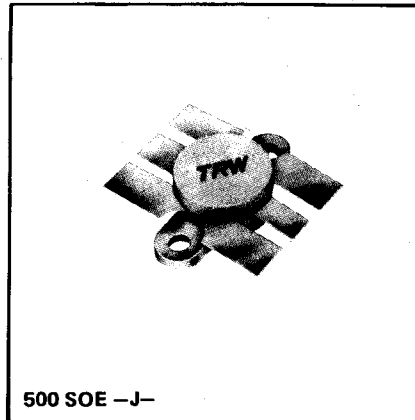


UHF Linear Transistor

TPV 386

TV Transposer and Transmitter Band 3 Class A(30W) or AB(90W) 12 dB Gain



TPV 386 is an internally matched transistor on a very low thermal resistance package, designed for high gain, high output power band III TV transmitters and transposers applications.

The combination of multicell die design, optimum matching techniques, ultra thin beryllium layer header, 100% linearity and thermal tests have lead to what is undoubtedly the most powerful

available device for class A and AB TV amplification. Long term reliability and ruggedness are guaranteed by diffused silicon ballast resistors and the TRW gold metallization process.

Electrical Characteristics ($T_{CASE} = 25^{\circ}C$)

	Symbol	Characteristics	Test Conditions	Min.	Typ	Max.	Unit
DC TEST	BV _{EBO}	Emitter-Base Breakdown Volt.	IE = 20mA	4			V
	BV _{CEO}	Collector-Emit. Breakdown Volt.	IC = 100mA	35			V
	BV _{CER}	Collector-Emit. Breakdown Volt.	IC = 100mA, R _{be} = 10Ω	60			V
	BV _{CBO}	Collector-Base Breakdown Volt.	IC = 50mA	65			V
	H _{FE}	DC Current Gain	V _{ce} = 5V, IC = 1A	20		100	
RF TEST	C L A S S	Intermodulation distort. 3 tones Vision -8dB Sound -7dB Sideband -16dB	F = 225MHz V _{ce} = 28V, IE = 3.5A P _{REF} = 30W		-53	-51	dB
	A	Power Gain			12		dB
		Mismatch Toler.			∞		
	Class- AB	1dB Compression Point CW.	V _{CE} = 28V, I _a = 200mA F = 225MHz	90			W
	Cob	Coll. Base capacitance	V _{cb} = 30V, F = 1MHz		130	150	pF
THERMAL	I _c	Max. Coll. Curr.				16	A
	R _{th}	Therm. resist. Junction Base	T _{case} = 70°C		0.7		°C/W
	TSTG	Storage temperature		-65		+200	°C

d&m 588

TPV 387

PRELIMINARY

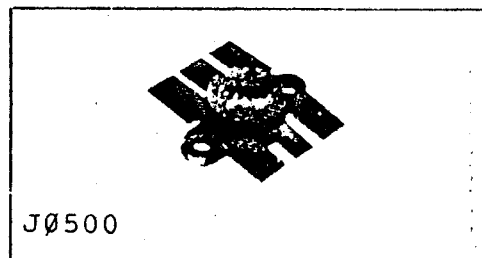


TRW RF DEVICES

JUNE 86

VHF LINEAR TRANSISTOR

- TV TRANSPOSER AND TRANSMITTER
- BAND 3
- CLASS A (24W) or AB (90W)
- 13 dB GAIN (CLASS A)



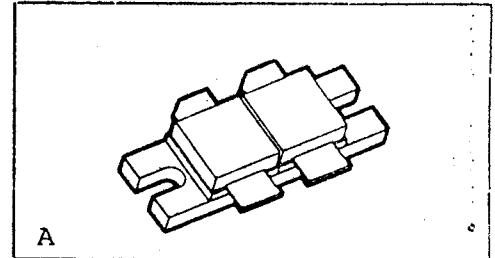
TPV387 is an internally matched transistor on a very low thermal resistance package, designed for high gain, high output power Band 3 TV transmitters & transposers applications. The combination of multicell die design, optimum matching techniques, 100% linearity & thermal tests have lead to what is one of the most powerful available device for Class A and AB TV amplification. Long term reliability and ruggedness are guaranteed by diffused silicon ballast resistors and the TRW gold metallization process.

Electrical Characteristics (T_{Case} = 25°C)

	Symbol	Characteristics	Test Conditions	Min.	Typ.	Max.	Unit.
DC Test	BVEBO	Emitter-Base Breakdown Voltage	IE = 20 mA	4			V
	BVCEO	Collector-Emitter Breakdown Voltage	IC = 100 mA	35			V
	BVCER	Collector-Emitter Breakdown Voltage	IC = 100 mA, Rbe = 10 Ω	60			V
	BVCBO	Collector-Base Breakdown Voltage	IC = 50 mA	65			V
	HFE	DC Current Gain	Vce = 5 V, IC = 1 A	20		100	
RF Test	CLASS A	Intermodulation Distortion 3 tones Vision -8dB Sound -7dB Sideband -16dB	F = 225 MHz Vce = 28 V, IE = 3.5 A PREF = 24W			-50	dB
		Power Gain			13		dB
		Mismatch Tolerance					∞
	CLASS AB	1 dB Compression Point CW	VCE = 28V, I _Q = 200 mA F = 225 MHz	90			W
	COB	Coll. Base Capacitance	Vcb = 30V, F = 1 MHz		130	150	pF
Thermal	IC	Max. Coll. Curr.				16	A
	Rth	Thermal Resistance Junction Mounting Base	T Mounting Base = 70°C			1	°C/W
	TSTG	Storage Temperature		-65		+200	°C

UHF HIGH POWER TRANSISTOR PUSH-PULL STRUCTURE

- 75W AT 860MHZ CLASS AB
- 8dB GAIN
- GOLD METALIZATION
- DIFFUSED BALLAST RESISTORS
- INTERNALLY MATCHED



The TPV 675B is designed for operation in high power TV Transmitters operating between 470MHz and 860MHz when linearity and ruggedness are required.

Electrical Characteristics (Tcase = 25°C)

	Symbol	Characteristics	Test Conditions	Min.	Typ.	Max.	Unit.
DC Test each side	BV_{EBO}	Emitter Base Breakdown Voltage	20mA	4			V
	BV_{CER}	Collector Emitter Breakdown Voltage	$I_E = 60mA$	45			V
	BV_{CBO}	Collector Base Breakdown Voltage	$I_C = 60mA$	50			V
	I_{CBO}	Collector Cutoff Current	$V_{CB} = 28V$			30	mA
	H_{FE}	DC Current Gain	$V_{CE} = 10V$ 1A	20		100	-
RF Test	Pout	Output Power	$V_{CE} = 28V$ F = 860MHZ $I_{Cq} = 200mA/side$ $P_{in} = 12W$	75	80		W
	η_c	Collector Efficiency	$V_{CE} = 28V$ F = 860MHZ $I_{Cq} = 200mA/side$ $P_{out} = 75W$	45			%
	Overdr.	Pin Overdrive	$V_{CE} = 28V$ F = 860MHZ $I_{Cq} = 200mA/side$			24	W
	$C_{OB}/SIDE$	Collector Base Capacitance	$V_{CB} = 28V$ F = 1MHz		60	70	pF
Thermal	P_D	Total Power Diss.	Tcase = 25°C			200	W
	θ_{J-C}	Thermal Resistance Junction Case	Tcase = 70°C			0.9	°C/W
	Tj	Max. Junct. Temper.				+200	°C
	$T_{S_{TG}}$	Storage Temperature		-65		+200	°C

TPV 693



TRW RF DEVICES

PRELIMINARY

JUNE 86

UHF LINEAR TRANSISTOR

- . 2 W
- . 10 dB GAIN
- . BAND 4 & 5
- . TV TRANSPOSER



280 SOE

The TPV 693 is a NPN gold metallized transistor using diffused emitter ballast resistors for super linearity and high gain.

Electrical Characteristics (T_{Case} = 25°C)

	Symbol	Characteristics	Test Conditions	Min.	Typ.	Max.	Unit.
DC Test	BVCEO	Collector Emitter Breakdown Voltage	IC = 10 mA	28			V
	BVCBO	Collector Base Breakdown Voltage	IC = 10 mA	45			V
	BVEBO	Emitter Base Breakdown Voltage	IE = 5 mA	4			V
	β	DC Current Gain	5 V - 250 mA	20		90	
RF Test	IMD	Intermodulation Distortion Vision -6 dB Sound -7 dB Sideband -16 dB	f vision = 855 MHz PREF : 1.8W VCE = 25V, IC = 500 mA TRW DOCUMENT 05001			-60	dB
	PG	Power Gain		9.5	10		dB
	COB	Collector Base Capacitance	IE = 0, VCE = 25V, F = 1 MHz	9	10		pF
Thermal	θ_{JC}	Thermal Resistance Junction Case	T _{Case} = 70°C Hot spot definition - DC Dissipation			8	°C/W
	T _J	Junction Temperature				200	°C
	T _{STG}	Storage Temperature		-65		+200	°C

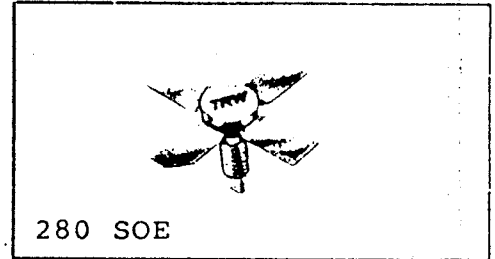
TPV 698

PRELIMINARY

JUNE 86

UHF LINEAR TRANSISTOR

- . 3W / 4W
- . 9dB
- . TV Transposer
- . Band 4 & 5



The TPV 698 is a high gain NPN gold metallized transistor using diffused emitter ballast resistors for super linearity. The chip design using microwave techniques provides

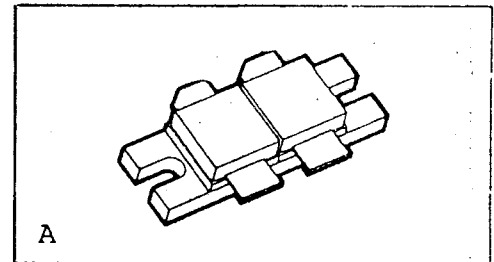
over 8.5dB gain at 860MHz. The TPV 698 is specifically designed for high power, band 4 & 5 TV Transposers.

Electrical characteristics (Tcase = 25°C)

	Symbol	Characteristics	Test Conditions	Min.	Typ.	Max.	Unit.
DC Test	BVEBO	Emitter-Base Breakdown Voltage	IE = 1 mA	4			V
	BVCEO	Collector-Emitter Breakdown Voltage	IC = 20 mA	27			V
	BVCBO	Collector-Base Breakdown Voltage	IC = 10 mA	45			V
	FE	D.C. Current Gain	VCE = 20 V IC = 500 mA	10			
RF Test	IMD	Intermodulation distortion 3 tones - 8 dB vision - 7 dB sound - 16 dB Sideband	F = 860 MHz VCE = 25 V IC = 850 mA PREF = 3W		- 60	- 58	dB
	PG	Power Gain	TRW DOCUMENT 05001	8.5	9		dB
	COB	Collector Base Capacitance	VCB = 25V F = 1 MHz			20	pF
	FT	Cutoff Frequency	VCE = 25V IC = 850 mA		2		GHz
Thermal	θJC	Thermal Resistance Junction Case	DC Dissipation Average Temperature TCase = 70°C			5	°C/W
	θJC	Thermal Resistance Junction Case	High Resolution DC Dissipation TCase = 70°C			6.2	°C/W
	θCH	Thermal Resistance Case Heatsink			0.4		°C/W
	TSTG	Storage Temperature		- 65		+ 200	°C

VHF HIGH POWER TRANSISTOR PUSH-PULL STRUCTURE

- 200W AT 230MHZ CLASS AB
- 9.5dB GAIN
- GOLD METALIZATION
- DIFFUSED BALLAST RESISTORS
- INTERNALLY MATCHED



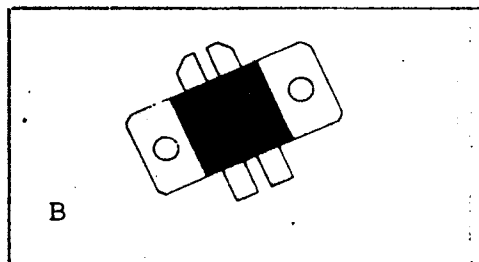
The TPV 3200B is designed for operation in high power TV Transmitters operating between 170 and 230MHz when linearity and ruggedness are required.

Electrical Characteristics at 25°C

	Symbol	Characteristics	Test Conditions	Min.	Typ.	Max.	Unit
DC Test each side	BV_{EBO}	Emitter Base Breakdown Voltage	$I_E = 10mA$	3.5			V
	BV_{CEO}	Collector Emitter Breakdown Voltage	$I_C = 100mA$	35			V
	BV_{CBO}	Collector Base Breakdown Voltage	$I_C = 100mA$	65			V
	BV_{CER}	Collector Emitter Breakdown Voltage	$I_C = 100mA$ R = 15Ω	60			V
	H_{FE}	DC Current Gain	$V_{CE} = 28V, I_C = 1A$	20		150	-
RF Test	P_{out}	Output Power	$V_{CE} = 28V$ $I_q = 2 \times 200mA$ $F = 230MHz$ $P_{in} = 20W$	200			W
	$\eta\%$	Collector Efficiency	$V_{CE} = 28V$ $I_q = 2 \times 200mA$ $F = 230MHz$ $P_{out} = 200W$	45			%
	Overdr.	Pin Overdrive	$V_{CE} = 28V$ $I_q = 2 \times 200mA$			40	W
	$C_{OB}/side$	Collector Base Capacitance	$V_{CB} = 28V$ $F = 1MHz$		130	150	pF
Thermal	P_D	Total Power Dissipation	$T_{case} = 25^\circ C$			420	W
	θ_{J-C}	Thermal Resistance Junction Case	$T_{case} = 70^\circ C$			0.45	°C/W
	T_J	Maximum Junction Temperature				200	°C
	$T_{S_{TG}}$	Storage Temperature		-65		+200	°C

UHF HIGH LINEAR TRANSISTOR - PUSH-PULL - CLASS A

- 25 WATTS
- 8dB GAIN AT 860MHz
- GOLD METALIZATION
- DIFFUSED BALLAST RESISTORS
- INTERNALLY MATCHED (INPUT & OUTPUT)



The TPV 5025 is a push-pull device designed to operate in Class A for high power Band IV & V TV Transposers and for solid state transmitters.

Electrical Characteristics Tcase = 25°C

	Symbol	Characteristics	Test Conditions	Min.	Typ.	Max.	Unit
each side	BV_{EBO}	Emitter Base Breakdown Voltage	$I_E = 6mA$	4			V
	BV_{CEO}	Collector Emitter Breakdown Voltage	$I_C = 60mA$	28			V
	I_{CEO}	Collector Emitter Cut-off Current	$V_{CE} = 26V$			5	mA
DC Test	BV_{CER}	Collector Emitter Breakdown Voltage	$I_C = 50mA$ RBE = 51Ω	40			V
	BV_{CBO}	Collector Base Breakdown Voltage	$I_C = 20mA$	45			V
	H_{FE}	DC Current Gain	$V_{CE} = 20V$ $I_C = 500mA$	10		60	-
RF Test	IMD	3rd order Intermodulation	$F_o = 860MHz$ Pref=25W $V_{CE} = 25V$ $I_C = 2 \times 1.7A$			-50	dB
	P_G	Power Gain	(-8, -10, -16dB Tones)	8			dB
	Pin	Pin Overdrive (no degradation)	$F_o = 470MHz$ $V_{CE} = 25V$ $I_C = 2 \times 1.7A$ 2 Tones			25	W
	C_{OB}	Collector Base Capacitance/side	$V_{CB} = 28V$ $F = 1MHz$		35	40	pF
Thermal	P_D	Tot. Pwer Dissip.	Tcase = 70°C			95	W
	θ_{J-C}	Thermal Resistance Junction Case	Tcase = 70°C			1.35	°C/W
	T_j	Max. Junction Temp				+200	°C
	Tcase	Max. Case Temperat.				+70	°C
	$T_{S_{TG}}$	Storage Temperat.		-65		+20	°C

TRW RF SEMICONDUCTORS

TPV 5050

PRELIMINARY

TV TRANSMITTER
BAND 4 OR 5
50W CLASS AB
PUSH-PULL

The TPV 5050 is a push-pull device incorporating gold metallized dice and diffused emitter ballast resistors for linearity and ruggedness. It provides 6.5 dB gain at 50W and 860 MHz. The TPV 5050 is specifically designed for high power vision-only TV amplifiers operating in bands IV or V.



MRP 7

Electrical Characteristics (T_{case} = 25 °C)

	SYMBOL	CHARACTERISTICS	TESTS CONDITIONS	MIN.	TYP.	MAX.	UNIT
DC TEST	BV _{EBO}	Emitter-Base Breakdown Volt.	I _E = 2 mA	4			V
	BV _{CEO}	Collector-Emit. Breakdown Volt.	I _c = 40 mA	30			V
	BV _{CBO}	Collector-Base Breakdown Volt.	I _c = 20 mA	45			V
	h _{FE}	D.C. Current Gain	V _{CE} = 5V I _c = 500mA	15	30		
RF TEST	PG	Power Gain	V _{CE} = 28V, I _q = 2 x 50mA F = 860MHz P _{out} = 50W	6.5			dB
	η _c	Collector Efficiency.		50			%
	COB/ Side	Collector Base capacitance	V _{CB} = 28V F = 1MHz		25		pF
	θ _{JC}	Thermal Resist. Junction Case	T case : 60°C			2	°C/W
THERMAL	TSTG	Storage Temper.		-65		+200	°C
	T _J	Junction Temp.		-65		+200	°C

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