

# PTB 20155

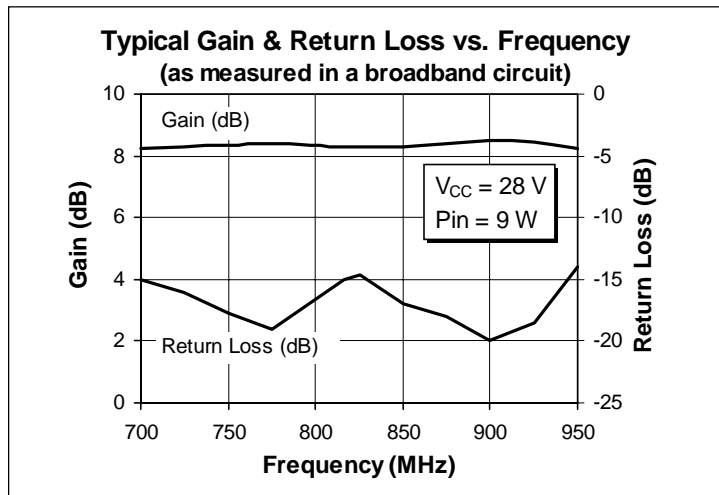
## 9 Watts, 610–960 MHz

### UHF Power Transistor

#### Description

The 20155 is an NPN common base RF power transistor intended for 28 Vdc class C operation from 610 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, 610–960 MHz
- Class C Characteristics
- Gold Metallization
- Silicon Nitride Passivated



#### Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CER}$	40	Vdc
Collector-Base Voltage	$V_{CBO}$	50	Vdc
Emitter-Base Voltage (collector open)	$V_{EBO}$	4	Vdc
Collector Current (continuous)	$I_C$	6.7	Adc
Total Device Dissipation at $T_{flange} = 25^{\circ}C$ Above 25°C derate by	$P_D$	65 0.37	Watts W/°C
Storage Temperature Range	$T_{STG}$	-40 to +150	°C
Thermal Resistance ( $T_{flange} = 70^{\circ}C$ )	$R_{\theta JC}$	2.7	°C/W

## Electrical Characteristics (100% Tested)

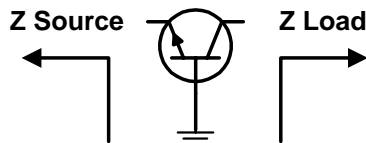
Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Breakdown Voltage C to E	$V_{BE} = 0\text{ V}, I_C = 5\text{ mA}$	$V_{(BR)CES}$	50	—	—	Volts
Breakdown Voltage E to B	$I_C = 0\text{ A}, I_E = 5\text{ mA}$	$V_{(BR)EBO}$	3.5	—	—	Volts
DC Current Gain	$V_{CE} = 5\text{ V}, I_C = 300\text{ mA}$	$h_{FE}$	25	—	100	—
Output Capacitance	$V_{CB} = 28\text{ V}, I_E = 0\text{ A}, f = 1\text{ MHz}$	$C_{ob}$	—	10.5	11	pF
Collector Cut-off Current	$V_{CB} = 28\text{ V}, I_E = 0\text{ A}$	$I_{CBO}$	—	—	1.5	mA

## RF Specifications (100% Tested)

Characteristic	Symbol	Min	Typ	Max	Units
<b>Gain</b> ( $V_{CC} = 28\text{ Vdc}, P_{out} = 9\text{ W}, f = 960\text{ MHz}$ )	$G_{pe}$	8.0	9.0	—	dB
<b>Collector Efficiency</b> ( $V_{CC} = 28\text{ Vdc}, P_{out} = 9\text{ W}, f = 960\text{ MHz}$ )	$\eta_C$	45	53	—	%

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

( $V_{CC} = 28\text{ Vdc}, P_{out} = 9\text{ W}$ )



Frequency	Z Source		Z Load	
	R	jX	R	jX
850	4.4	-10.7	8.6	3.6
900	6.4	-10.0	9.3	4.9
960	6.4	-14.3	7.8	3.1

