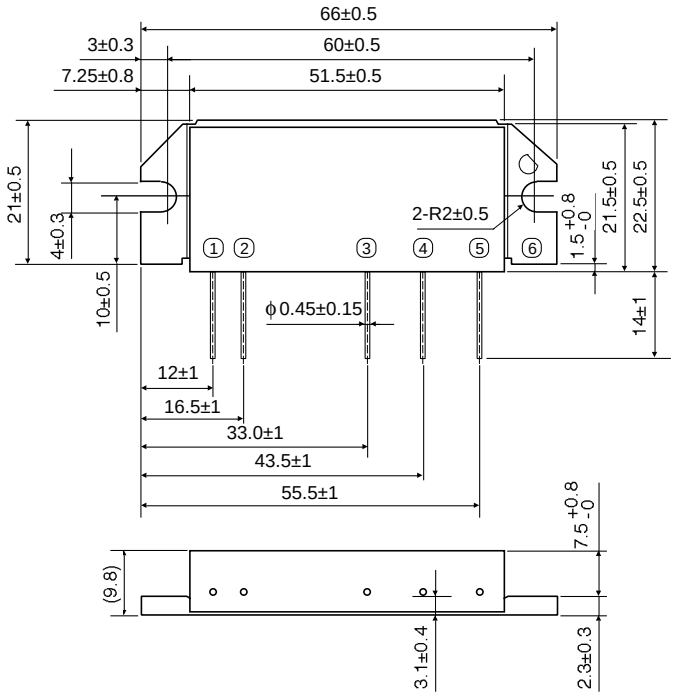
380-400MHz, 12.5V, 5W, DIGITAL MOBILE RADIO

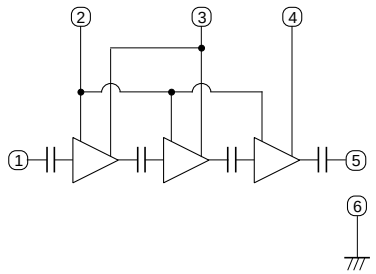
OUTLINE DRAWING

Dimensions in mm



H3

BLOCK DIAGRAM



PIN:
①Pin : RF INPUT
②VBB : BASE BIAS SUPPLY
③VCC1: 1st. DC SUPPLY
④VCC2: 2nd. DC SUPPLY
⑤PO : RF OUTPUT
⑥GND: FIN

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

Symbol	Parameter	Conditions	Ratings	Unit
V_{CC}	Supply voltage	$Z_G=Z_L=50\Omega$, V_{BB}=8.5V	17	V
V_{BB}	Bias voltage	$Z_G=Z_L=50\Omega$, $V_{CC}\leq$13.2V	9	V
I_{CC}	Total current	$Z_G=Z_L=50\Omega$	6	A
$P_{in\ (max)}$	Input power	$Z_G=Z_L=50\Omega$, $V_{CC}\leq$13.2V	300	mW
$P_{O\ (max)}$	Output power	$Z_G=Z_L=50\Omega$	25	W
$T_{C\ (OP)}$	Operation case temperature	$Z_G=Z_L=50\Omega$	-30 to +110	°C
T_{stg}	Storage temperature		-40 to +110	°C

Note. Above parameters are guaranteed independently.

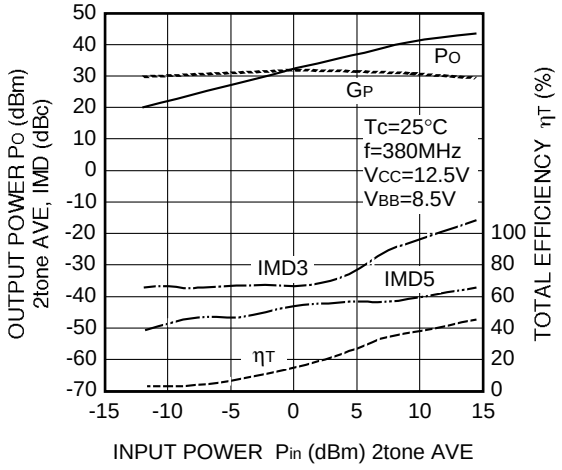
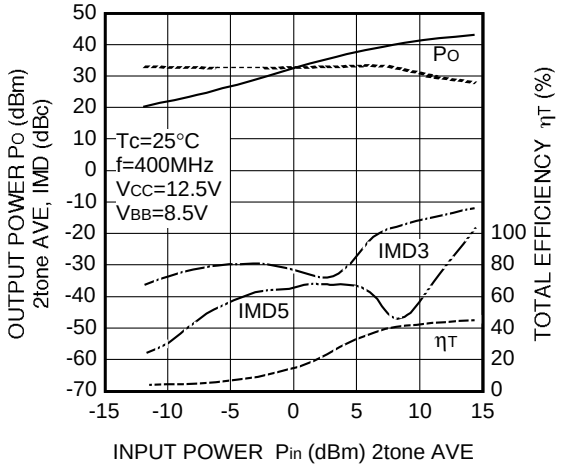
ELECTRICAL CHARACTERISTICS (Tc=25°C unless otherwise noted)

Symbol	Parameter	Test conditions	Limits		Unit
			Min	Max	
f	Frequency range		380	400	MHz
P_O	Output power	P_{in}=200mW, V_{CC}=12.5V, V_{BB}=9V, $Z_G=Z_L=50\Omega$	13		W
η_T	Total efficiency	V_{CC}=12.5V, V_{BB}=9V, P_O=5W (P_{in}:controlled), $Z_G=Z_L=50\Omega$	15		%
$2f_O$	2nd. harmonic			-25	dBc
$3f_O$	3rd. harmonic			-30	dBc
ρ_{in}	Input VSWR			2.8	-
G_p	Power gain		28		dB
IMD3	3rd. internal modulation	V_{CC}=12.5V, V_{BB}=9V, P_O (AVE)=5W (P_{in}:controlled) 2tone, Δf=10kHz, $Z_G=Z_L=50\Omega$		-25	dBc
IMD5	5th. internal modulation			-32	dBc
-	Load VSWR tolerance	V_{CC}=15.2V, V_{BB}=9V, P_O=13W (P_{in}:controlled) $Z_G=50\Omega$, Load VSWR=4:1 (All phase)	No degradation or destroy		-
-	Stability	P_{in}=0-300mW, V_{CC}=10-16V, V_{BB}=9V, $P_O\leq$20W, $\rho_I\leq$3.0 (All phase), $Z_G=50\Omega$	No parastic oscillation		Note 1

Note. Above parameters, ratings, limits and test conditions are subject to change.
Note 1. Stability is tested by sampling test (10pcs/Lot)

TYPICAL PERFORMANCE DATA

OUTPUT POWER, TOTAL EFFICIENCY, IMD VS. INPUT POWER



OUTPUT POWER, TOTAL EFFICIENCY, IMD VS. INPUT POWER