TENTATIVE

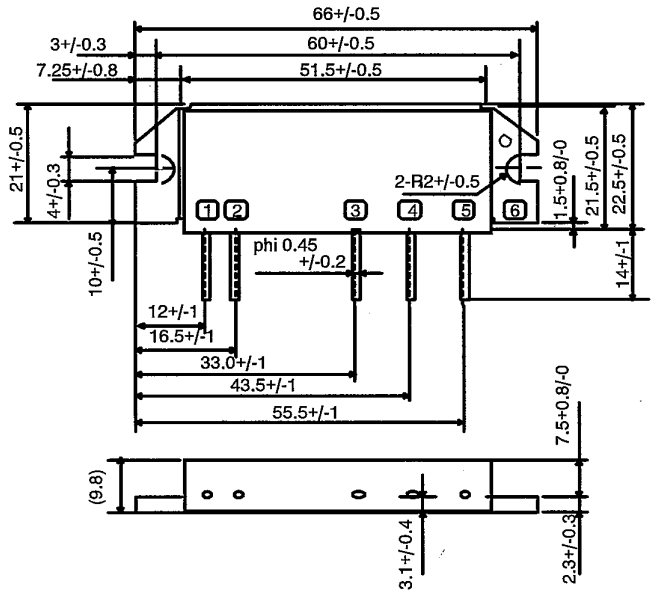
MITSUBISHI RF POWER MODULE

M57716M

Silicon Bipolar Power Amplifier for 410-430MHz 13W Digital Mobile

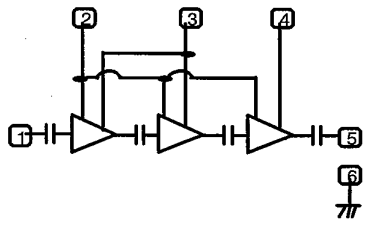
OUTLINE DRAWING

Dimensions in mm



H3

BLOCK DIAGRAM



PIN:
1 Pin : RF INPUT
2 VBB : BASE BIAS SUPPLY
3 Vcc1: 1st. DC SUPPLY
4 Vcc2: 2nd. DC SUPPLY
5 Po : RF OUTPUT
6 GND : FIN

MAXIMUM RATINGS (Tc=25deg C UNLESS OTHERWISE NOTED)

SYMBOL	PARAMETER	CONDITIONS	RATINGS	UNIT
VCC	SUPPLY VOLTAGE	V_{BB}=9V, Z_G=Z_L=50 ohm	17	V
VBB	BIAS VOLTAGE	V_{CC}=12.5V, Z_G=Z_L=50 ohm	9.5	V
Pin	INPUT POWER	f=410-430MHz, VCC1<12.5V, Z_G=Z_L=50 ohm	300	mW
Po	OUTPUT POWER	f=410-430MHz, VCC1<12.5V, Z_G=Z_L=50 ohm	25	W
Tc(OP)	OPERATION CASE TEMPERATURE	Z_G=Z_L=50 ohm	-30 to +110	deg. C
Tstg	STORAGE TEMPERATURE		-40 to +110	deg. C

Note:Above parameters are guaranteed independently.

ELECTRICAL CHARACTERISTICS (Tc=25deg.C UNLESS OTHERWISE NOTED)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS		UNIT
			MIN	MAX	
f	FREQUENCY RANGE		410	430	MHz
Po	OUTPUT POWER	V_{CC}=12.5V, VBB=9V, Pin=0.2W, Z_G=Z_L=50 ohm	13		W
Efficiency	TOTAL EFFICIENCY	V_{CC}=12.5V, VBB=9V, Po=4.8W (Pin adjust), Z_G=Z_L=50 ohm	15		%
2fo	2nd HARMONIC	V_{CC}=12.5V, VBB=9V,		-30	dBc
3fo	3rd HARMONIC	Pin=0.2W, Z_G=Z_L=50 ohm		-30	dBc
VSWR in	INPUT VSWR			2.5	-
Gp	Power Gain	V_{CC}=12.5V, VBB=9V, Pin=10mW, Z_G=Z_L=50 ohm	23		dB
ACP	Adjucent Channel Power	Vcc=12.5V, VBB=9V, Po(ave.)=4.8W(Pin adjust) Role off facter=0.35, Bit rate=48.6Kbps, Band width=24.3KHz, Channel spacing=33.75KHz, Pi/4 DQPSK modulation		-30	dBc
-	STABILITY (note 1)	Z_G=50 ohm, V_{CC}=10-16V, VBB=9V, Pin=0-300mW Po<20W, LOAD VSWR < 3.0:1(all phase)	No parasitic oscillation		-
VSWRT	LOAD VSWR TOLERANCE	V_{CC}=15.2V, VBB=9V, Po=13W(Pin adjust) Z_G=50 ohm, LOAD VSWR=8.0:1	No degradation or destroy		-

NOTE: Above parameters, ratings, limits and conditions are subject to change.

NOTE1: Stability is tested by sampling test (10pcs/LOT)

Keep safety first in your circuit designs!

Mitsubishi Electric Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of non-flammable material or (iii) prevention against any malfunction or mishap.