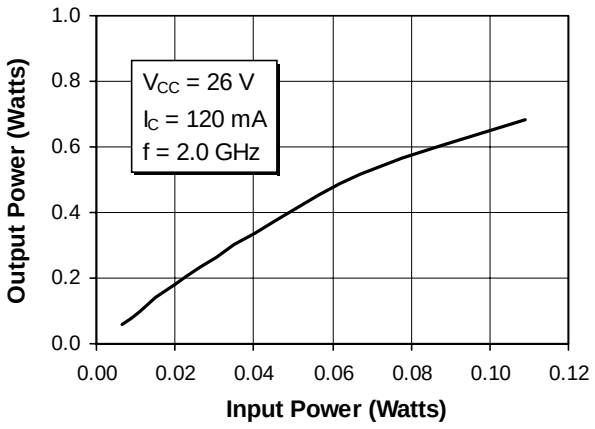
ERICSSON

PTB 20179
0.4 Watt, 1.8–2.0 GHz
Cellular Radio RF Power Transistor

Description

The 20179 is an NPN, common emitter RF power transistor intended for class A, 26 Vdc operation from 1.8 to 2.0 GHz. Rated at 0.4 watt minimum output power, it may be used for both CW and PEP applications. Ion implantation, nitride surface passivation and gold metallization are used to ensure excellent device reliability. 100% lot traceability is standard.

- 0.4 Watt, 1.8–2.0 GHz
- Class A Characteristics
- Gold Metallization
- Silicon Nitride Passivated
- Surface Mountable
- Available in Tape and Reel



Package 20227

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	50	Vdc
Collector-Base Voltage	V_{CBO}	50	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	5.4 0.031	Watts W/°C
Storage Temperature Range	T_{STG}	–40 to +150	°C
Thermal Resistance (T_{flange} = 70°C)	$R_{\theta JC}$	32.3	°C/W

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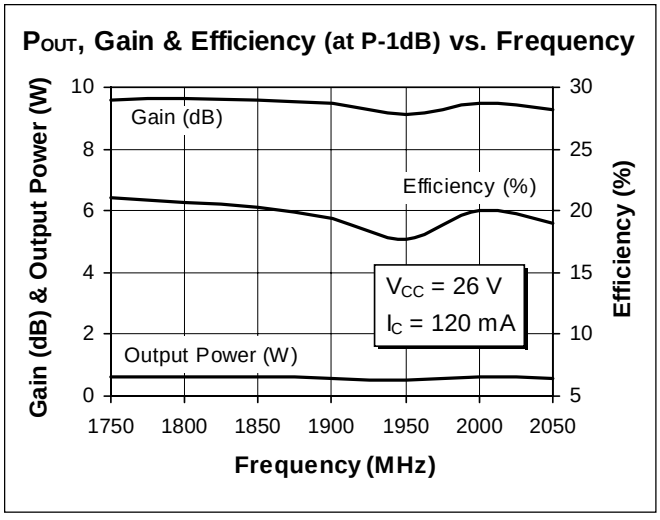
Electrical Characteristics (100% Tested)

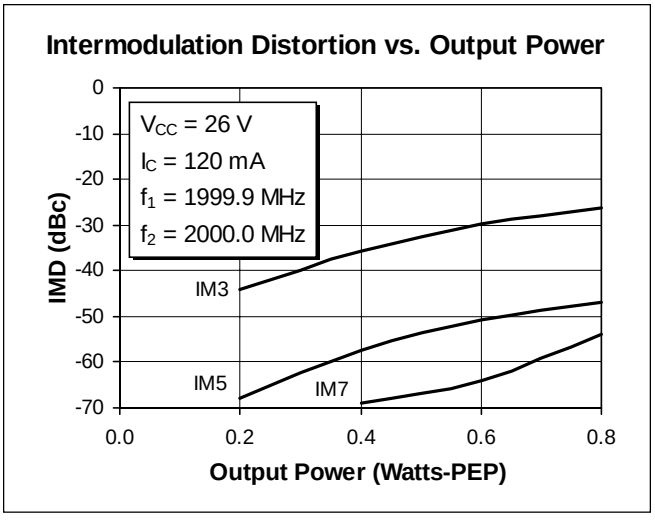
Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Breakdown Voltage C to E	I_B = 0 A, I_C = 10 mA, R_{BE} = 22 Ω	$V_{(BR)CER}$	50	—	—	Volts
Breakdown Voltage C to E	V_{BE} = 0 V, I_C = 5 mA	$V_{(BR)CES}$	50	—	—	Volts
Breakdown Voltage E to B	I_C = 0 A, I_E = 5 mA	$V_{(BR)EBO}$	4	5	—	Volts
DC Current Gain	V_{CE} = 5 V, I_C = 250 mA	h_{FE}	20	40	—	—

RF Specifications (100% Tested)

Characteristic	Symbol	Min	Typ	Max	Units
Gain (V_{CC} = 26 Vdc, P_{out} = 0.2 W, I_C = 120 mA, f = 2.0 GHz)	G_{pe}	8	10	—	dB
Output Power at 1 dB Compressed (V_{CC} = 26 Vdc, I_C = 120 mA, f = 2.0 GHz)	P-1dB	0.4	0.6	—	Watts
Load Mismatch Tolerance (V_{CC} = 26 Vdc, P_{out} = 0.2 W, I_C = 120 mA, f = 2.0 GHz—all phase angles at frequency of test)	Ψ	—	—	5:1	—

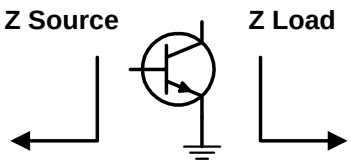
Typical Performance



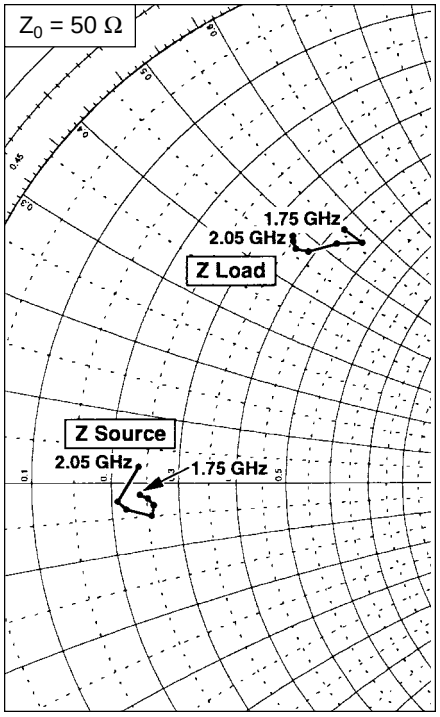


Impedance Data

V_{CC} = 26 Vdc, P_{out} = 0.2 W, I_C = 120 mA



Frequency	Z Source		Z Load	
GHz	R	jX	R	jX
1.75	12.0	-0.9	20.8	28.0
1.80	12.6	-1.2	23.3	28.3
1.85	13.0	-1.7	21.2	26.3
1.90	12.8	-2.5	19.4	23.8
1.95	11.0	-1.9	18.2	23.2
2.00	10.4	-1.3	17.5	23.7
2.05	11.9	1.2	17.2	24.0



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

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