



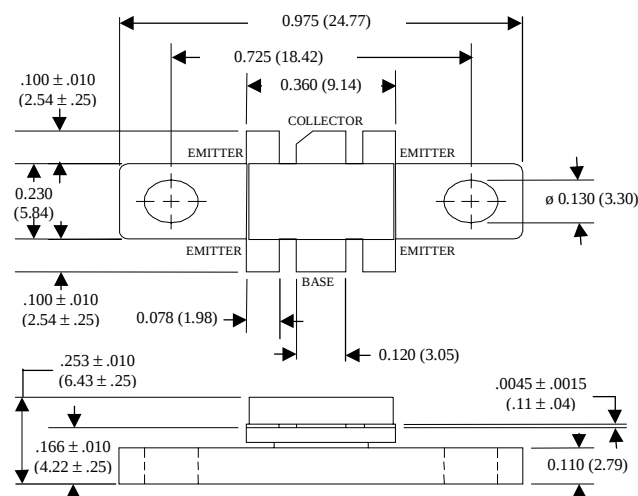
Wireless Power Transistor 15 Watts, 850 - 960 MHz



Features

- Designed for Linear Amplifier Applications
- Class AB: -30 dBc Typ 3rd IMD at 15 Watts PEP
- Common Emitter Configuration
- Internal Input Impedance Matching
- Diffused Emitter Ballasting

Outline Drawing¹

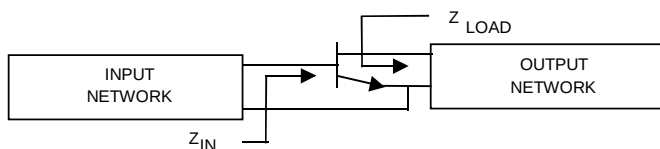


Notes: (unless otherwise specified)

1. Tolerances are: inches $\pm .005$ " (millimeters ± 0.13 mm)

Absolute Maximum Rating at 25°C

Parameter	Symbol	Rating	Units
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	1.8	A
Dissipation @ 25°C	P_D	43	W
Storage Temperature	T_{stg}	-55 to +150	°C
Junction Temperature	T_j	200	°C
Thermal Resistance	θ_{jc}	3.5	°C/W



Typical Optimum Device Impedance

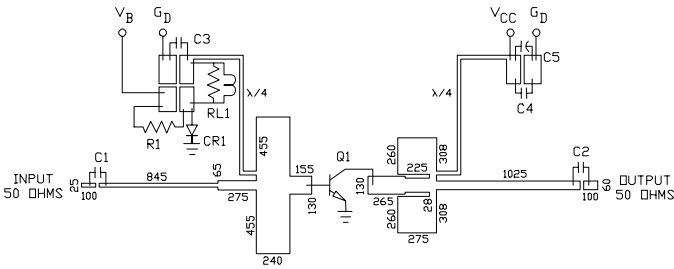
F (MHz)	$Z_{in} (\Omega)$	$Z_{load} (\Omega)$
850	$2.5 + j3.6$	$4.3 + j2.6$
900	$2.9 + j2.4$	$4.4 + j3.4$
960	$1.5 + j2.0$	$4.3 + j3.9$

Electrical Specifications at 25°C

Symbol	Parameter	Test Conditions	Min	Max	Units
BV_{CES}	Collector-Emitter Breakdown	$I_C=15\text{mA}$	60	-	V
I_{CES}	Collector-Emitter Leakage	$V_{CE}=24.0\text{ V}$	-	2.0	mA
BV_{CEO}	Collector-Emitter Breakdown	$I_C=40\text{ mA}$	24	-	V
BV_{EBO}	Emitter-Base Breakdown	$I_B=2.5\text{ mA}$	3.0	-	V
h_{FE}	DC Forward Current Gain	$V_{CE}=5.0\text{ V}, I_C=0.5\text{ A}$	15	120	-
G_P	Power Gain	$V_{CC}=24\text{ V}, I_{CQ}=100\text{ mA}, P_{out}=15\text{W}, f=900\text{ MHz}$	12	-	dB
η	Collector Efficiency	$V_{CC}=24\text{ V}, I_{CQ}=100\text{ mA}, P_{out}=15\text{W}, f=900\text{ MHz}$	50	-	%
R_L	Input Return Loss	$V_{CC}=24\text{ V}, I_{CQ}=100\text{ mA}, P_{out}=15\text{W}, f=900\text{ MHz}$	10	-	dB
VSWR	Load Mismatch Tolerance	$V_{CC}=24\text{ V}, I_{CQ}=100\text{ mA}, P_{out}=15\text{W PEP}, f=900\text{ MHz}, \Delta f=100\text{ kHz}$	-	10:1	-
IMD ₃	3rd Order IMD	$V_{CC}=24\text{ V}, I_{CQ}=100\text{ mA}, P_{out}=15\text{W PEP}, f=900\text{ MHz}, \Delta f=100\text{ kHz}$	-	-30	dBc

V2.00

Electrical Schematic¹



Notes:
1. Dimensions are in mils.

Electrical Schematic Parts List

C1, C2, C3	100 pF ATC Size A
C4	5000 pF ATC Size B
C5	50 uF 50 Volts
CR1	Diode cathode tied to flange (Harris 1N4245)
Q1	PH0810-15
R1	5 Ohms ¼ W
RL1	10T / No. 22 AWG on 3.1 Ohm ¼ Watt
Board Type	Rogers 6010.5 .025" thick, E _R = 10.5

