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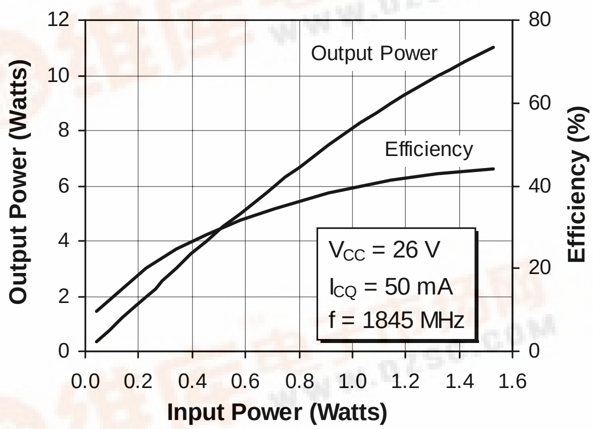
PTB 20264
10 Watts, 1.8–1.9 GHz
Cellular Radio RF Power Transistor

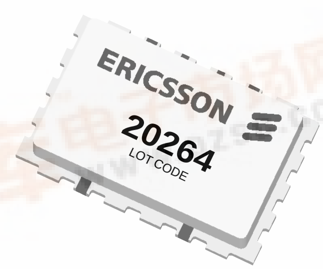
Description

The 20264 is an NPN, common emitter RF power transistor intended for 26 Vdc class AB operation from 1.8 to 1.9 GHz. Rated at 10 watts 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.

- 26 Volt, 1.845 GHz Characteristics
  - Output Power = 10 Watts
  - Gain = 9.4 dB Typ at 5 Watts
- Class AB Characteristics
- Gold Metallization
- Silicon Nitride Passivated
- Surface Mountable
- Available in Tape and Reel

Typical Output Power and Efficiency vs. Input Power





Package 20243

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage, R_{BE} = 10 Ω	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	2.0	Adc
Total Device Dissipation at T_{flange} = 25°C Above 25°C derate by	P_D	30 0.173	Watts W/°C
Storage Temperature Range	T_{STG}	–40 to +150	°C
Thermal Resistance (T_{flange} = 70°C)	$R_{\theta JC}$	5.8	°C/W

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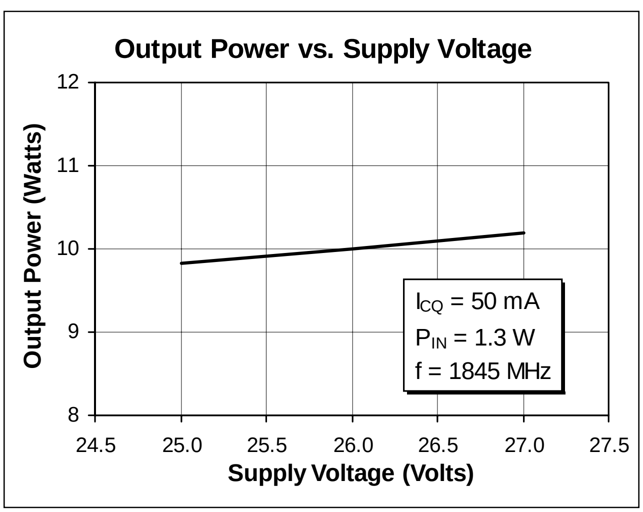
Electrical Characteristics (100% Tested)

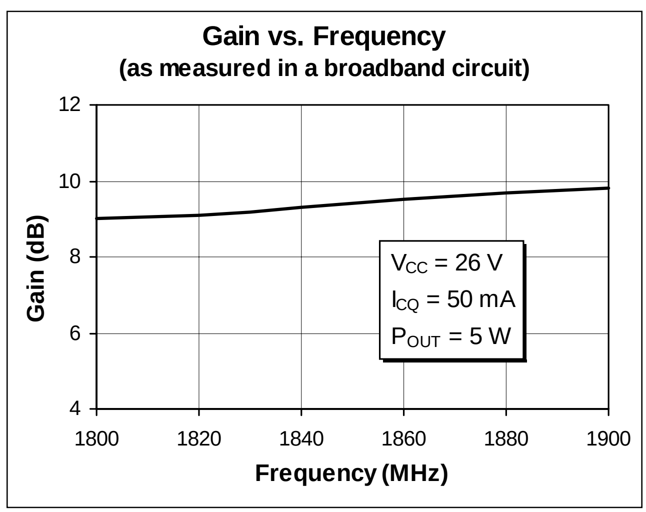
Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Breakdown Voltage C to E	$I_B = 0$ A, $I_C = 10$ mA	$V_{(BR)CEO}$	22	26	—	Volts
Breakdown Voltage C to E	$V_{BE} = 0$ V, $I_C = 10$ mA	$V_{(BR)CES}$	55	60	—	Volts
Breakdown Voltage E to B	$I_C = 0$ A, $I_E = 5$ mA	$V_{(BR)EBO}$	3.5	5	—	Volts
DC Current Gain	$V_{CE} = 5$ V, $I_C = 250$ mA	h_{FE}	20	50	120	—

RF Specifications (100% Tested)

Characteristic	Symbol	Min	Typ	Max	Units
Gain at P_{OUT} = 5 Watts (V_{CC} = 26 Vdc, I_{CQ} = 50 mA, f = 1805 MHz, 1845 MHz, 1880 MHz)	G_{pe}	9.0	9.4	—	dB
Gain Compression at P_{OUT} = 5 Watts (V_{CC} = 26 Vdc, I_{CQ} = 50 mA, f = 1805 MHz, 1845 MHz, 1880 MHz)	—	—	—	0.2	dB
Gain at P_{OUT} = 10 Watts (V_{CC} = 26 Vdc, I_{CQ} = 50 mA, f = 1845 MHz)	G_{pe}	8.4	—	—	dB
Gain Compression at P_{OUT} = 10 Watts (V_{CC} = 26 Vdc, I_{CQ} = 50 mA, f = 1845 MHz)	—	—	—	0.8	dB
Collector Efficiency at P_{OUT} = 10 Watts (V_{CC} = 26 Vdc, I_{CQ} = 50 mA, f = 1845 MHz)	η_C	40	—	—	%
Load Mismatch Tolerance (V_{CC} = 26 Vdc, P_{OUT} = 10 W, I_{CQ} = 50 mA, f = 1845 MHz—all phase angles at frequency of test)	Ψ	—	—	5:1	—

Typical Performance





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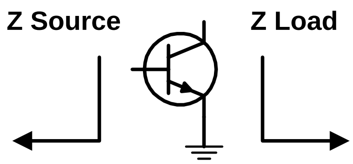
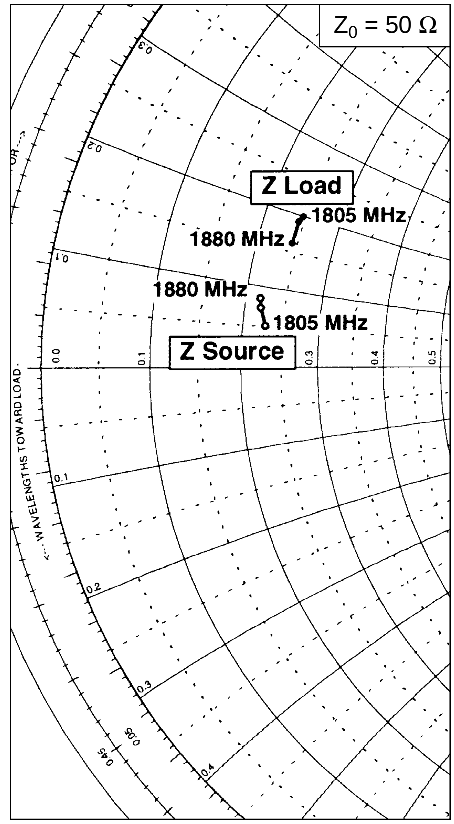
Impedance Data (data shown for fixed-tuned broadband circuit)

V_{CC} = 26 Vdc, P_{OUT} = 10 W, I_{CQ} = 50 mA





Frequency	Z Source		Z Load	
GHz	R	jX	R	jX
1805	11.4	2.6	12.2	8.1
1850	11.0	3.7	12.2	9.6
1880	10.9	4.3	12.4	10.6

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