

# UTV100B

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

GENERAL DESCRIPTION		CASE OUTLINE 55RT, STYLE 2	
The UTV100B 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			
BVCbo	Collector to Emitter Voltage	65 Volts	
BVceo	Collector to Emitter Voltage	30 Volts	
BVebo	Emitter to Base Voltage	3.5 Volts	
Ic	Collector Current	15 Amps	
Maximum Temperatures			
Storage Temperature		-40 to + 150°C	
Operating Junction Temperature		+ 200 °C	

## 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			Watts
<b>P<sub>in</sub></b>	Power Input	V <sub>cc</sub> = 28 Volts			12.5	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			dB
<b>η</b>	Efficiency		55			%
<b>V<sub>SWR</sub></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>BVceo</b>	Collector to Emitter Breakdown	I <sub>c</sub> = 25 mA	30			Volts
<b>BVces</b>	Collector to Emitter Breakdown	I <sub>c</sub> = 25 mA	60			Volts
<b>BVebo</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		47	0.6	pF
<b>R<sub>θjc</sub></b>	Thermal Resistance	T <sub>c</sub> = 25 °C				°C/W

\* Not measureable due to internal prematch network

Issue August 1996

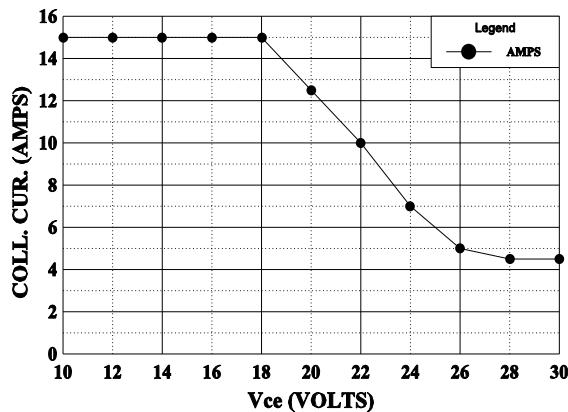
GHz TECHNOLOGY INC. RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE. GHz RECOMMENDS THAT BEFORE THE PRODUCT(S) DESCRIBED HEREIN ARE WRITTEN INTO SPECIFICATIONS, OR USED IN CRITICAL APPLICATIONS, THAT THE PERFORMANCE CHARACTERISTICS BE VERIFIED BY CONTACTING THE FACTORY.



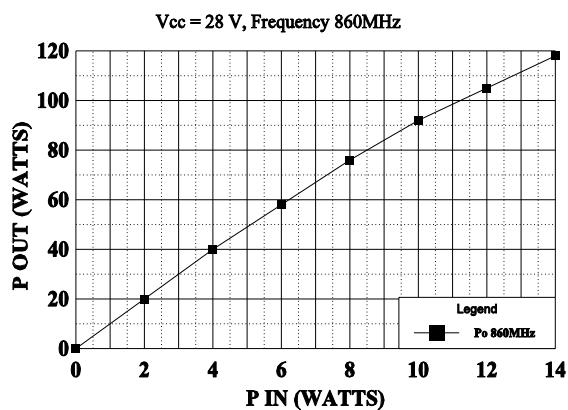
**GHz TECHNOLOGY**  
RF·MICROWAVE SILICON POWER TRANSISTORS

**UTV100B**

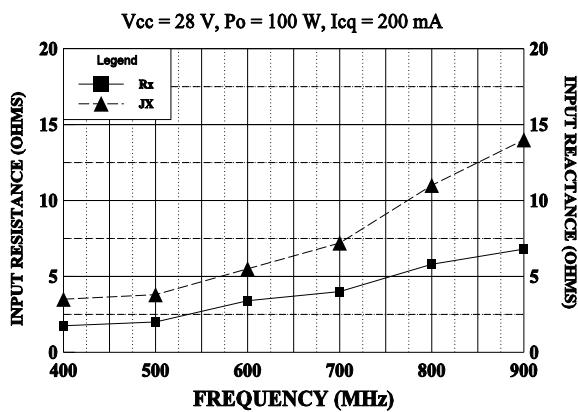
**DC SAFE OPERATING AREA**



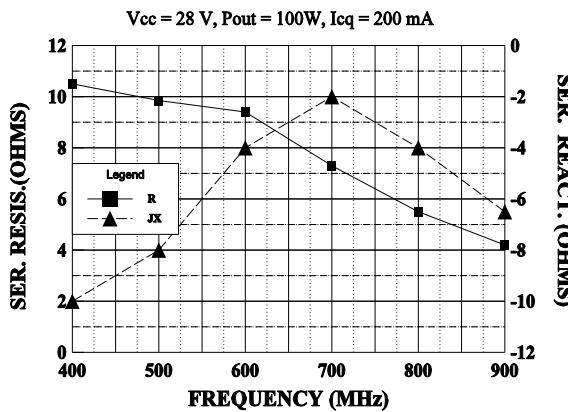
**POWER OUTPUT vs POWER INPUT**



**INPUT IMPEDANCE vs FREQUENCY**



**LOAD IMPEDANCE vs FREQUENCY**



August 1996