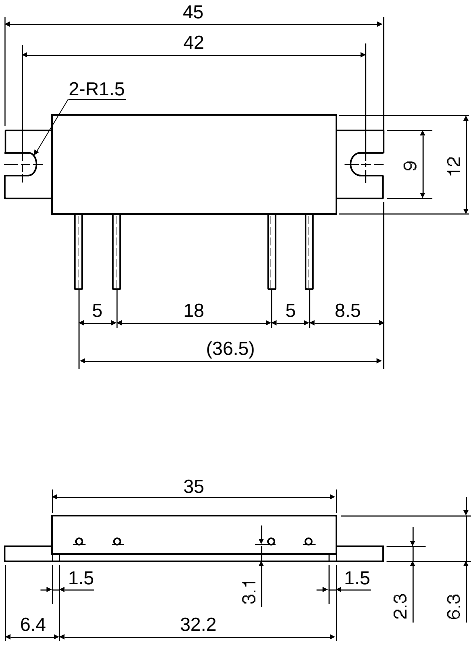
MITSUBISHI RF POWER MODULE

M68745L

SILICON MOS FET POWER AMPLIFIER, 806-870MHz, 3.8W, FM PORTABLE RADIO

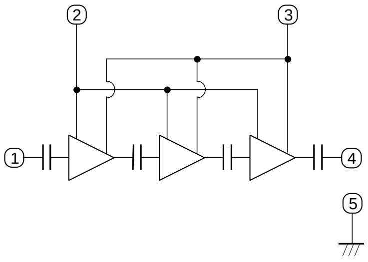
OUTLINE DRAWING

Dimensions in mm



H50

BLOCK DIAGRAM



PIN:
①P_{in} : RF INPUT
②V_{GG} : GATE BIAS SUPPLY
③V_{DD} : DRAIN BIAS SUPPLY
④P_O : RF OUTPUT
⑤GND: FIN

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

Symbol	Parameter	Conditions	Ratings	Unit
V_{DD}	Supply voltage	$Z_G=Z_L=50\Omega$	9	V
V_{GG}	Gate bias voltage		5.5	V
P_{in}	Input power	f=806-870MHz, $Z_G=Z_L=50\Omega$	6	mW
P_O	Output power	f=806-870MHz, $Z_G=Z_L=50\Omega$	6	W
T_C (OP)	Operation case temperature	f=806-870MHz, $Z_G=Z_L=50\Omega$	-30 to +100	°C
T_{stg}	Storage temperature		-40 to +100	°C

Note. Above parameters are guaranteed independently.

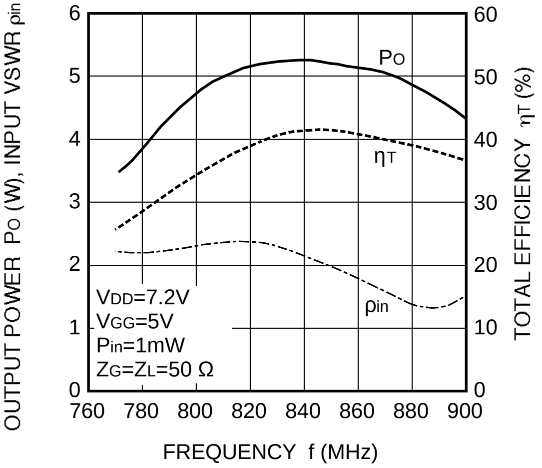
ELECTRICAL CHARACTERISTICS (Tc=25°C, $Z_G=Z_L=50\Omega$ unless otherwise noted)

Symbol	Parameter	Test conditions	Limits		Unit
			Min	Max	
f	Frequency range		806	870	MHz
P_O	Output power	V_{DD}=7.2V, V_{GG}=5V, P_{in}=1mW, $Z_G=Z_L=50\Omega$	3.8		W
$2f_O$	2nd. harmonic			-30	dBc
ρ_{in}	Input VSWR			4	—
η_T	Total efficiency	P_O=3.8W(V_{GG}=Adjust), V_{DD}=7.2V, P_{in}=1mW, $Z_G=Z_L=50\Omega$	30		%
—	Stability	$Z_G=Z_L=50\Omega$, V_{DD}=5-9.3V, Load VSWR <4:1	No parasitic oscillation		—
—	Load VSWR tolerance	V_{DD}=9V, P_{in}=1mW, P_O=3.8W (V_{GG} Adjust), Z_L=20:1	No degradation or destroy		—

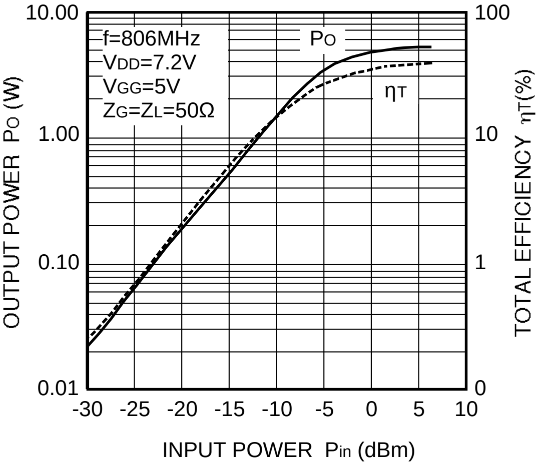
Note. Above parameters, ratings, limits and test conditions are subject to change.

TYPICAL PERFORMANCE DATA

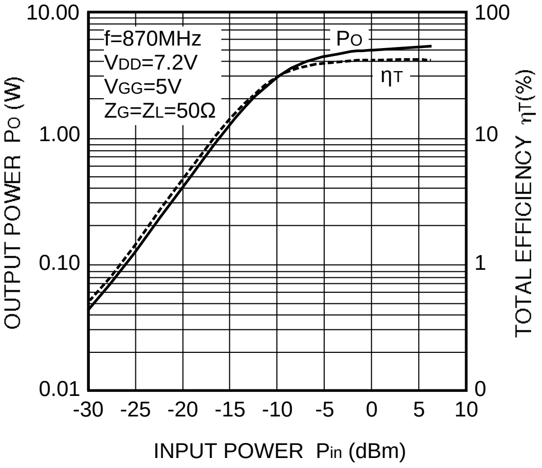
OUTPUT POWER, INPUT VSWR, TOTAL EFFICIENCY VS. FREQUENCY



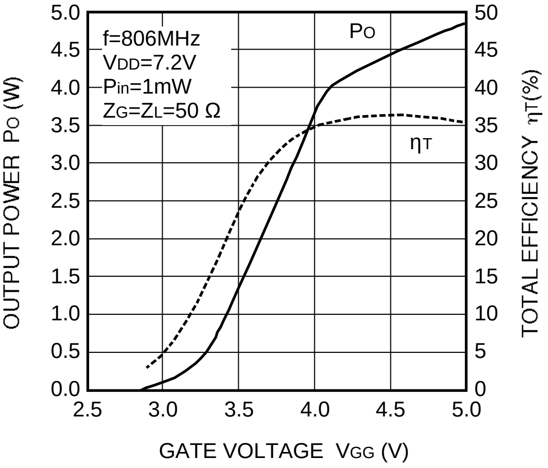
OUTPUT POWER, TOTAL EFFICIENCY VS. INPUT POWER



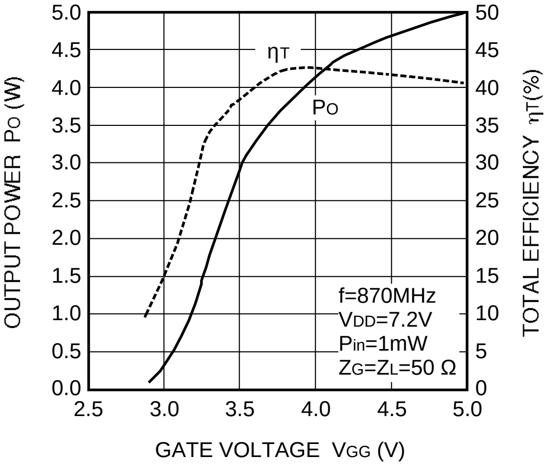
OUTPUT POWER, TOTAL EFFICIENCY VS. INPUT POWER



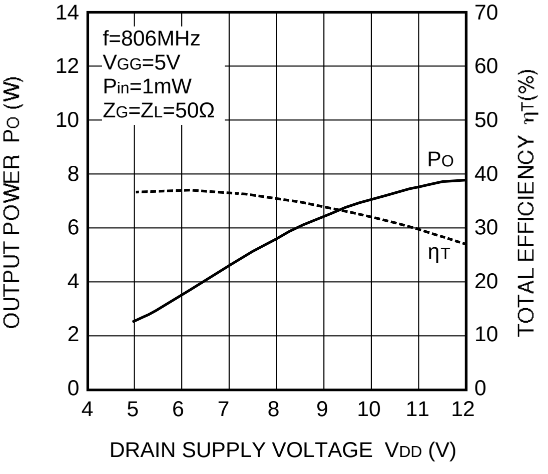
OUTPUT POWER, TOTAL EFFICIENCY VS. GATE VOLTAGE



OUTPUT POWER, TOTAL EFFICIENCY VS. GATE VOLTAGE



OUTPUT POWER, TOTAL EFFICIENCY VS. DRAIN SUPPLY VOLTAGE



OUTPUT POWER, TOTAL EFFICIENCY
VS. DRAIN SUPPLY VOLTAGE