

UTV8100B

100 Watts Pk, 28 Volt, Class AB
UHF Television - Band IV & V

GENERAL DESCRIPTION

The UTV8100B is a COMMON EMITTER transistor capable of providing 100 Watt Peak, Class AB, RF Output Power over the band 470 - 860 MHz. The transistor includes double input and output prematching for full broadband capability. Gold Metalization and Diffused Ballasting are used to provide high reliability and supreme ruggedness.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 290 Watts

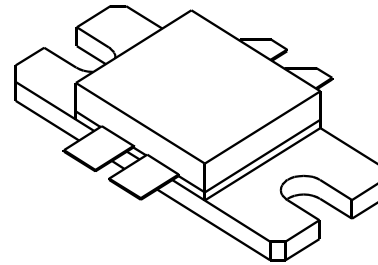
Maximum Voltage and Current

BV _{ceo}	Collector to Emitter Voltage	65 Volts
BV _{ceo}	Collector to Emitter Voltage	30 Volts
BV _{ebo}	Emitter to Base Voltage	3.5 Volts
I _c	Collector Current	15 Amps

Maximum Temperatures

Storage Temperature	-40 to + 150°C
Operating Junction Temperature	+ 200 °C

CASE OUTLINE 55RT, STYLE 2



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{ldB}	Power Out - 1 dB Compression	F = 470 - 860 MHz	100	110		Watts
P_{in}	Power Input	V _{cc} = 28 Volts			14.0	Watts
P_{o - ref}	Power Output - Linear	I _{cq} = 300 mA (total)	25			Watts
P_g	Power Gain - Small Sig		8.5	9.5		dB
η	Efficiency		55	58		%
VSWR	Load Mismatch Tolerance	P _{out} = 25 Watts Pk	5:1			

* European Test Method, Vision = -8 dB, Sideband = - 16 dB, Sound = - 7 dB

BV_{ceo}	Collector to Emitter Breakdown	I _c = 25 mA	30			Volts
BV_{ces}	Collector to Emitter Breakdown	I _c = 25 mA	60			Volts
BV_{ebo}	Emitter to Base Breakdown	I _e = 30 mA	3.5			Volts
H_{fe}	Current Gain	V _{ce} = 5 V, I _c = 1 A	20		120	
C_{ob}	Output Capacitance - (each side)*	V _{cb} = 28V, F=1MHz		44		pF
R_{θjc}	Thermal Resistance	T _c = 25 °C			0.6	°C/W

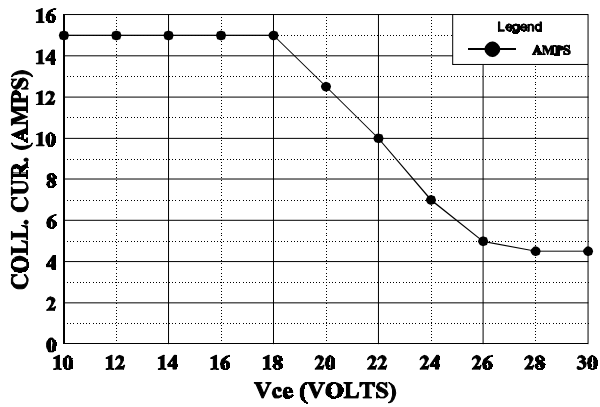
* Not measureable due to internal prematch network

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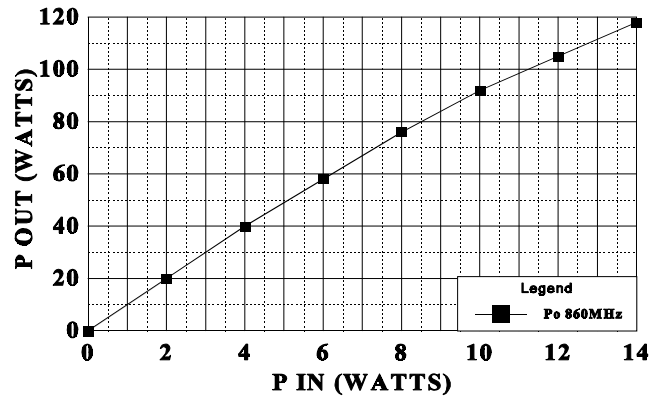
UTV8100B

DC SAFE OPERATING AREA



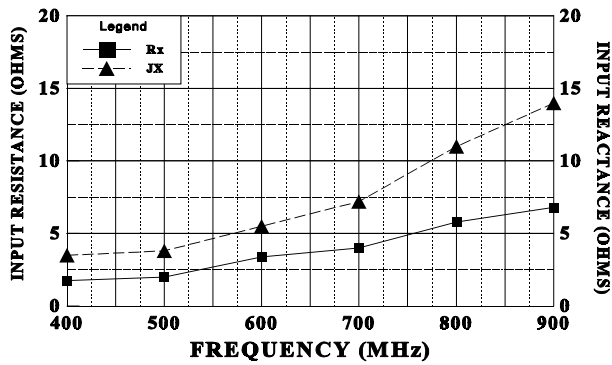
POWER OUTPUT vs POWER INPUT

Vcc = 28 V, Frequency 860MHz



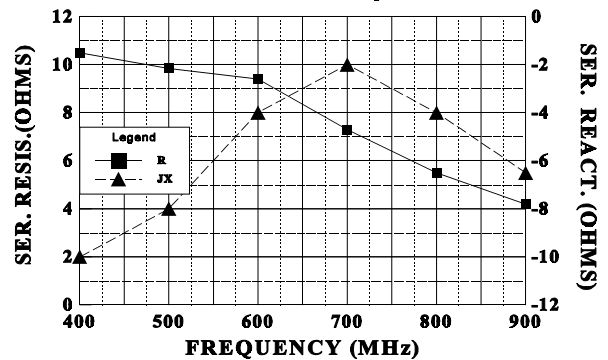
INPUT IMPEDANCE vs FREQUENCY

Vcc = 28 V, Po = 100 W, Icq = 200 mA



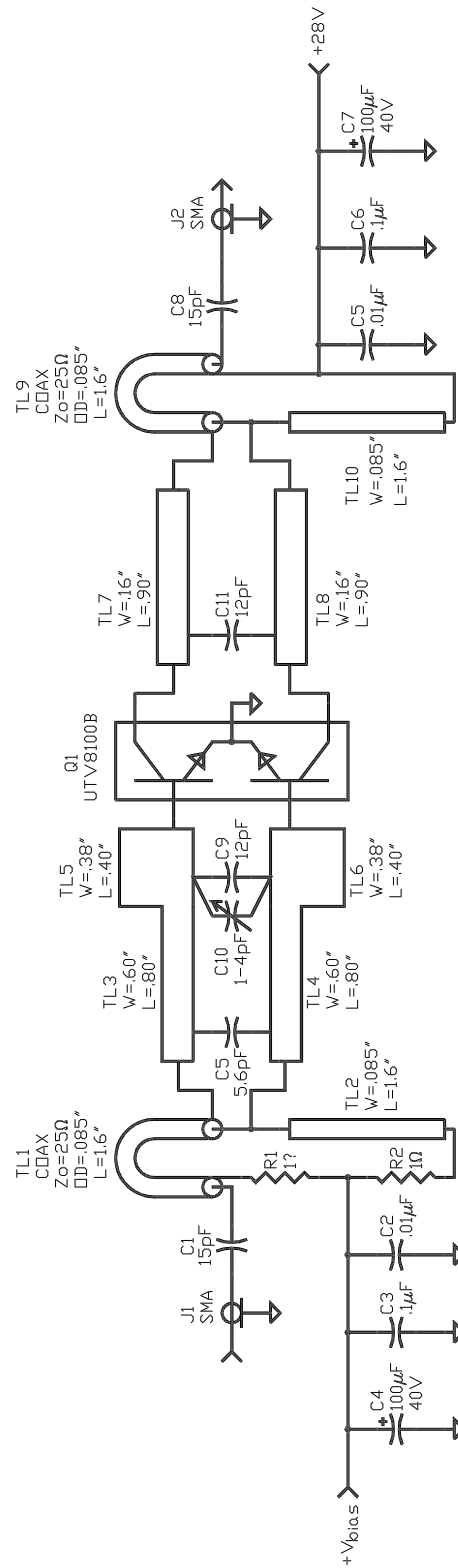
LOAD IMPEDANCE vs FREQUENCY

Vcc = 28 V, Pout = 100W, Icq = 200 mA



REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
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Board type: PTFE/GLASS
Board thickness: .031"
Copper weight: 1oz
All dimensions are in inches.



CHz TECHNOLOGY

CAGE
0PJR2

DWG NO.

UTV8100B

REV

A

SCALE

SHEET