

UTV8100B

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

<p>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.</p> <p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation @ 25°C 290 Watts</p> <p>Maximum Voltage and Current</p> <table style="width: 100%;"> <tr> <td>BV_{ce0} Collector to Emitter Voltage</td> <td style="text-align: right;">65 Volts</td> </tr> <tr> <td>BV_{ce0} Collector to Emitter Voltage</td> <td style="text-align: right;">30 Volts</td> </tr> <tr> <td>BV_{eb0} Emitter to Base Voltage</td> <td style="text-align: right;">3.5 Volts</td> </tr> <tr> <td>I_c Collector Current</td> <td style="text-align: right;">15 Amps</td> </tr> </table> <p>Maximum Temperatures</p> <table style="width: 100%;"> <tr> <td>Storage Temperature</td> <td style="text-align: right;">-40 to + 150°C</td> </tr> <tr> <td>Operating Junction Temperature</td> <td style="text-align: right;">+ 200 °C</td> </tr> </table>	BV _{ce0} Collector to Emitter Voltage	65 Volts	BV _{ce0} Collector to Emitter Voltage	30 Volts	BV _{eb0} Emitter to Base Voltage	3.5 Volts	I _c Collector Current	15 Amps	Storage Temperature	-40 to + 150°C	Operating Junction Temperature	+ 200 °C	<p>CASE OUTLINE 55RT, STYLE 2</p>
BV _{ce0} Collector to Emitter Voltage	65 Volts												
BV _{ce0} Collector to Emitter Voltage	30 Volts												
BV _{eb0} Emitter to Base Voltage	3.5 Volts												
I _c Collector Current	15 Amps												
Storage Temperature	-40 to + 150°C												
Operating Junction Temperature	+ 200 °C												

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	14.0	Watts
P_{in}	Power Input	V _{cc} = 28 Volts				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

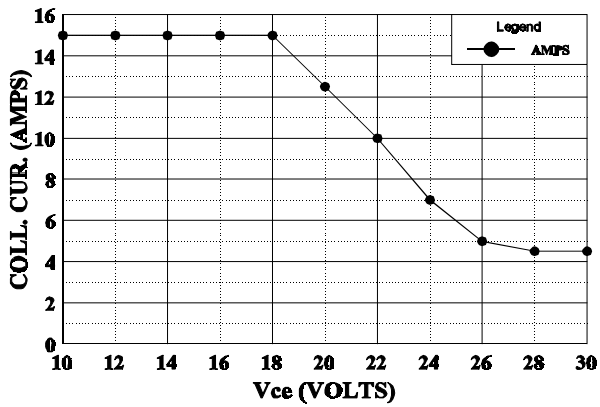
BV_{ceo}	Collector to Emitter Breakdown	I _c = 25 mA	30			Volts
BV_{ces}	Collector to Emitter Breakdown	I _c =25 mA	60			Volts
BV_{ebo}	Emitter to Base Breakdown	I _e = 30 mA	3.5			Volts
H_{fe}	Current Gain	V _{ce} = 5 V, I _c = 1 A	20		120	
C_{ob}	Output Capacitance - (each side)*	V _{cb} = 28V, F=1MHz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

* Not measurable due to internal prematch network

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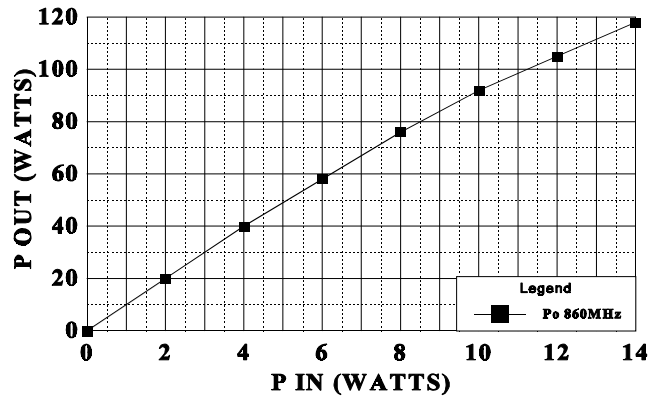
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DC SAFE OPERATING AREA



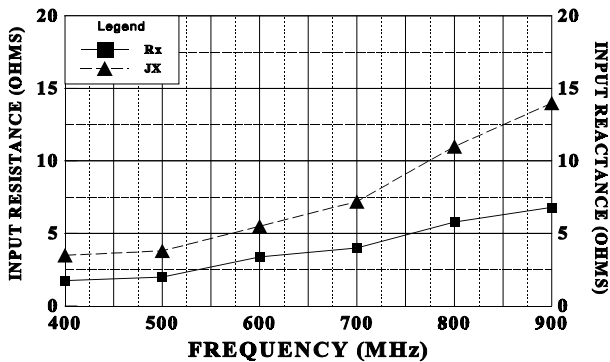
POWER OUTPUT vs POWER INPUT

Vcc = 28 V, Frequency 860MHz



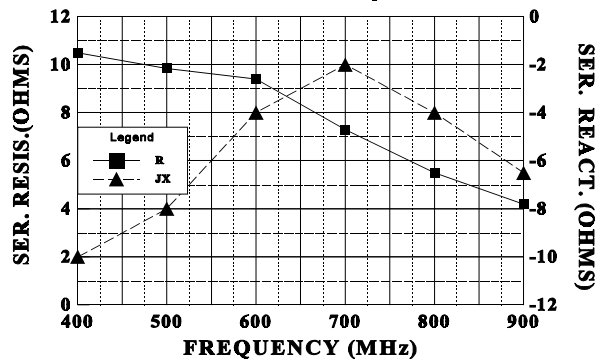
INPUT IMPEDANCE vs FREQUENCY

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



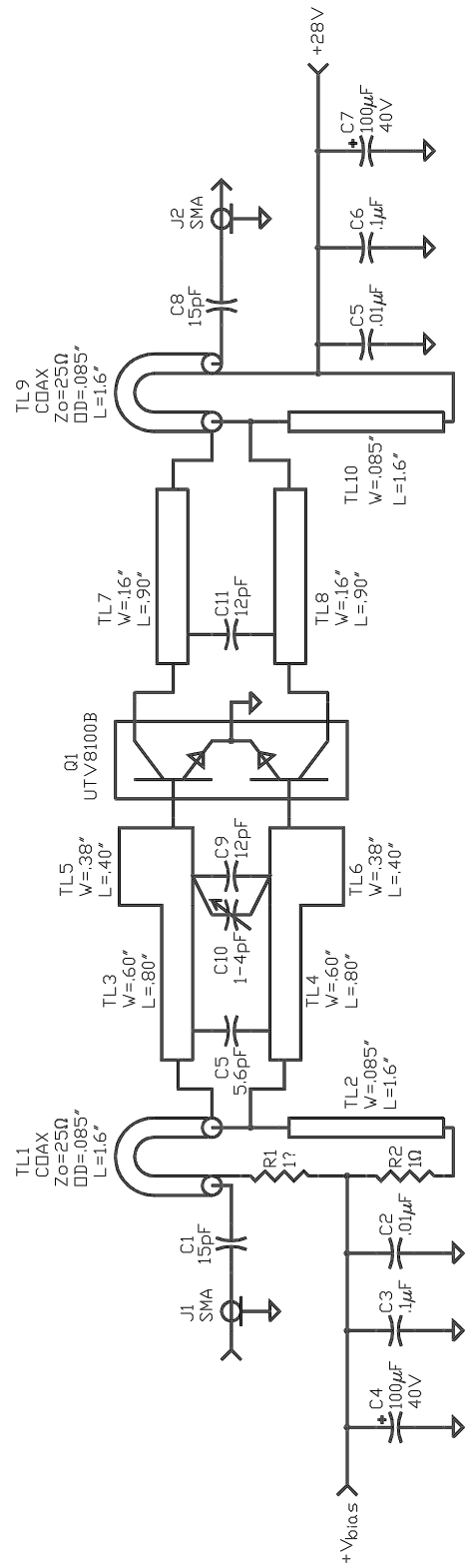
LOAD IMPEDANCE vs FREQUENCY

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