

# PTB 20145

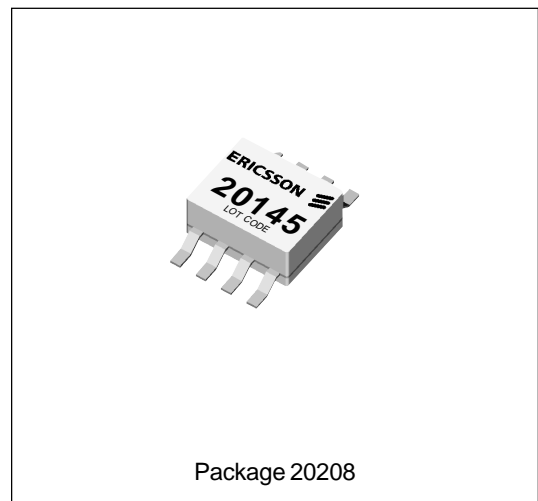
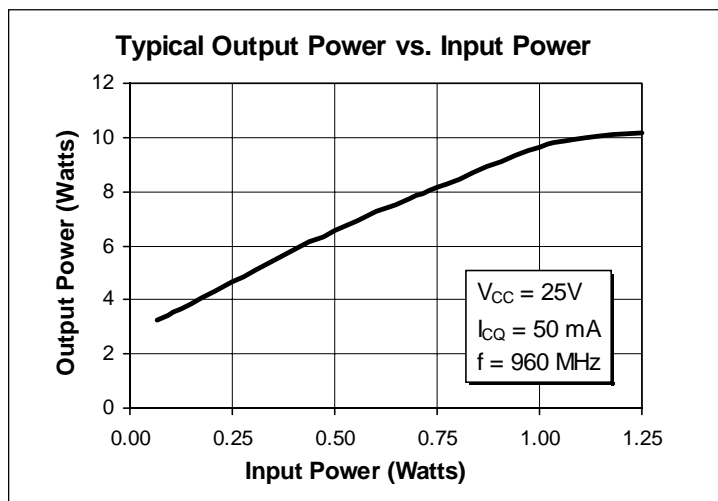
## 9 Watts, 915–960 MHz

### Cellular Radio RF Power Transistor

#### Description

The 20145 is a class AB, NPN, common emitter RF power transistor intended for 25 Vdc operation from 915 to 960 MHz. Rated at 9 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.

- 9 Watts, 915–960 MHz
- Class AB Characteristics
- 50% Min Collector Efficiency at 9 Watts
- Tested to solderability standards:
  - IEC-68-2-54
  - ANSI/J Std-002-A
- Gold Metallization
- Silicon Nitride Passivated
- Surface Mountable
- Available in Tape and Reel



#### 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)	$I_C$	2.6	Adc
Total Device Dissipation at $T_{flange} = 25^{\circ}C$ Above $25^{\circ}C$ derate by	$P_D$	33 0.19	Watts W/ $^{\circ}C$
Storage Temperature Range	$T_{STG}$	-40 to +150	$^{\circ}C$
Thermal Resistance ( $T_{flange} = 70^{\circ}C$ )	$R_{\theta JC}$	5.3	$^{\circ}C/W$

**Electrical Characteristics** (100% Tested)

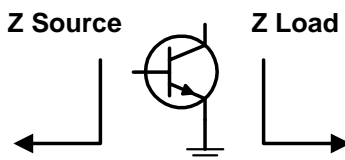
Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Breakdown Voltage C to E	$I_B = 0\text{ A}, I_C = 50\text{ mA}$	$V_{(BR)CEO}$	24	30	—	Volts
Breakdown Voltage C to E	$V_{BE} = 0\text{ V}, I_C = 50\text{ mA}$	$V_{(BR)CES}$	65	70	—	Volts
Breakdown Voltage E to B	$I_C = 0\text{ A}, I_E = 250\text{ mA}$	$V_{(BR)EBO}$	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
<b>Gain</b> ( $V_{CC} = 25\text{ Vdc}, P_{out} = 9\text{ W}, I_{CQ} = 50\text{ mA}, f = 960\text{ MHz}$ )	$G_{pe}$	9	10	—	dB
<b>Collector Efficiency</b> ( $V_{CC} = 25\text{ Vdc}, P_{out} = 9\text{ W}, I_{CQ} = 50\text{ mA}, f = 960\text{ MHz}$ )	$\eta_C$	50	—	—	%
<b>Load Mismatch Tolerance</b> ( $V_{CC} = 25\text{ Vdc}, P_{out} = 9\text{ W}, I_{CQ} = 50\text{ mA}, f = 960\text{ MHz}$ —all phase angles at frequency of test)	$\Psi$	—	—	30:1	—

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

( $V_{CC} = 25\text{ Vdc}, P_{out} = 9\text{ W}, I_{CQ} = 50\text{ mA}$ )



Frequency	Z Source		Z Load	
	R	jX	R	jX
915	2.2	-2.5	3.4	7.1
937	2.2	-2.4	3.5	7.9
960	2.1	-2.2	3.7	8.6

