

PRELIMINARY
 Notice : This is not a final specification
 Some parametric limits are subject to change.

MITSUBISHI SEMICONDUCTOR <GaAs FET>

MGFK39V4045

14.0~14.5GHz BAND 8W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFK39V4045 is an internally impedance matched GaAs power FET especially designed for use in 14.0~14.5 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

- Internally impedance matched
- High output power
 $P_{1dB}=8W$ (TYP.) @ $f=14.0\sim 14.5GHz$
- High linear power gain
 $GLP=5.5dB$ (TYP.) @ $f=14.0\sim 14.5GHz$
- High power added efficiency
 $add=20\%$ (TYP.) @ $f=14.0\sim 14.5GHz$, P_{1dB}

APPLICATION

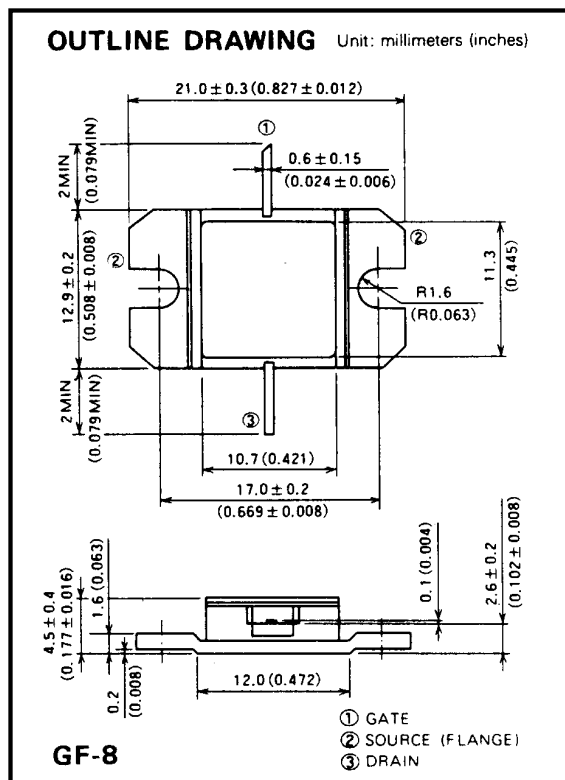
For use in 14.0~14.5GHz band amplifiers

QUALITY GRADE

- IG

RECOMMENDED BIAS CONDITIONS

- $V_{DS}=10V$
- $I_D=2.4A$
- Refer to Bias Procedure



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V _{GD0}	Gate to drain voltage	-15	V
V _{GSO}	Gate to source voltage	-15	V
I _D	Drain current	6.0	A
I _{GR}	Reverse gate current	-18	mA
I _{GF}	Forward gate current	36	mA
P _T	Total power dissipation *1	42.8	W
T _{ch}	Channel temperature	175	°C
T _{stg}	Storage temperature	-65 ~ +175	°C

*1 : T_c=25°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max	
I _{DSS}	Saturated drain current	V _{DS} =3V, V _{GS} =0V	—	4.0	6.0	A
g _m	Transconductance	V _{DS} =3V, I _D =2.4A	1.2	2.0	—	S
V _{GS} (off)	Gate to source cut-off voltage	V _{DS} =3V, I _D =20mA	-2	—	-5	V
P _{1dB}	Output power at 1dB gain compression	V _{DS} =10V, I _D =2.4A, f=14.0~14.5GHz	38.5	39.0	—	dBm
GLP	Linear power gain		4.5	5.5	—	dB
add	Power added efficiency		—	20	—	%
R _{th} (ch-c)	Thermal resistance *1	V _f method	—	—	3.5	°C/W

*1 : Channel to case