Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

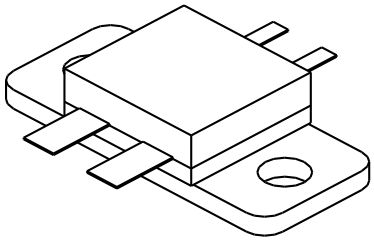
UTV200

20 Watts, 26.5 Volts, Class A
UHF Television - Band IV & V

GENERAL DESCRIPTION

The UTV 200 is a COMMON EMITTER transistor capable of providing 20 Watt Peak, Class A, RF Output Power over the band 470 - 860 MHz. The transistor includes double input prematching for full broadband capability. Gold Metalization and Diffused Ballasting are used to provide high reliability and supreme ruggedness.

CASE OUTLINE
55JV, STYLE 2



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C	80 Watts
Maximum Voltage and Current	
BVces Collector to Emitter Voltage	50 Volts
BVceo Collector to Emitter Voltage	28 Volts
BVebo Emitter to Base Voltage	4.0 Volts
Ic Collector Current	4.5 Amps
Maximum Temperatures	
Storage Temperature	- 65 to + 200°C
Operating Junction Temperature	+ 200°C

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out - Pk Sync	F = 470 - 860 MHz	20			Watts
Pin	Power Input	Vcc = 26.5 Volts			2.8	Watts
Pg	Power Gain	Ic = 2.7 Amps	8.5	9.5		dB
IMD[1]	Intermodulation Distortion	Pref = 20Watts		-48	-46	dB
VSWR$_1$	Load Mismatch Tolerance	F = 860 MHz			3:1	

LVceo[2]	Collector to Emitter Breakdown	Ic = 40 mA	28			Volts
BVces[2]	Collector to Base Breakdown	Ic = 20mA	50			Volts
BVebo[2]	Emitter to Base Breakdown	Ie = 10 mA	4			Volts
h_{FE}[2]	Current Gain	Vce = 5 V, 1 A	10		150	
Cob[2]	Output Capacitance	Vcb = 26 V, F = 1 MHz			36	pF
θjc	Thermal Resistance	Tc = 25°C			1.2	°C/W

Note 1: F1=860 MHz, F2=863.5 MHz, F3=864.5 Mhz
European test method, Vision = - 8dB, Sideband= - 16dB, Sound = -7 dB
Note 2: Per side

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GHz TECHNOLOGY
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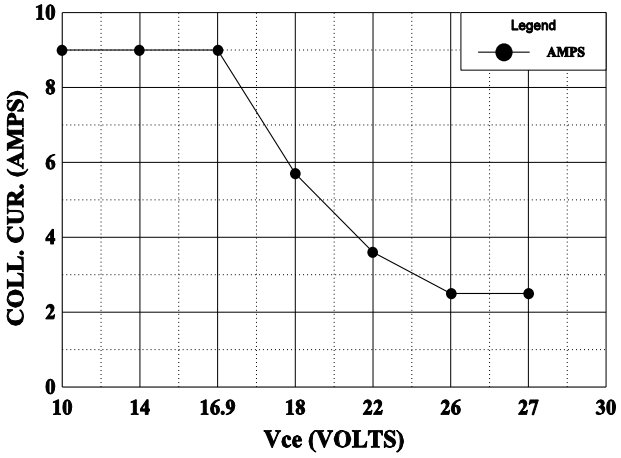
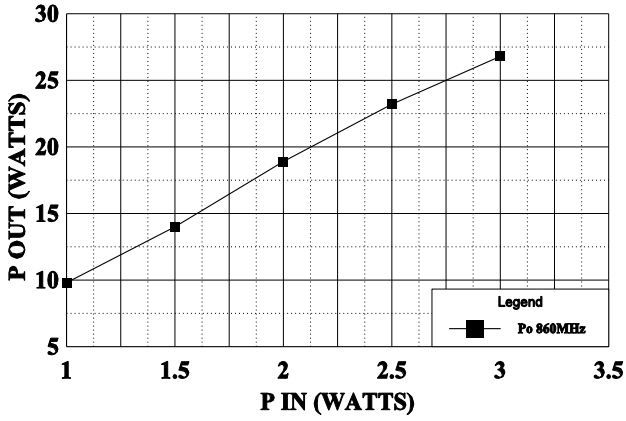
UTV200

DC SAFE OPERATING AREA

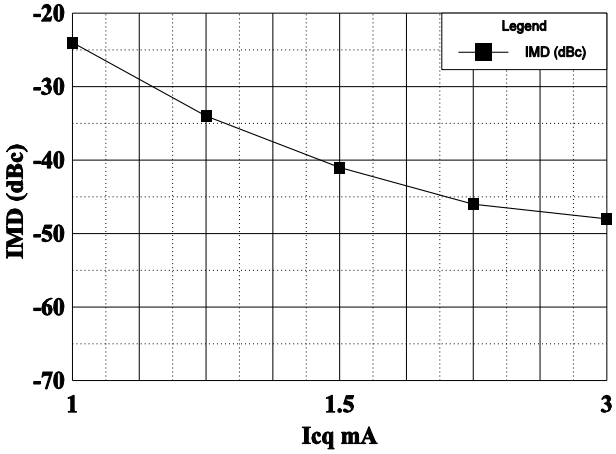


POWER OUTPUT vs POWER INPUT

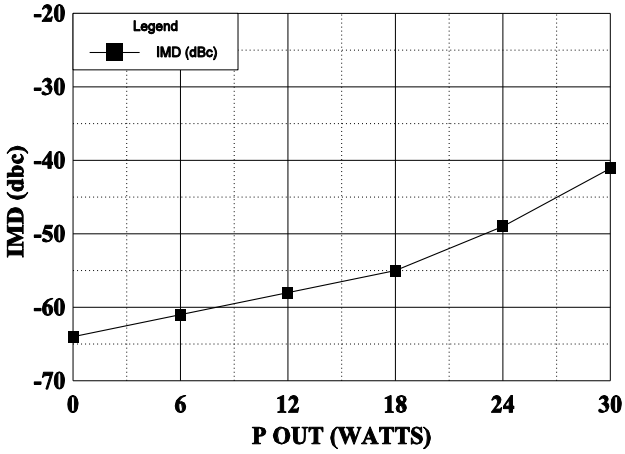
Vcc = 26.5V, Frequency 860MHz



IMD vs Icq

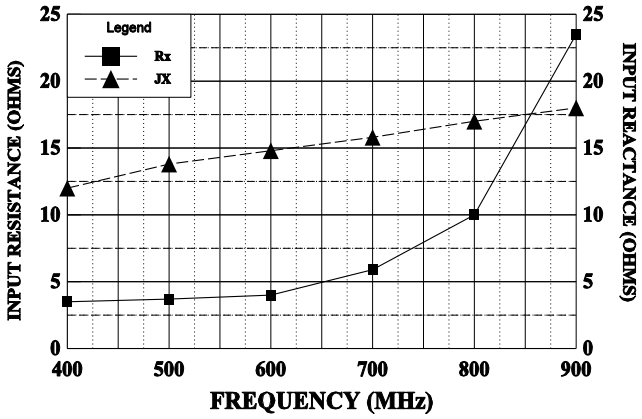


IMD vs P out



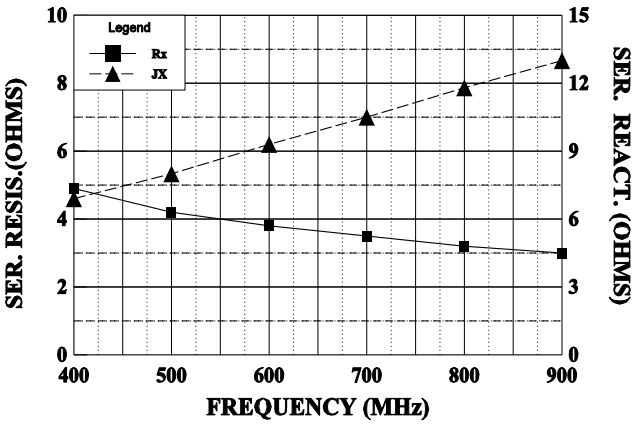
INPUT IMPEDANCE vs FREQUENCY

Vcc = 26.5V, Pin =



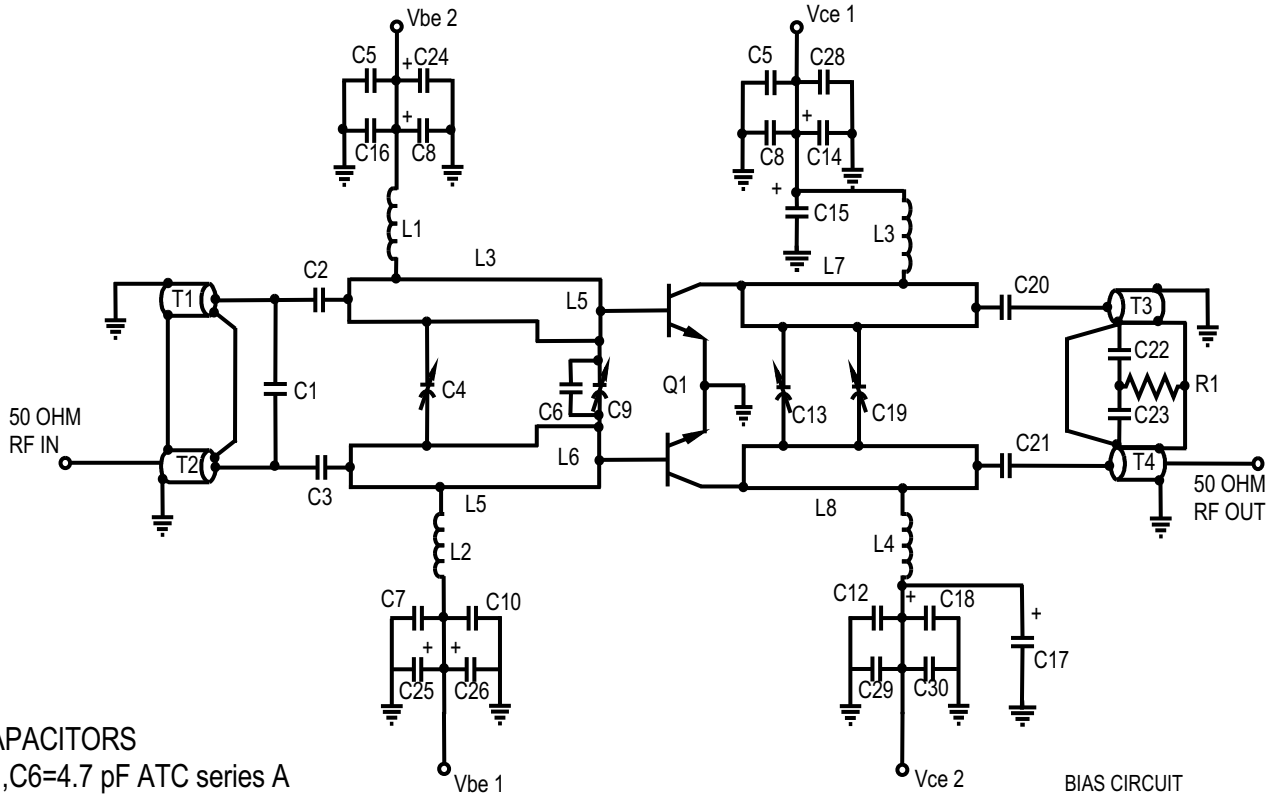
LOAD IMPEDANCE vs FREQUENCY

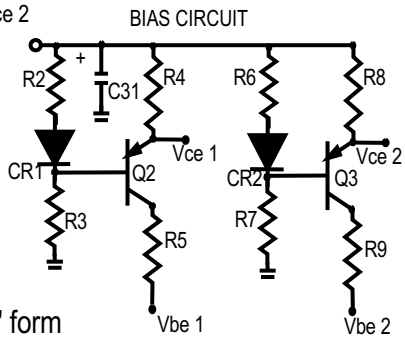
Vcc = 26.5V



CHz TECHNOLOGY
RF-MICROWAVE SILICON POWER TRANSISTORS

UTV-200





CAPACITORS
C1,C6=4.7 pF ATC series A
C2,C3,C20,C21=33 pF ATC series A
C4,C9=1.2-3.5 pF film diel. trimmer
C5,C7,C11,C12=0.01 mF, 50V Tantalum
C8,C15,C17,C25=1 mF, 50 V Tantalum
C10,C16,C27,C12=0.1 mF 50 V disc ceramic
C13=0.6-6 pF piston trimmer
C19=0.35-3.5 pF piston trimmer
C18,C24,C14,C26=10 mF, 50 V
C28,C30=0.001 mF, 50 V disc ceramic
C31=100 mF, 50 V electrolytic

INDUCTORS
L1,L2=0.46 microHenry molded
L3,L4=1 turn #18 magnet wire on a 0.325" form

RESISTORS
R1=10 Ohm, 1/2 W Carbon
R2,R6=500 Ohm potentiometer
R3,R7=4.7K Ohm, 3W, 1% Carbon
R4,R8=1 Ohm, 3W, 1% Carbon film
R5,R9=47 Ohm, 1/4W Carbon film

TRANSISTORS
Q1=GHz UTV-200
Q2,Q3=MJE172

MICROSTRIPLINES
L3,L4=0.075" X 0.65"
L5,L6=0.120" X 0.31"
L7,L8=0.120" X 1.33"

TRANSFORMERS
T1,T2,T3,T4=50 Ohm semi-rigid coax cable
(0.056" X 1.1") soldered to 0.035" X 1.1" microstrip

DIODES
CR1,CR2=IN4148

August 1996