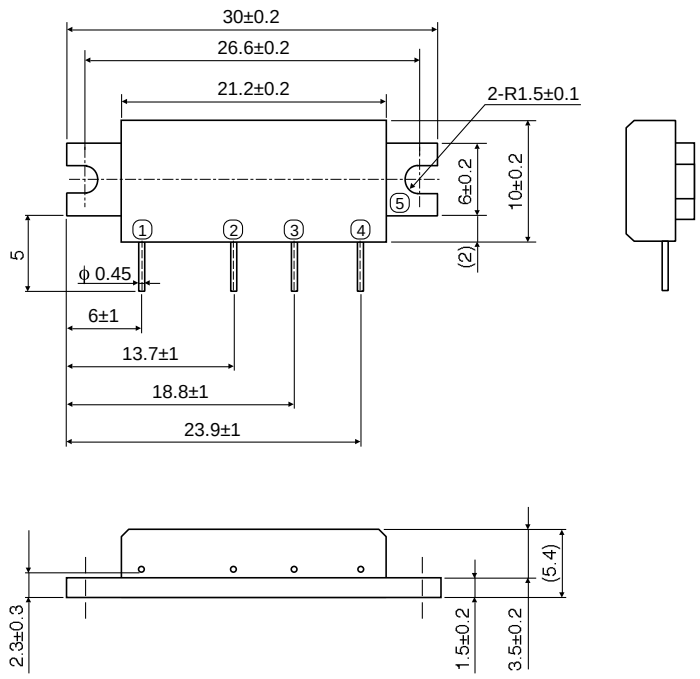
M68757L

SILICON MOS FET POWER AMPLIFIER, 806-870MHz, 3W, FM PORTABLE RADIO

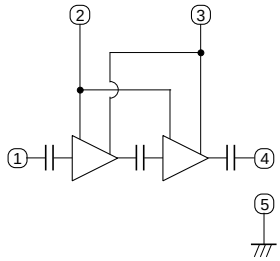
OUTLINE DRAWING

Dimensions in mm



H46

BLOCK DIAGRAM



PIN:
①Pin : RF INPUT
②VGG : GATE BIAS SUPPLY
③VDD : DRAIN BIAS SUPPLY
④PO : RF OUTPUT
⑤GND: FIN

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

Symbol	Parameter	Conditions	Ratings	Unit
V_{DD}	Supply voltage	V_{GG}≤3.5V, Z_G=Z_L=50Ω	9.2	V
V_{GG}	Gate bias voltage		4	V
P_{in}	Input power	f=806-870MHz, Z_G=Z_L=50Ω	70	mW
P_O	Output power	f=806-870MHz, Z_G=Z_L=50Ω	5	W
$T_{C\ (OP)}$	Operation case temperature	f=806-870MHz, Z_G=Z_L=50Ω	-30 to +100	°C
T_{stg}	Storage temperature		-40 to +100	°C

Note. Above parameters are guaranteed independently.

ELECTRICAL CHARACTERISTICS (T_C=25°C, Z_G=Z_L=50Ω 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}=3.5V, P_{in}=50mW	3		W
η_T	Total efficiency		30		%
2f_O	2nd. harmonic			-28	dBc
ρ_{in}	Input VSWR			4	—
—	Stability	Z_G=Z_L=50Ω, V_{DD}=5-9.2V, Load VSWR <4:1	No parasitic oscillation		—
—	Load VSWR tolerance	V_{DD}=9V, P_{in}=50mW, P_O=3W (V_{GG} Adjust), Z_L=20:1	No degradation or destroy		—

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

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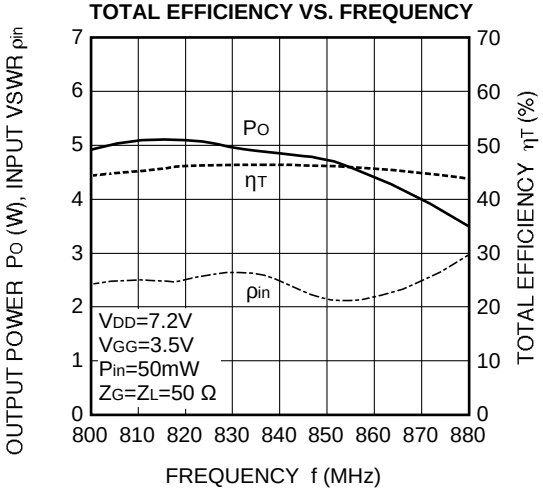
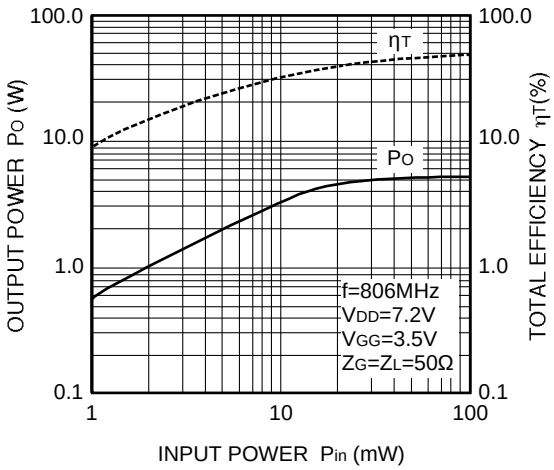
TYPICAL PERFORMANCE DATA

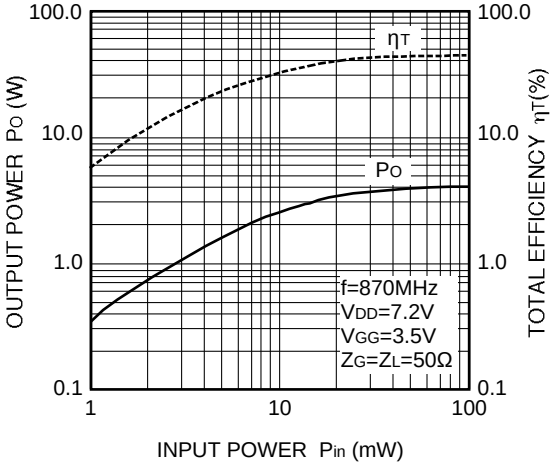
OUTPUT POWER, INPUT VSWR, TOTAL EFFICIENCY VS. FREQUENCY



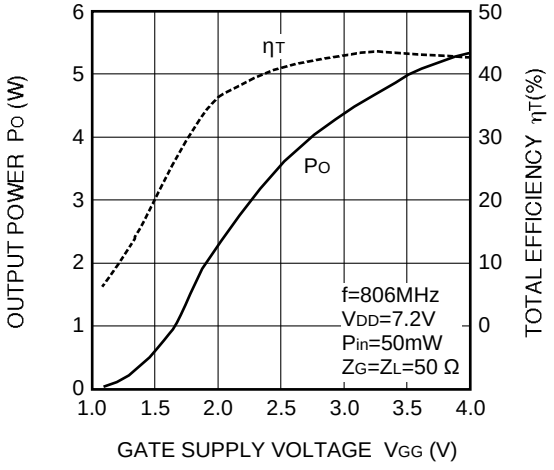
OUTPUT POWER, TOTAL EFFICIENCY VS. INPUT POWER



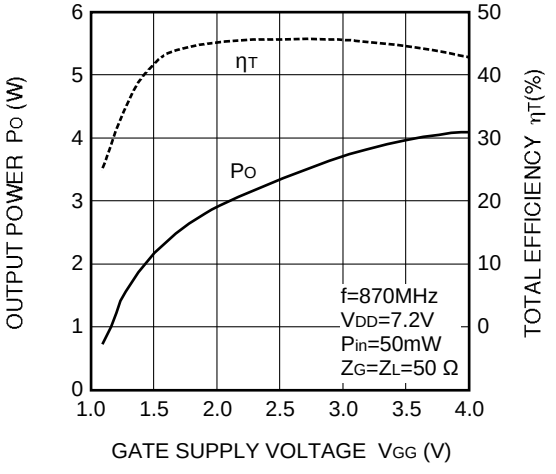
OUTPUT POWER, TOTAL EFFICIENCY VS. INPUT POWER



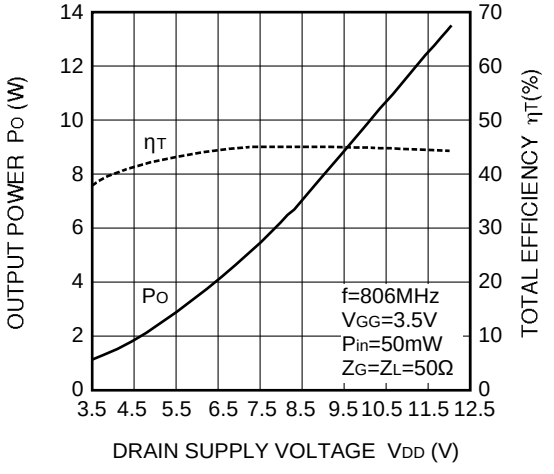
OUTPUT POWER, TOTAL EFFICIENCY VS. GATE SUPPLY VOLTAGE

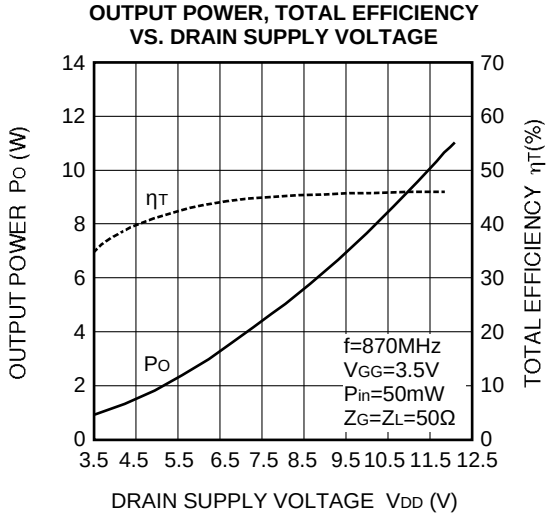


OUTPUT POWER, TOTAL EFFICIENCY VS. GATE SUPPLY VOLTAGE



OUTPUT POWER, TOTAL EFFICIENCY VS. DRAIN SUPPLY VOLTAGE




OUTPUT POWER, TOTAL EFFICIENCY
VS. DRAIN SUPPLY VOLTAGE
OUTPUT POWER PO (W)
TOTAL EFFICIENCY ηT(%)
DRAIN SUPPLY VOLTAGE VDD (V)
ηT
PO
f=870MHz
VGG=3.5V
Pin=50mW
ZG=ZL=50Ω
0
2
4
6
8
10
12
14
0
10
20
30
40
50
60
70
3.5 4.5 5.5 6.5 7.5 8.5 9.5 10.5 11.5 12.5