

PTB 20258

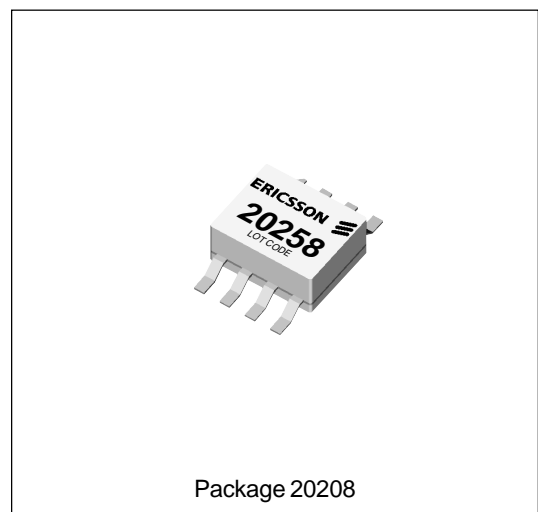
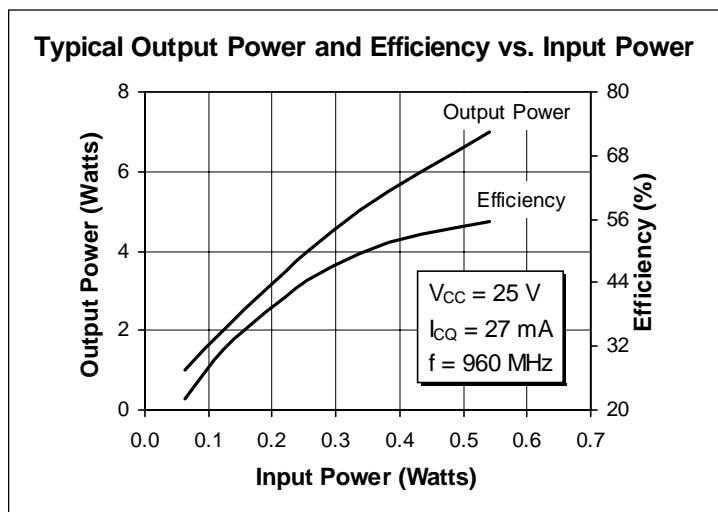
6 Watts, 915–960 MHz

Cellular Radio RF Power Transistor

Description

The 20258 is a class AB, NPN, common emitter RF power transistor intended for 25 Vdc operation from 915 to 960 MHz. Rated at 6 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.

- 6 Watts, 915–960 MHz
- Class AB Characteristics
- 50% Typ Collector Efficiency at 6 Watts
- Tested to solderability standards:
 - IEC-68-2-54
 - ANSI/J Std-002-A
- Gold Metallization
- Silicon Nitride Passivated



Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CER}	55	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base Voltage (collector open)	V_{EBO}	4.0	Vdc
Collector Current (continuous)	I_C	1.7	Adc
Total Device Dissipation at $T_{flange} = 25^{\circ}C$ Above $25^{\circ}C$ derate by	P_D	22 0.125	Watts W/ $^{\circ}C$
Storage Temperature Range	T_{stg}	-40 to +150	$^{\circ}C$
Thermal Resistance ($T_{flange} = 70^{\circ}C$)	$R_{\theta JC}$	8	$^{\circ}C/W$

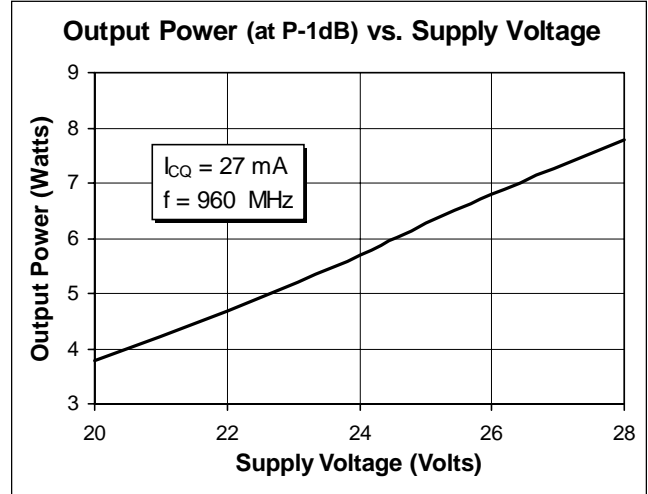
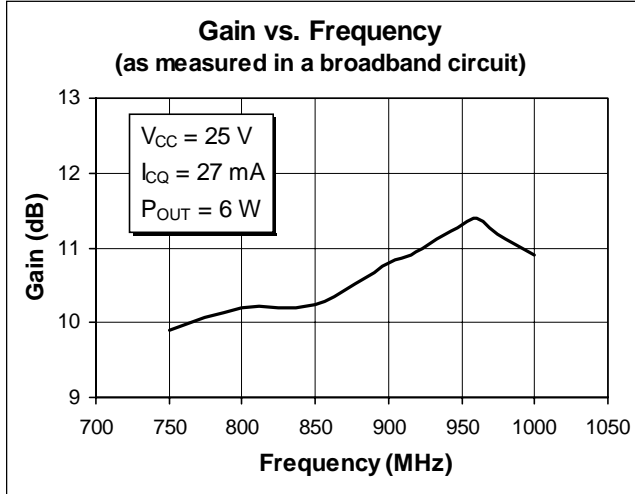
Electrical Characteristics (100% Tested)

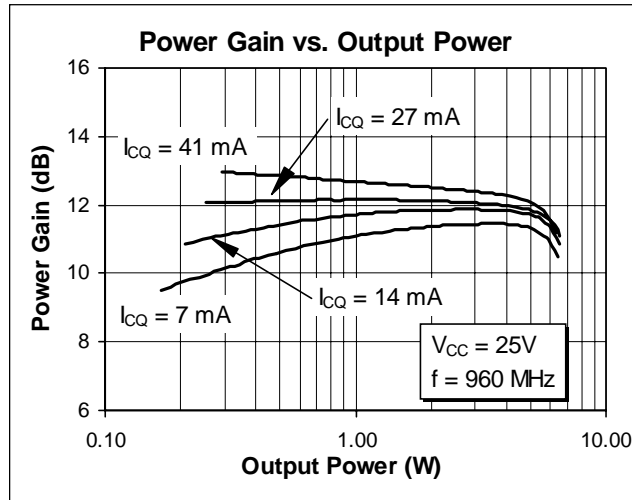
Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Breakdown Voltage C to E	$I_B = 0\text{ A}, I_C = 50\text{ mA}$	$V_{(BR)CEO}$	28	29	—	Volts
Breakdown Voltage C to E	$V_{BE} = 0\text{ V}, I_C = 50\text{ mA}$	$V_{(BR)CES}$	60	70	—	Volts
Breakdown Voltage E to B	$I_C = 0\text{ A}, I_E = 5\text{ mA}$	$V_{(BR)EBO}$	3.5	5	—	Volts
DC Current Gain	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	h_{FE}	20	50	120	—

RF Specifications (100% Tested)

Characteristic	Symbol	Min	Typ	Max	Units
Gain ($V_{CC} = 25\text{ Vdc}, P_{out} = 6\text{ W}, I_{CQ} = 27\text{ mA}, f = 960\text{ MHz}$)	G_{pe}	10	11	—	dB
Collector Efficiency ($V_{CC} = 25\text{ Vdc}, P_{out} = 6\text{ W}, I_{CQ} = 27\text{ mA}, f = 960\text{ MHz}$)	η_C	—	50	—	%
Load Mismatch Tolerance ($V_{CC} = 25\text{ Vdc}, P_{out} = 6\text{ W}, I_{CQ} = 27\text{ mA}, f = 960\text{ MHz}$ —all phase angles at frequency of test)	Ψ	—	—	30:1	—

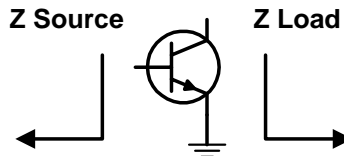
Typical Performance





Impedance Data

($V_{CC} = 25\text{ Vdc}$, $P_{out} = 6\text{ W}$, $I_{CQ} = 27\text{ mA}$)



Frequency MHz	Z Source		Z Load	
	R	jX	R	jX
1000.00	3.02	-1.05	88.10	12.00
980.00	3.10	-1.22	9.04	13.00
960.00	3.19	-1.35	9.06	14.10
950.00	3.29	-1.55	9.20	14.36
915.00	3.79	-1.95	9.50	15.98
900.00	3.60	-2.06	10.10	16.83
850.00	3.87	-2.04	11.67	17.20
800.00	3.90	-2.66	12.60	17.80
750.00	4.15	-3.00	13.80	18.87

