt, 380–500 MHz
- Class A Characteristics
- -40 dB Max Two-Tone IMD at 1.0 W(PEP)
- Gold Metallization
- Silicon Nitride Passivated



Package 20227

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	60	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base Voltage (collector open)	V_{EBO}	4.0	Vdc
Collector Current (continuous)	I_C	0.5	Adc
Total Device Dissipation at T_{flange} = 25°C Above 25°C derate by	P_D	11 0.0625	Watts W/°C
Storage Temperature Range	T_{STG}	-40 to +150	°C
Thermal Resistance (T_{flange} = 70°C)	$R_{\theta JC}$	16	°C/W

9/28/98

ERICSSON

Electrical Characteristics (100% Tested)

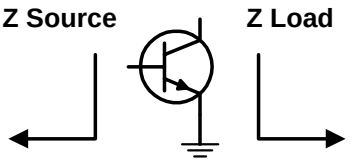
Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Breakdown Voltage C to E	I_B = 0 A, I_C = 5 mA	$V_{(BR)CEO}$	25	30	—	Volts
Breakdown Voltage C to E	V_{BE} = 0 V, I_C = 5 mA	$V_{(BR)CES}$	70	—	—	Volts
Breakdown Voltage E to B	I_C = 0 A, I_E = 5 mA	$V_{(BR)EBO}$	4	5	—	Volts
DC Current Gain	V_{CE} = 5 V, I_C = 250 mA	h_{FE}	20	40	—	—
Output Capacitance	V_{CB} = 24 V, I_E = 0 A, f = 1 MHz	C_{obo}	—	4.4	—	pF

RF Specifications (100% Tested)

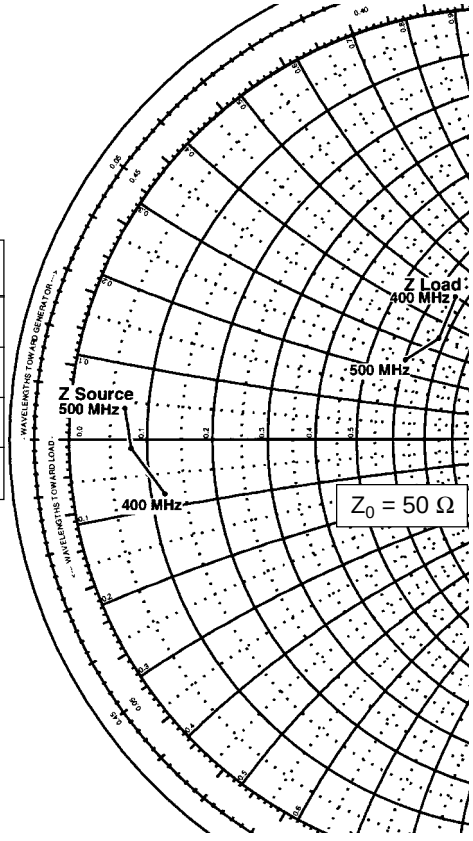
Characteristic	Symbol	Min	Typ	Max	Units
Gain (V_{CE} = 24 Vdc, P_{out} = 1.0 W, I_{CQ} = 340 mA, f = 500 MHz)	G_{pe}	12.5	13.5	—	dB
Two-Tone Intermodulation Distortion (V_{CE} = 24 Vdc, P_{out} = 1.0 W(PEP), I_{CQ} = 340 mA, f_1 = 500 MHz, f_2 = 501 MHz)	IM_2	—	-44	-40	dB
Load Mismatch Tolerance (V_{CE} = 24 Vdc, P_{out} = 2 W, I_{CQ} = 340 mA, f = 500 MHz—all phase angles at frequency of test)	Ψ	—	—	30:1	—

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

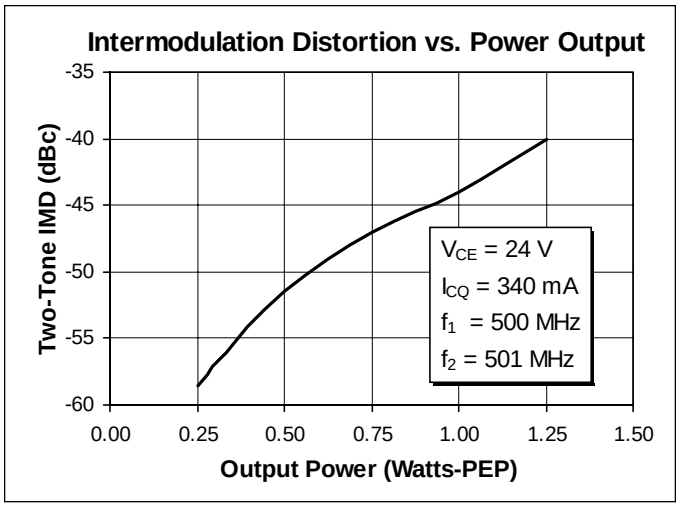
(V_{CE} = 24 Vdc, Pout = 1.0 W, I_{CQ} = 340 mA)



Frequency	Z Source		Z Load	
MHz	R	jX	R	jX
400	6.0	-4.0	33.2	24.9
450	3.9	-0.6	34.0	17.3
500	3.4	2.1	30.1	12.2



Typical Performance



Ericsson Components
RF Power Products
675 Jarvis Drive
Morgan Hill, CA 95037 USA
Telephone: 408-778-9434

1-877-GOLDMOS
(1-877-465-3667)
e-mail: rfpower@ericsson.com
www.ericsson.com/rfpower

EUS/KR 1301-PTB 20204 Uen Rev. B 09-28-98