

### RF Power Amplifier Module

#### 900 MHz UHF Power Amplifier Module

#### (USA Hand-held Cellular Telephone)

#### Features

- High Efficiency :  $\eta_T = 55\%$ (Typ.)
- High Gain :  $G_p = 24.4\text{dB}$ (Min.)

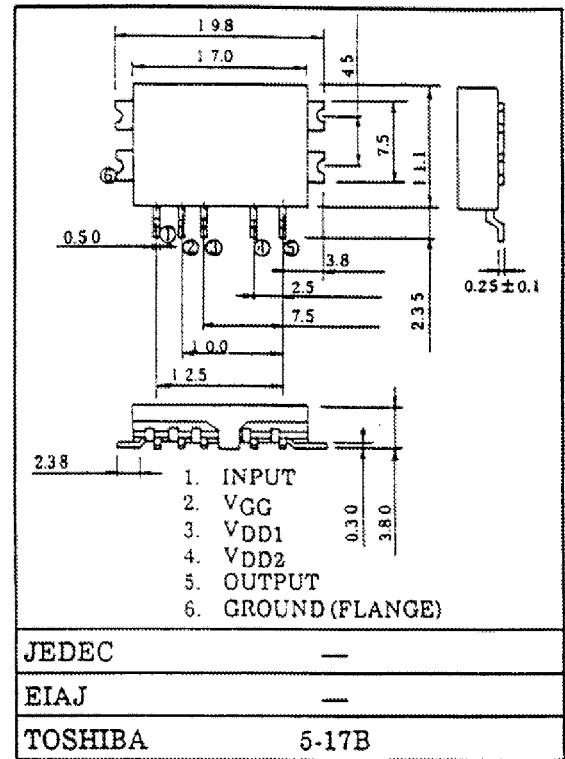
#### Absolute Maximum Ratings ( $T_c = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
DC Supply Voltage	$V_{DD1}$	10	V
	$V_{DD2}$	10	
	$V_{GG}$	-6	
Input Power	$P_i$	16	mW
Operating Case Temperature Range	$T_{c(opr)}$	-30 ~ 100	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40 ~ 110	$^\circ\text{C}$

#### CAUTION

GaAs (Gallium Arsenide) is used in this product. The dust or vapor can be dangerous to humans. 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.

Unit in mm

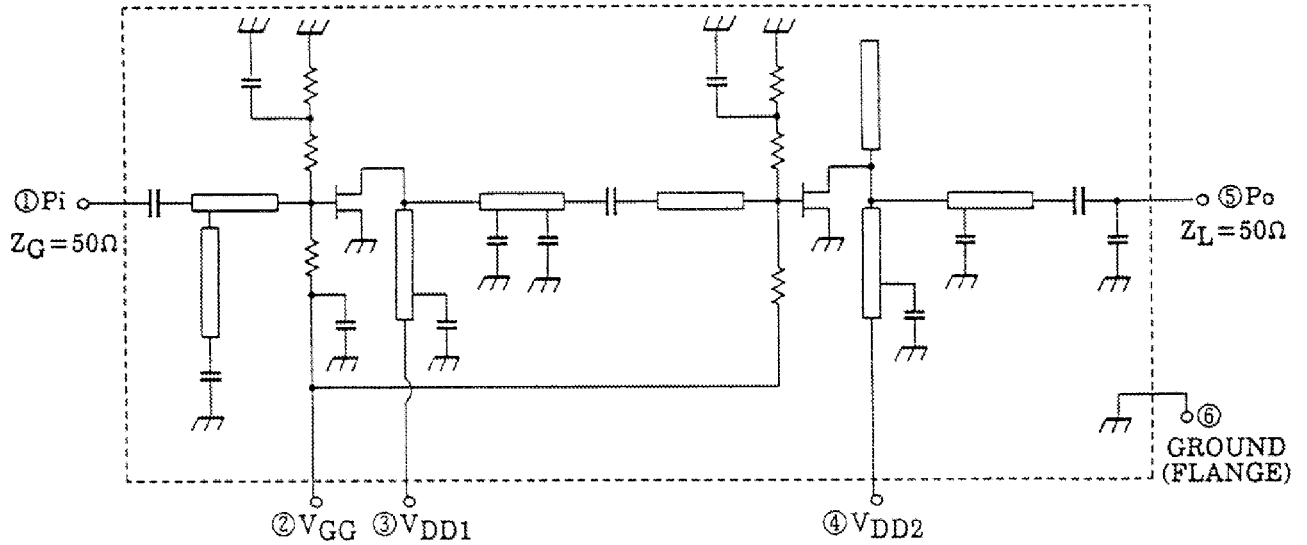


Weight : 2 g

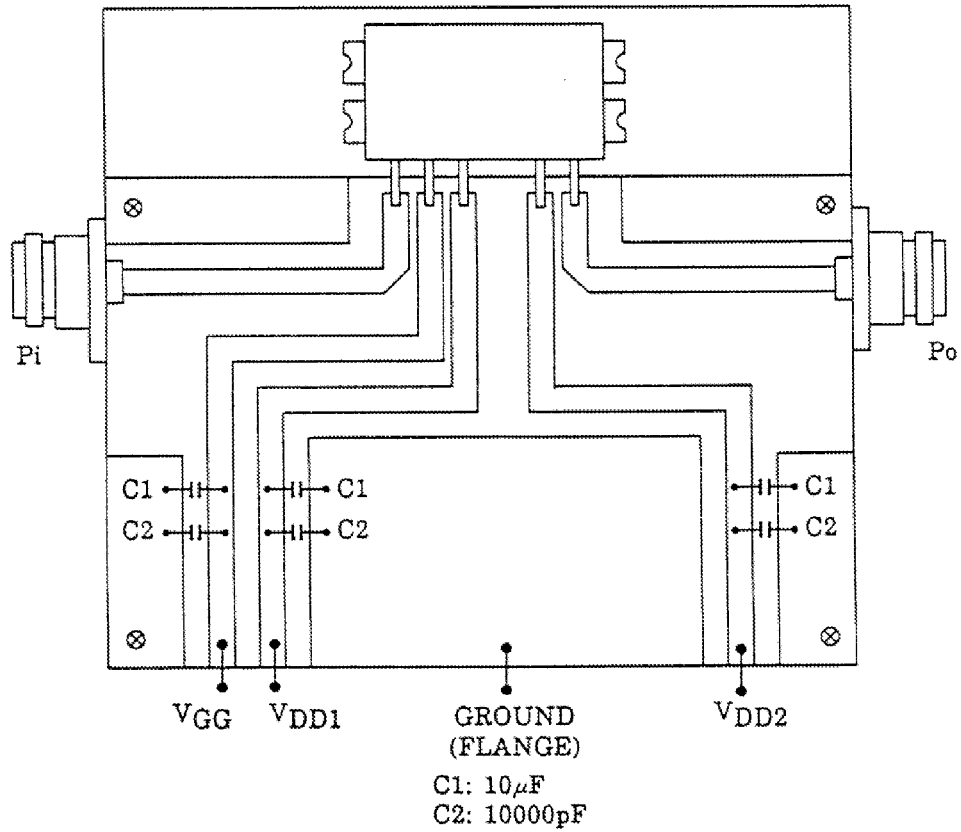
## Electrical Characteristics (Tc = 25°C)

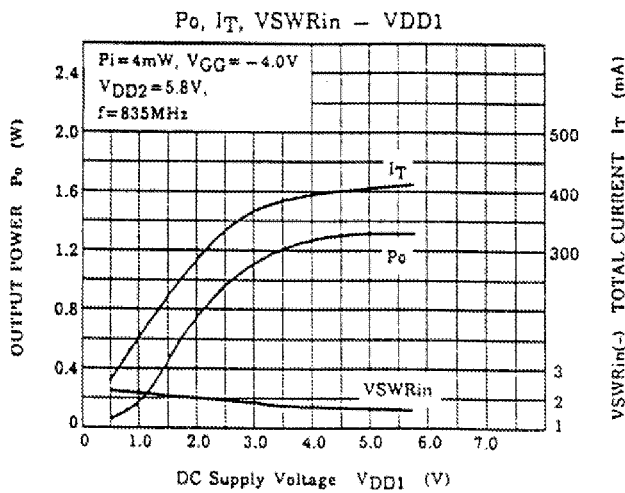
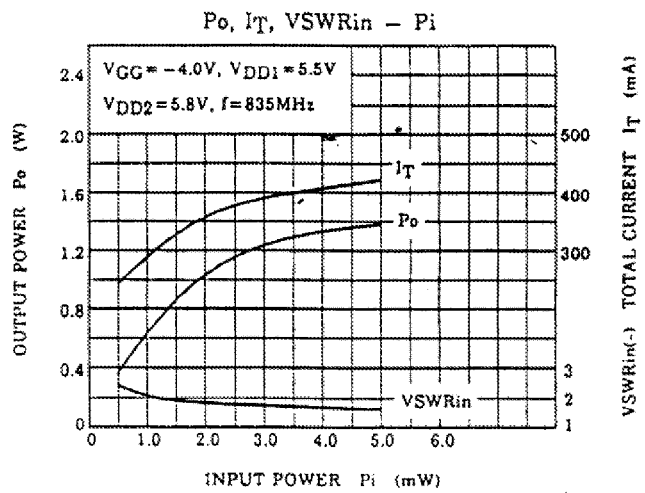
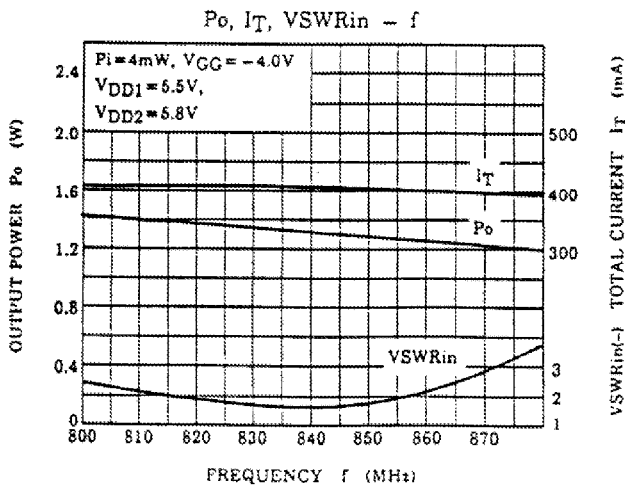
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f <sub>range</sub>	—	824	—	849	MHz
Output Power (1)	P <sub>o</sub>	Pi = 4mW, V <sub>DD1</sub> = 5.5V, V <sub>DD2</sub> = 5.8V, V <sub>GG</sub> = -4V, Z <sub>G</sub> = Z <sub>L</sub> = 50Ω(Note 1)	1.12	—	—	W
Power Gain	G <sub>P</sub>		24.4	—	—	dB
Input V <sub>SWR</sub>	V <sub>SWRin</sub>	Po = 1.12mW (30.5dBm) V <sub>DD1</sub> = adjust V <sub>DD2</sub> = 5.8V, Pi = 4mW V <sub>GG</sub> = -4V Z <sub>G</sub> = Z <sub>L</sub> = 50Ω	—	—	3	-
Gate Current	I <sub>GG</sub>		—	—	-5	mA
Total Current	I <sub>T</sub>		—	—	390	mA
Harmonics	2f0		—	—	-30	dBc
	3f0	—	—	-30	dBc	
Load Mismatch	—	Po = 1.12mW (30.5dBm) V <sub>DD1</sub> = adjust V <sub>DD2</sub> = 9V, Pi = 4mW V <sub>GG</sub> = -4V V <sub>SWR</sub> Load = 20:1 all phase	No Degradation			—
Stability	—	Pi = 2.5 ~ 10mW V <sub>DD1</sub> = 0 ~ 7V, V <sub>DD2</sub> = 5 ~ 9V V <sub>GG</sub> = -4V V <sub>SWR</sub> Load = 3:1 all phase	All spurious output than 60dB below desired signal			—
TX Noise	—	Pi = 4mW, V <sub>DD1</sub> = 0 ~ 5.5V, V <sub>DD2</sub> = 5.8V V <sub>GG</sub> = -4V Δf = +45MHz BW = 10kHz	—	-100	—	dBm

SCHEMATIC



TEST FIXTURE





The information contained here is subject to change without notice.

The information contained herein is presented only as guide for the applications of our products. No responsibility is assumed by TOSHIBA for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of TOSHIBA or others. These TOSHIBA products are intended for usage in general electronic equipments (office equipment, communication equipment, measuring equipment, domestic electrification, etc.) Please make sure that you consult with us before you use these TOSHIBA products in equipments which require high quality and/or reliability, and in equipments which could have major impact to the welfare of human life (atomic energy control, spaceship, traffic signal, combustion control, all types of safety devices, etc.). TOSHIBA cannot accept liability to any damage which may occur in case these TOSHIBA products were used in the mentioned equipments without prior consultation with TOSHIBA.