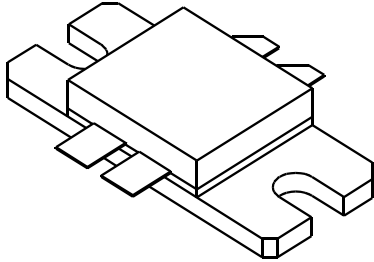




# UTV8100B

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

<p><b>GENERAL DESCRIPTION</b> 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.</p>	<p><b>CASE OUTLINE</b> <b>55RT, STYLE 2</b></p> 
<p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p>Maximum Power Dissipation @ 25°C <span style="float: right;">290 Watts</span></p> <p><b>Maximum Voltage and Current</b></p> <p>BV<sub>ce0</sub> Collector to Emitter Voltage <span style="float: right;">65 Volts</span>          BV<sub>ce0</sub> Collector to Emitter Voltage <span style="float: right;">30 Volts</span>          BV<sub>eb0</sub> Emitter to Base Voltage <span style="float: right;">3.5 Volts</span>          I<sub>c</sub> Collector Current <span style="float: right;">15 Amps</span></p> <p><b>Maximum Temperatures</b></p> <p>Storage Temperature <span style="float: right;">-40 to + 150°C</span>          Operating Junction Temperature <span style="float: right;">+ 200 °C</span></p>	

## ELECTRICAL CHARACTERISTICS @ 25 °C

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

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

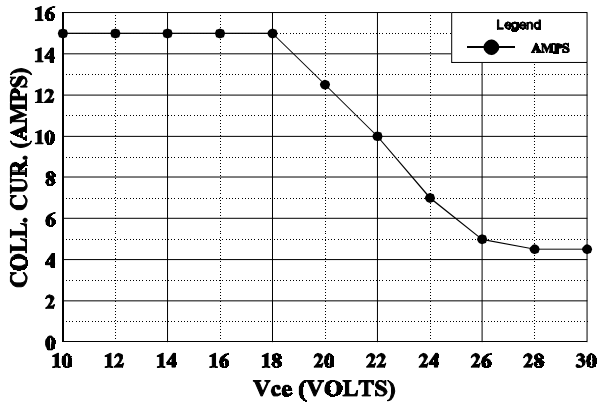
<b>BV<sub>ceo</sub></b>	Collector to Emitter Breakdown	I <sub>c</sub> = 25 mA	30			Volts
<b>BV<sub>ces</sub></b>	Collector to Emitter Breakdown	I <sub>c</sub> = 25 mA	60			Volts
<b>BV<sub>ebo</sub></b>	Emitter to Base Breakdown	I <sub>e</sub> = 30 mA	3.5			Volts
<b>H<sub>fe</sub></b>	Current Gain	V <sub>ce</sub> = 5 V, I <sub>c</sub> = 1 A	20		120	
<b>C<sub>ob</sub></b>	Output Capacitance - (each side)*	V <sub>cb</sub> = 28V, F=1MHz		44		pF
<b>R<sub>θjc</sub></b>	Thermal Resistance	T <sub>c</sub> = 25 °C			0.6	°C/W

\* Not measurable due to internal prematch network

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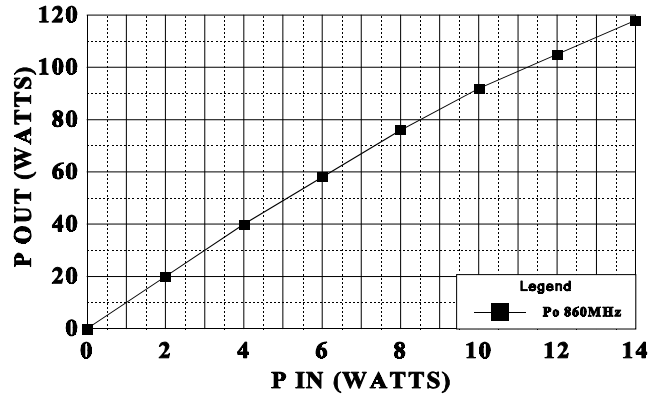
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**DC SAFE OPERATING AREA**



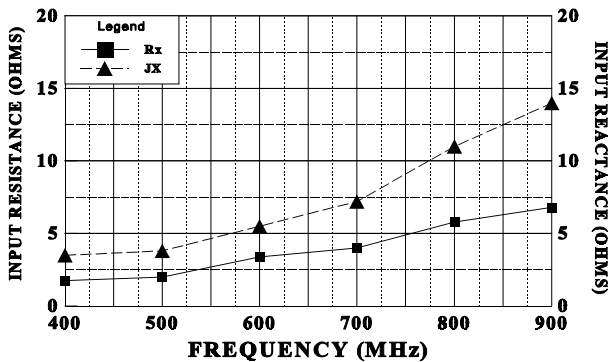
**POWER OUTPUT vs POWER INPUT**

Vcc = 28 V, Frequency 860MHz



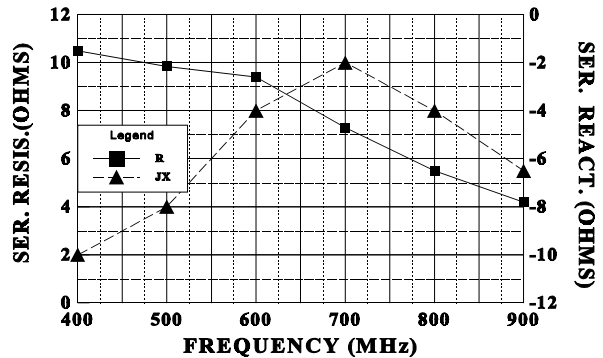
**INPUT IMPEDANCE vs FREQUENCY**

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



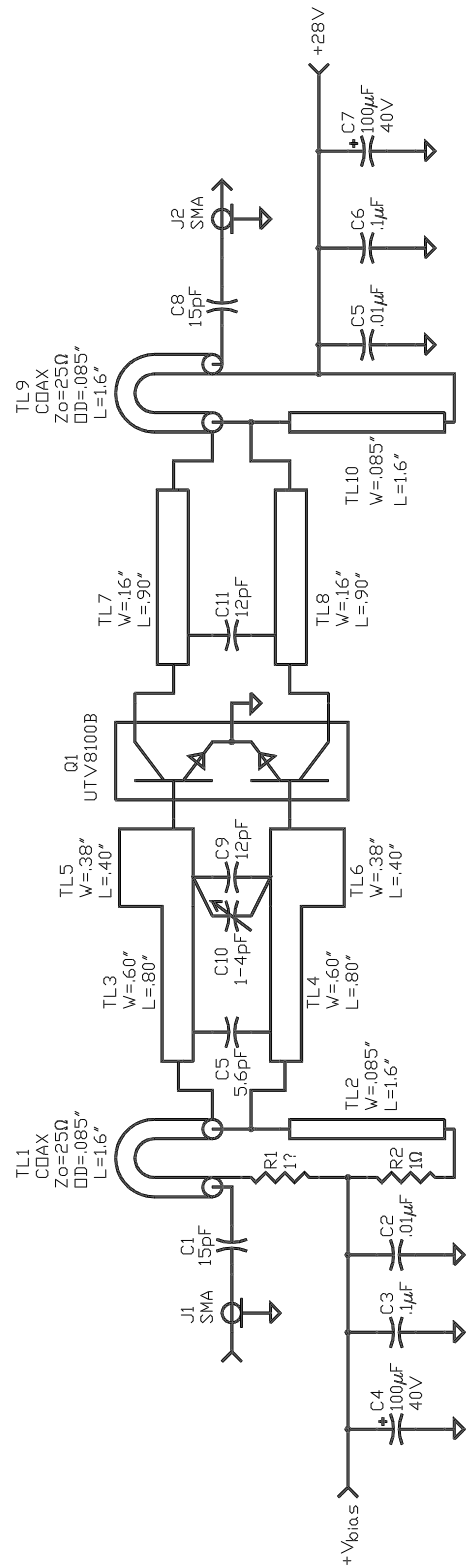
**LOAD IMPEDANCE vs FREQUENCY**

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.



CAGE 0PJR2	DWG NO. UTV8100B	REV A
SCALE		SHEET