

# PFO010

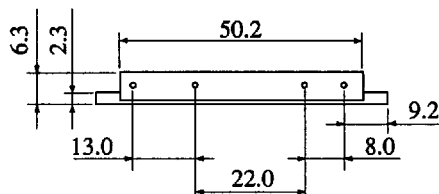
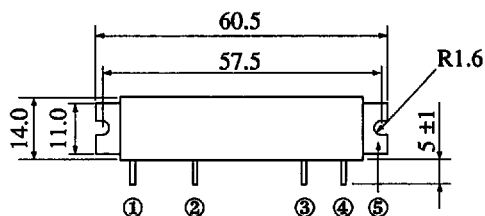
HITACHI/(OPTOELECTRONICS)

## HIGH FREQUENCY POWER MOS FET MODULE

UHF Band 820-850 MHz

### FEATURES

- Include Input and Output Matching Circuit
- Easy to Control Output Power
- Superior to Stability at Load Mismatching



- ① Pin
- ②  $V_{APC}$
- ③  $V_{DD}$
- ④ Pout
- ⑤ GND

(Dimensions in mm)

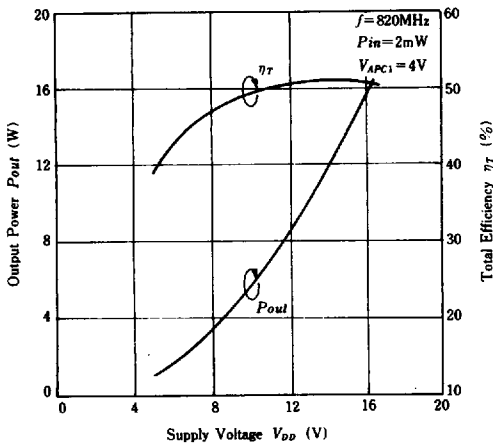
### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Item	Symbol	Rating	Unit
Supply Voltage	$V_{DD}$	17	V
Maximum Circuit Current	$I_D$	3.0	A
APC Voltage	$V_{APC}$	8	V
Maximum Input Power	$P_{in}$	20	mW
Operating Maximum Case Temperature	$T_{c(op)}$	-40~+100	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-45~+125	$^\circ\text{C}$

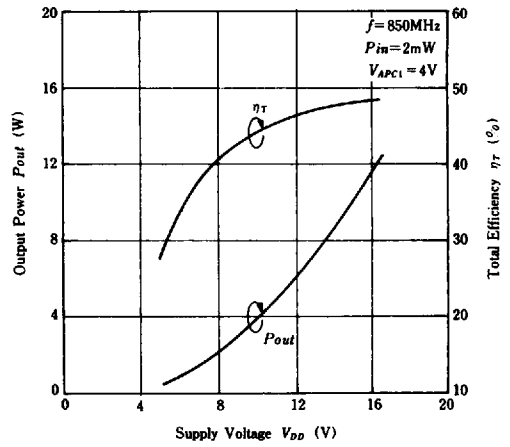
### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain Cutoff Current	$I_{DS}$	$V_{DD1} = V_{DD2} = 17\text{V}$ , $V_{APC} = 0$	-	-	500	$\mu\text{A}$
Total Efficiency	$\eta_T$	$f = 820, 850\text{MHz}$ ,	35	40	-	%
2nd Harmonic Distortion	2nd H.D.	$P_{in} = 2\text{mW}$ ,	-	-50	-30	dB
3rd Harmonic Distortion	3rd H.D.	$V_{DD} = 12.5\text{V}$ ,	-	-50	-30	dB
Input VSWR	VSWR(in)	$P_{in} = 6\text{W}$ (at APC Control)	-	1.5	3.0	-
Output VSWR	VSWR(out)	$Z_{in} = Z_{out} = 50\Omega$	-	1.5	-	-
Stability	-	$V_{DD} = 12.5\text{V}$ , $P_{in} = 2\text{mW}$ , $f = 820\text{MHz}$ , $P_{out} = 6\text{W}$ (at APC Control), $R_L = 50\Omega$ , Output VSWR $\neq \infty$ All Phase, $t = 20\text{sec}$	No Parasitic Oscillation			-

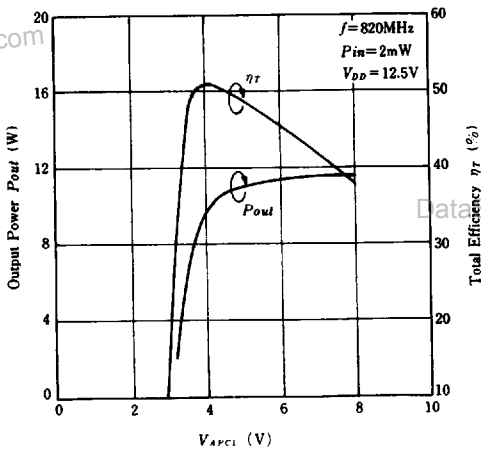
**$P_{out}$ ,  $\eta_T$  VS.  $V_{DD}$**



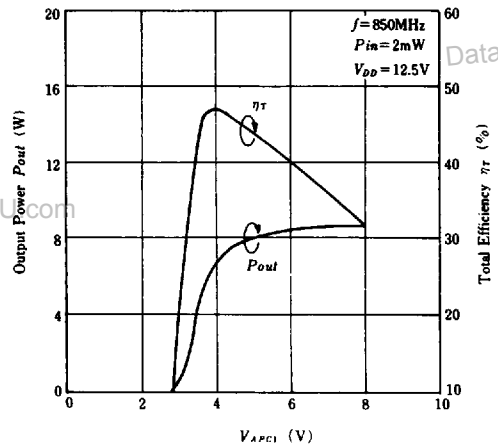
**$P_{out}$ ,  $\eta_T$  VS.  $V_{DD}$**



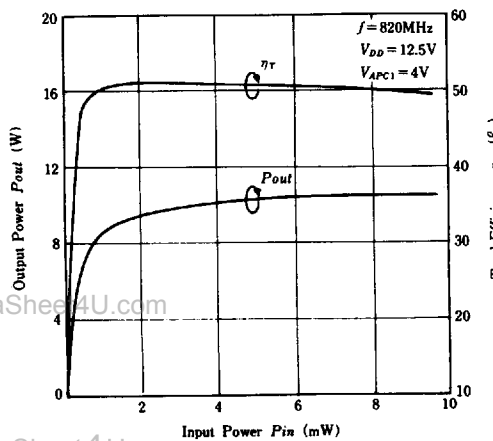
**$P_{out}$ ,  $\eta_T$  VS.  $V_{APC1}$**



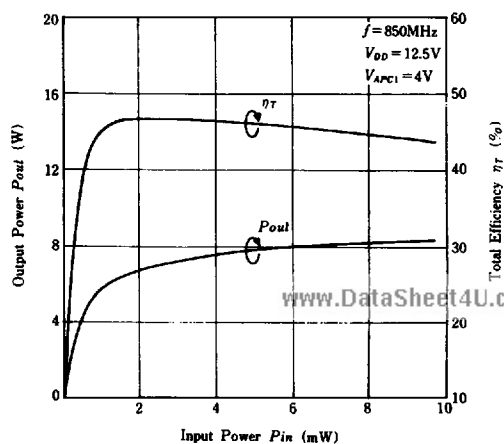
**$P_{out}$ ,  $\eta_T$  VS.  $V_{APC1}$**

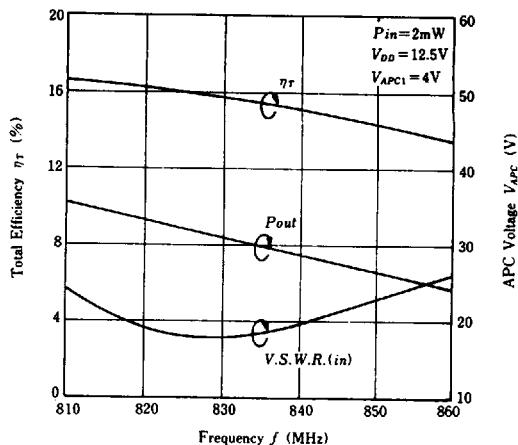
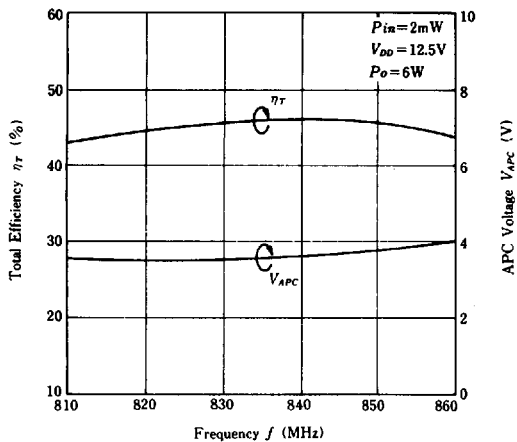


**$P_{out}$ ,  $\eta_T$  VS.  $P_{in}$**

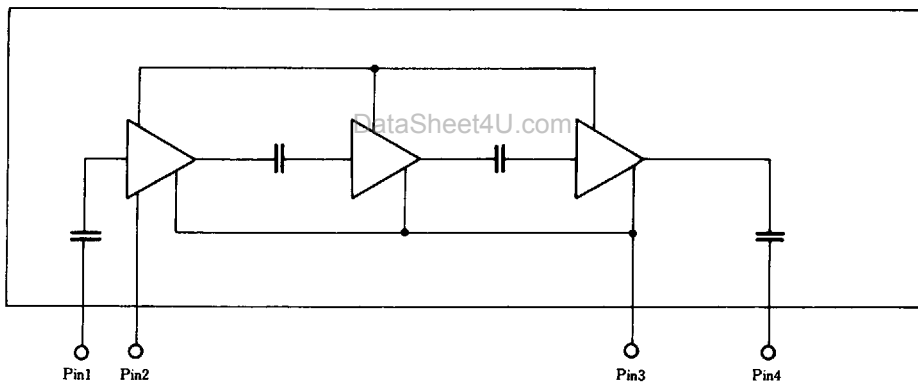


**$P_{out}$ ,  $\eta_T$  VS.  $P_{in}$**





INTERNAL DIAGRAM



TEST SYSTEM DIAGRAM

