

TOSHIBA RF POWER AMPLIFIER MODULE

# S-AU93

FM RF POWER AMPLIFIER MODULE for UHF BAND

- Output Power :60W (Min.)
- Power Gain :30.7dB (Min.)
- Total Efficiency:40% (Min.)

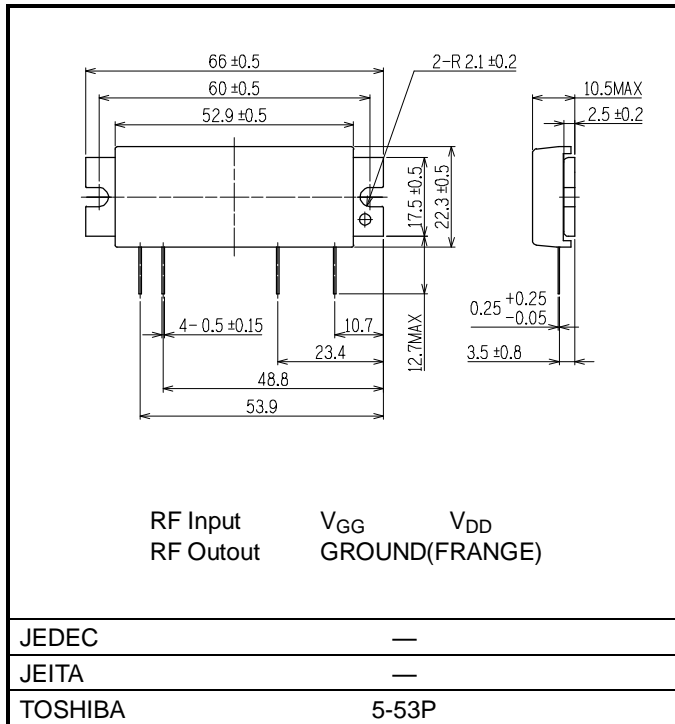
**MAXIMUM RATINGS (Tc = 25 , ZG = ZL = 50 )**

CHARACTERISTIC	SYMBOL	TEST CONDITION	RATING	UNIT
DC Supply Voltage	V <sub>DD</sub>	V <sub>GG</sub> =0V, Pi =0mW	16.5	V
DC Supply Voltage	V <sub>DD</sub>	V <sub>GG</sub> 5V, Pi =50mW, Po 60W	16.5	V
DC Supply Voltage	V <sub>GG</sub>	V <sub>DD</sub> 12.5V, Pi =50mW	5.5	V
Total Current	I <sub>T</sub>	V <sub>DD</sub> 12.5V, Pi =50mW	15	A
Input Power	P <sub>i</sub>	V <sub>DD</sub> 12.5V, V <sub>GG</sub> 5V	100	mW
Output Power	P <sub>o</sub>	12.5V < V <sub>DD</sub> 16.5V, V <sub>GG</sub> 5V, Pi =50mW	75	W
Operating Case Temperature Range	T <sub>c (opr)</sub>	V <sub>GG</sub> 5V	-30~100	
Storage Temperature Range	T <sub>stg</sub>		-40~110	

Caution: This maximum rating given in a sheet guarantees each item independently. When two items or more of maximum rated items joins a device at once. It becomes the outside of a guarantee. Please design in circuit to make it always operate within this regulation also on the worst condition.

**PACKAGE OUTLINE**

Unit in mm



Weight: 35g

## ELECTRICAL CHARACTERISTICS (T<sub>c</sub> = 25 , Z<sub>G</sub> = 50 )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f <sub>range</sub>	—	430	—	500	MHz
Total Current ( DC operation )	I <sub>T</sub>	V <sub>DD</sub> = 12.5V, V <sub>GG</sub> = 5V, P <sub>i</sub> = 0mW Z <sub>L</sub> = 50	—	—	15	A
Output Power	P <sub>o</sub>	V <sub>DD</sub> = 12.5V V <sub>GG</sub> = 5V P <sub>i</sub> = 50mW Z <sub>L</sub> = 50	60	—	—	W
Power Gain	G <sub>p</sub>		30.7	—	—	dB
Total Efficiency	η <sub>T</sub>		40	—	—	%
Input VSWR	VSWR <sub>in</sub>		—	—	3.0	—
Second Harmonic	2nd HRM		—	—	-30	dB
Third Harmonic	3rd HRM		—	—	-30	dB
Load Mismatch	—		V <sub>DD</sub> = 10.5 to 16.5V, V <sub>GG</sub> = 0 to 5V P <sub>i</sub> = 50mW P <sub>o</sub> = 60W (V <sub>GG</sub> = adjust.@ Z <sub>L</sub> = 50 ) VSWR LOAD 20: 1 ALL PHASE (@2s)	No Degradation		
Stability	—	V <sub>DD</sub> = 10.5 to 16.5V, V <sub>GG</sub> = 0 to 5V P <sub>i</sub> = 50mW P <sub>o</sub> = 60W (V <sub>GG</sub> = adjust.@ Z <sub>L</sub> = 50 ) VSWR LOAD 3: 1 ALL PHASE	All spurious output than 60dB below desired signal			—

### Caution

- This product has intersetting cap. Please pay attention for exceeding stress and foreign matter in your application. And not to take away the cap.
- Do not break, cut, crush or dissolve chemically. Dispose of this product properly according to law. Do not intermingle with normal industrial or domestic waste.
- This product is electrostatic sensitivity, please handle with caution.
- This product is flowed high current for a VDD terminal at both RF ON and RF OFF. And it has large calorific value for high output power. So please use it within the limit of the maximum rating.  
The view of the maximum rating of our company,  
"The absolute maximum ratings are rated values which must not be exceeded during operation, even for an instant. And it guarantees each item independently. When two items or more of maximum rated items joins a device at once. It becomes the outside of a guarantee. "

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