

## TOSHIBA RF POWER AMPLIFIER MODULE

**S-AU86**

ORF POWER AMPLIFIER MODULE for 800MHz Digital MCA

**ABSOLUTE MAXIMUM RATINGS (T<sub>c</sub> = 25°C, Z<sub>G</sub> = Z<sub>L</sub> = 50Ω)**

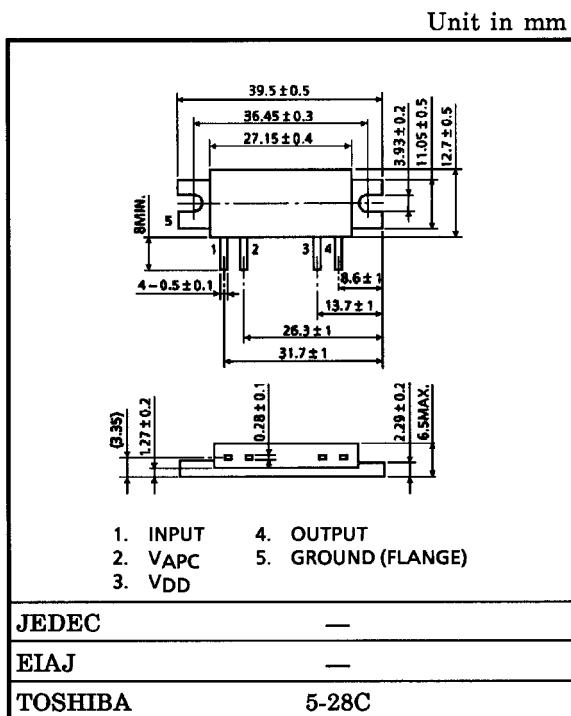
CHARACTERISTIC	SYMBOL	RATING	UNIT
DC Supply Voltage	V <sub>DD</sub>	17	V
DC Supply Voltage	V <sub>GG</sub>	9	V
Input Power	P <sub>i</sub>	320	mW
Operating Case Temperature Range	T <sub>c</sub> (opr)	-30 to 100	°C
Storage Temperature Range	T <sub>stg</sub>	-40 to 110	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings and the operating ranges.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc.).

Caution: This absolute 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**

Weight : 18g

ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C, Z<sub>G</sub> = 50Ω)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Frequency Range	f <sub>range</sub>	—	889	—	915	MHz
Output Power	P <sub>O</sub>	V <sub>DD</sub> = 12.0V, I <sub>DD</sub> = 1.7A (V <sub>GG</sub> = adjust) P <sub>O</sub> = 20dBmW, Z <sub>L</sub> = 50Ω	40	—	—	dBmW
Input Power	P <sub>i</sub>	V <sub>DD</sub> = 12.0V, I <sub>DD</sub> = 1.7A (V <sub>GG</sub> = adjust) P <sub>O</sub> = 35dBmW Z <sub>L</sub> = 50Ω	—	—	7	dBmW
Gate Bias Voltage	V <sub>GG</sub>	V <sub>DD</sub> = 12.0V, I <sub>DD</sub> = 1.7A (V <sub>GG</sub> = adjust) P <sub>O</sub> = 35dBmW (P <sub>i</sub> = adjust), Z <sub>L</sub> = 50Ω	—	—	8	V
Gate Bias Current	I <sub>GGBias</sub>	V <sub>DD</sub> = 12.0V, I <sub>DD</sub> = 1.7A (V <sub>GG</sub> = adjust) P <sub>O</sub> = 35dBmW (P <sub>i</sub> = adjust), Z <sub>L</sub> = 50Ω After that P <sub>i</sub> OFF	—	—	10	mA
Adjacent-Channel Power Ratio	ACP	V <sub>DD</sub> = 12.0V, I <sub>DD</sub> = 1.7A (V <sub>GG</sub> = adjust) P <sub>O</sub> = 35dBmW (P <sub>i</sub> = adjust), Z <sub>L</sub> = 50Ω Modulated Wave : π/4-DQPSK (α=0.5, 32kbps) Band Width : 16kHz Frequency Offset : 25kHz	—	—	-39	dB
Second Harmonic	2nd HRM	V <sub>DD</sub> = 12.0V, I <sub>DD</sub> = 1.7A (V <sub>GG</sub> = adjust) P <sub>O</sub> = 35dBmW (P <sub>i</sub> = adjust), Z <sub>L</sub> = 50Ω	—	—	-30	dB
Third Harmonic	3rd HRM		—	—	-30	dB
Harmonic	HRM		—	—	-35	dB
Relative Phase Variation	—	V <sub>DD</sub> = 12.0V, I <sub>DD</sub> = 1.7A (V <sub>GG</sub> = adjust) Z <sub>L</sub> = 50Ω, 0° (@P <sub>O</sub> = 35dBmW) P <sub>O</sub> = 5 to 40dBmW	—	—	±5	°
Load Mismatch	—	V <sub>DD</sub> = 12.0V, I <sub>DD</sub> = 1.7A (V <sub>GG</sub> = adjust) P <sub>i</sub> = 40dBmW (P <sub>i</sub> = adjust, @Z <sub>L</sub> = 50Ω) VSWR LOAD 20: 1 ALL PHASE	No Degradation			—
Stability	—	V <sub>DD</sub> = 10.0 to 16.0V, V <sub>GG</sub> = 1.0 to 9.0V P <sub>i</sub> = -40 to 25dBmW VSWR LOAD 6: 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.



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