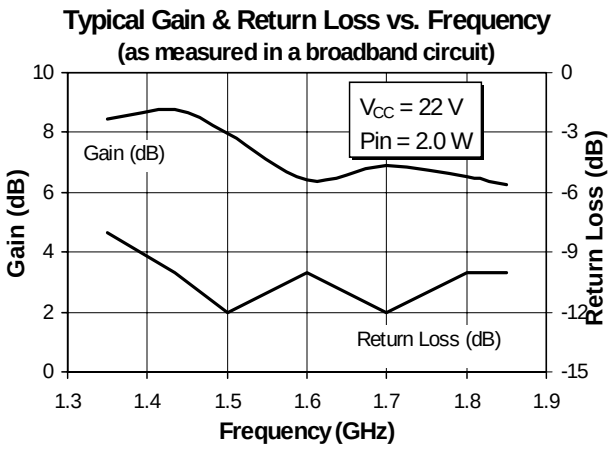
ERICSSON

PTB 20156
8 Watts, 1350–1850 MHz
Microwave Power Transistor

Description

The 20156 is an NPN, common base RF power transistor intended for 22 Vdc operation from 1350 to 1850 MHz. Rated at 8 watts 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.

- Specified 22 Volts
- Class C Characteristics
- Output Power: 8 Watts
- Gain: 6.0 dB Min. at 8 Watts
- Gold Metallization
- Silicon Nitride Passivated



Package 20209

Maximum Ratings

Parameter	Symbol	Value	Unit
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	52 0.29	Watts W/°C
Storage Temperature Range	T_{STG}	–40 to +150	°C
Thermal Resistance (T_{flange} = 70°C)	$R_{\theta JC}$	3.4	°C/W

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Electrical Characteristics (100% Tested)

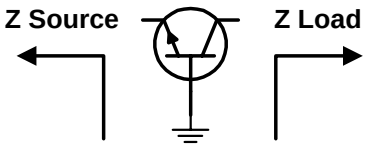
Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Breakdown Voltage C to E	V_{BE} = 0 V, I_C = 5 mA	$V_{(BR)CES}$	50	—	—	Volts
Breakdown Voltage E to B	I_C = 0 A, I_E = 5 mA	$V_{(BR)EBO}$	3.5	5	—	Volts
DC Current Gain	V_{CE} = 5 V, I_C = 1 A	h_{FE}	—	—	100	—

RF Specifications (100% Tested)

Characteristic	Symbol	Min	Typ	Max	Units
Gain (V_{CC} = 22 Vdc, P_{out} = 8 W, f = 1850 MHz)	G_{pe}	6.0	—	—	dB
Collector Efficiency (V_{CC} = 22 Vdc, P_{out} = 8 W, f = 1850 MHz)	η_C	40	50	—	%
Load Mismatch Tolerance (V_{CC} = 22 Vdc, P_{out} = 8 W, f = 1850 MHz —all phase angles at frequency of test)	Ψ	—	—	5:1	—

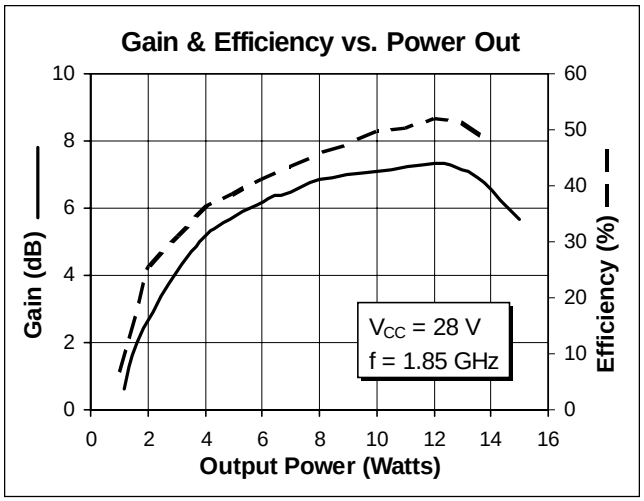
Impedance Data (data shown for fixed-tuned broadband circuit)

(V_{CC} = 22 Vdc, P_{out} = 20 W)



Frequency	Z Source		Z Load	
MHz	R	jX	R	jX
1350	13.8	-14.0	4.2	0.0
1500	11.2	-12.8	5.6	0.5
1700	10.7	-8.4	6.0	-1.5
1850	20.0	-9.3	4.2	-2.1

Typical Performance



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