M57786H

470~512MHz, 5W, FM PORTABLE RADIO

DESCRIPTION

M57786H is a thick film RF power module specifically designed for 470 ~ 512MHz, 5W FM portable sets.

FEATURES

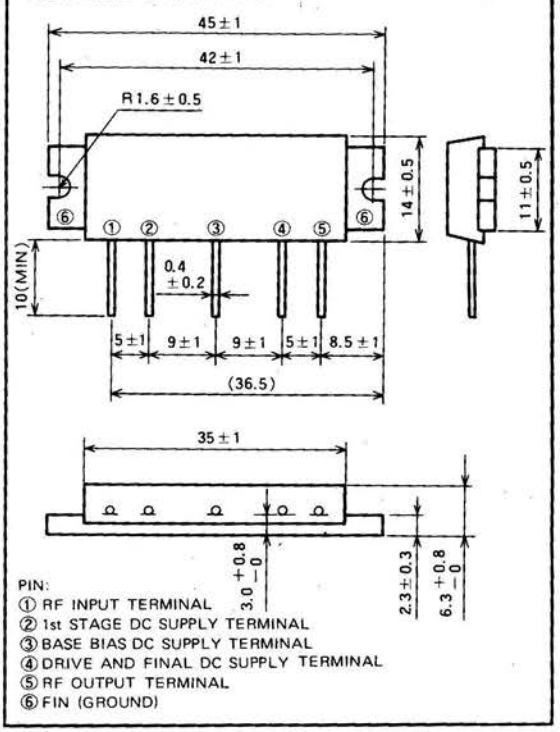
- Wide band: 42MHz, f = 470 ~ 512MHz
- High total efficiency
  $\eta_T \geqq 40\%$ MIN
- High gain, High output
  $Gp \geqq 21dB$ @V_{CC} = 7.2V, Po $\geqq$ 7W, Pin = 50mW
- Small package: 45 x 14 x 6.3mm

APPLICATION

Output stage of 5W output UHF band portable radio sets.

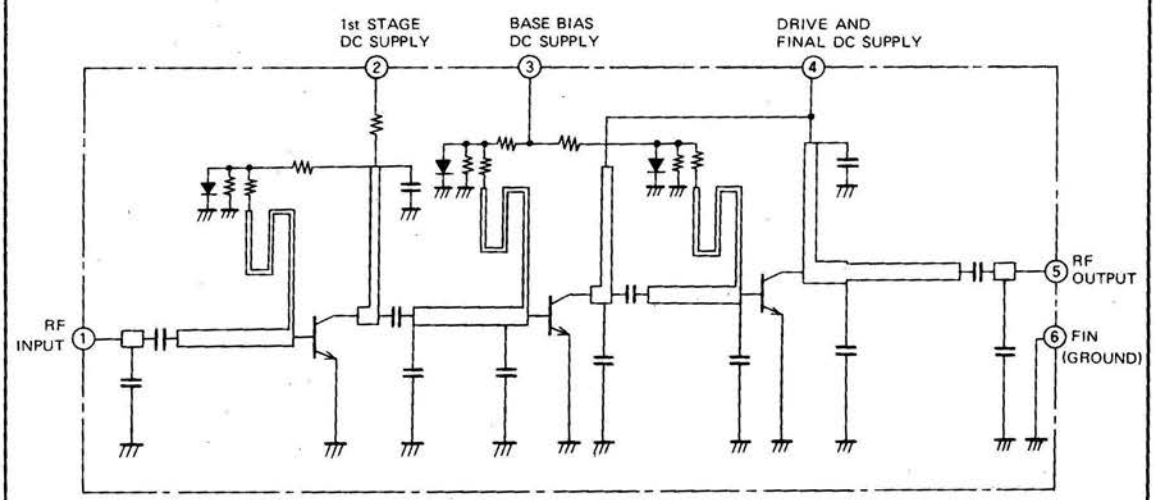
OUTLINE DRAWING

Dimensions in mm



PIN:
① RF INPUT TERMINAL
② 1st STAGE DC SUPPLY TERMINAL
③ BASE BIAS DC SUPPLY TERMINAL
④ DRIVE AND FINAL DC SUPPLY TERMINAL
⑤ RF OUTPUT TERMINAL
⑥ FIN (GROUND)

EQUIVALENT CIRCUIT



470~512MHz, 5W, FM PORTABLE RADIO

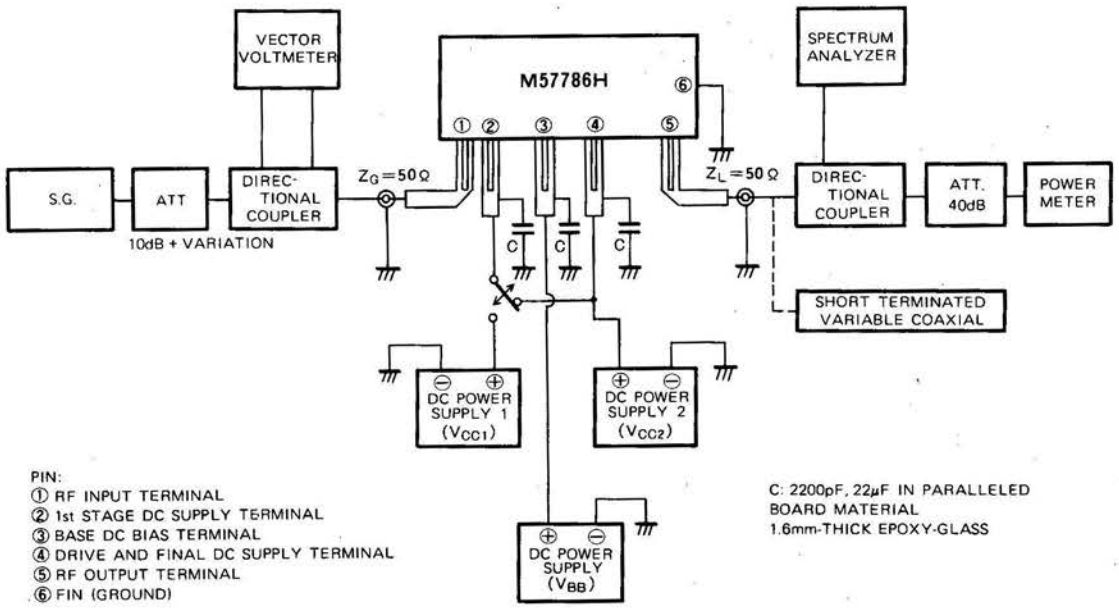
ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CC}	DC Supply voltage		10	V
V_{BB}	Base DC bias voltage		6	V
I_{CC}	Total current		4	A
$P_{in(max)}$	Input power	$Z_G = Z_L = 50\,\Omega$	100	mW
$P_{O(max)}$	Output power	$Z_G = Z_L = 50\,\Omega$	10	W
$T_{C(OP)}$	Operation case temperature		−30~+110	°C
T_{stg}	Storage temperature		−40~−110	°C

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

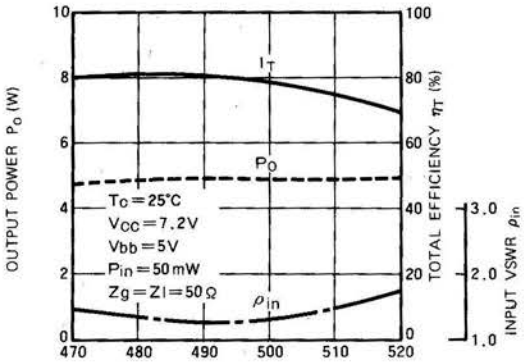
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
P_O	Output power	V_{CC} = 7.2V, V_{BB} = 5V, f = 470~512MHz, P_{in} = 50mW, $Z_G = Z_L = 50\,\Omega$	7	8		W
η_T	Total efficiency		40	45		%
—	2nd harmonic			−27	−25	dB
—	3nd harmonic			−35	−30	dB
ρ_{in}	Input VSWR			1.5	2.5	—
ρ_{out}	Output VSWR			1.5		—
—	Load VSWR tolerance	$V_{CC1} = V_{CC2}$ = 7.2V, V_{BB} = 5V, f = 470~512 MHz, P_O = 7W, $\rho_L \geq 20$ (All phase), $Z_G = 50\,\Omega$	20 : 1			—

TEST BLOCK DIAGRAM

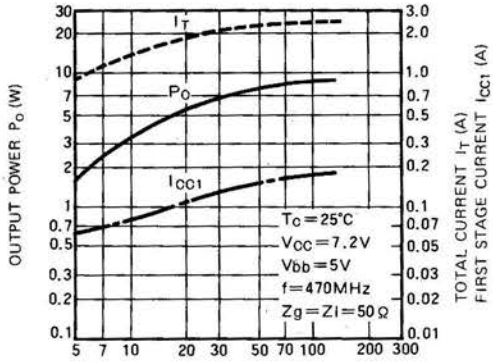


TYPICAL PERFORMANCE DATA

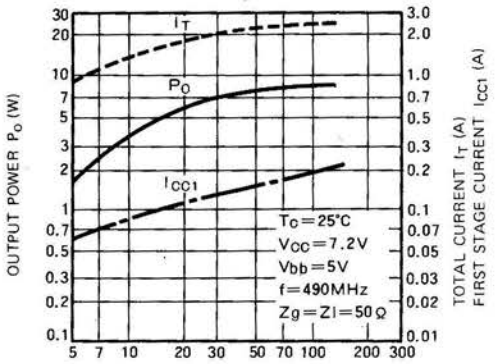
OUTPUT POWER, TOTAL EFFICIENCY, INPUT VSWR VS. FREQUENCY CHARACTERISTICS



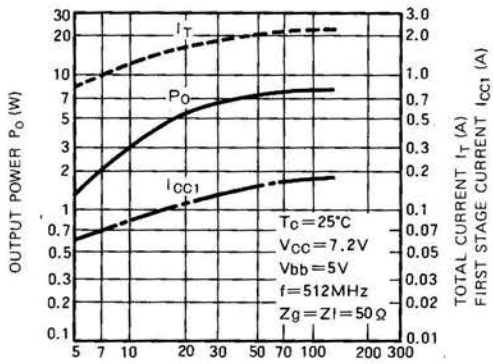
OUTPUT POWER, TOTAL CURRENT, FIRST STAGE CURRENT VS. INPUT POWER CHARACTERISTICS



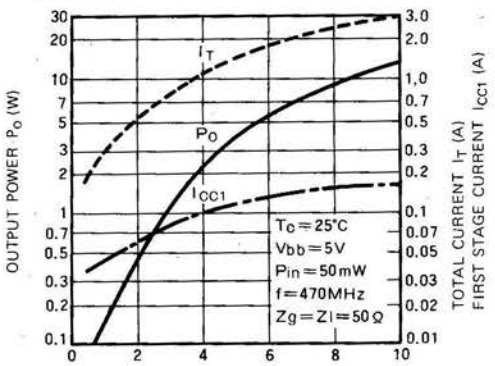
OUTPUT POWER, TOTAL CURRENT, FIRST STAGE CURRENT VS. INPUT POWER CHARACTERISTICS



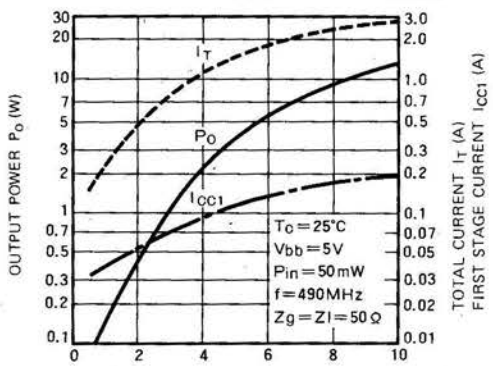
OUTPUT POWER, TOTAL CURRENT, FIRST STAGE CURRENT VS. INPUT POWER CHARACTERISTICS



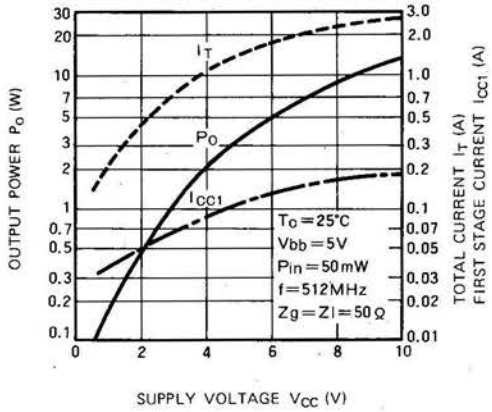
OUTPUT POWER, TOTAL CURRENT, FIRST STAGE CURRENT VS. SUPPLY VOLTAGE CHARACTERISTICS



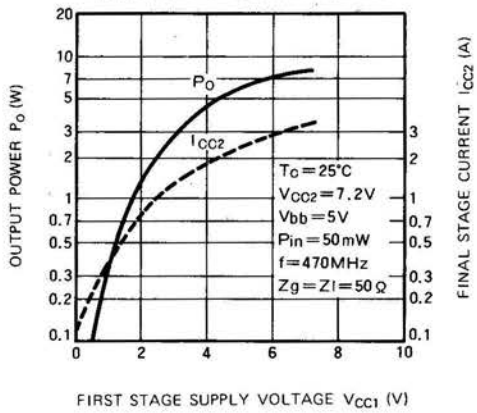
OUTPUT POWER, TOTAL CURRENT, FIRST STAGE CURRENT VS. SUPPLY VOLTAGE CHARACTERISTICS



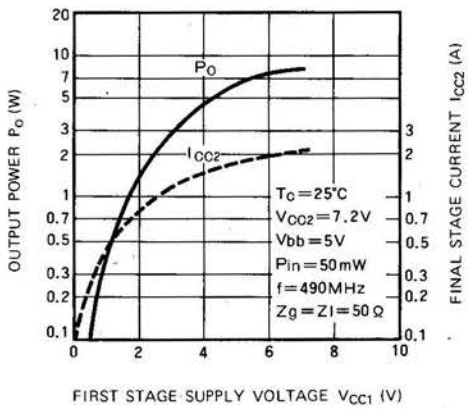
OUTPUT POWER, TOTAL CURRENT, FIRST STAGE CURRENT VS. SUPPLY VOLTAGE CHARACTERISTICS



OUTPUT POWER, FINAL STAGE CURRENT VS. FIRST STAGE SUPPLY VOLTAGE CHRACTERISTICS



OUTPUT POWER, FINAL STAGE CURRENT VS. FIRST STAGE SUPPLY VOLTAGE CHARACTERISTICS



OUTPUT POWER, FINAL STAGE CURRENT VS. FIRST STAGE SUPPLY VOLTAGE CHARACTERISTICS