

# MGFK38V2732

## 12.7~13.2GHz BAND 6W INTERNALLY MATCHED GaAs FET

### DESCRIPTION

The MGFK38V2732 is an internally impedance matched GaAs power FET especially designed for use in 12.7~13.2 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

### FEATURES

- Internally impedance matched
- High output power  
 $P_{1dB} = 6 \text{ W (TYP.) @ } f = 12.7 \sim 13.2 \text{ GHz}$
- High linear power gain  
 $G_{LP} = 6.0 \text{ dB (TYP.) @ } f = 12.7 \sim 13.2 \text{ GHz}$
- High power added efficiency  
 $\eta_{add} = 23\% \text{ (TYP.) @ } f = 12.7 \sim 13.2 \text{ GHz, } P_{1dB}$

### APPLICATION

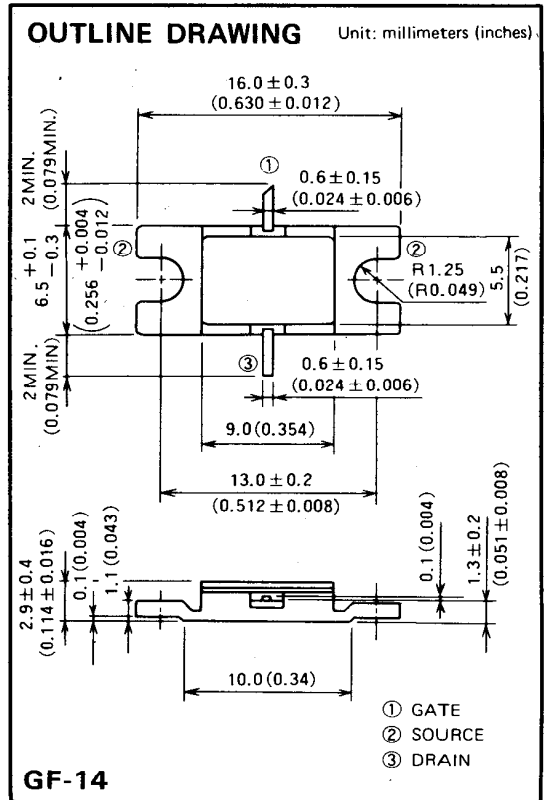
For use in 12.7~13.2 GHz band amplifiers

### QUALITY GRADE

- IG

### RECOMMENDED BIAS CONDITIONS

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



### ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Symbol	Parameter	Rating	Unit
$V_{GDO}$	Gate to drain voltage	-15	V
$V_{GSO}$	Gate to source voltage	-15	V
$I_D$	Drain current	5.6	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:  $T_c = 25^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$I_{DSS}$	Saturated drain current	$V_{DS} = 3\text{V}, V_{GS} = 0\text{V}$	—	4.0	5.6	A
$g_m$	Transconductance	$V_{DS} = 3\text{V}, I_D = 2.2\text{A}$	—	2.0	—	S
$V_{GS(off)}$	Gate to source cut-off voltage	$V_{DS} = 3\text{V}, I_D = 20\text{mA}$	-2	-3	-4	V
$P_{1dB}$	Output power at 1dB gain compression	$V_{DS} = 10\text{V}, I_D = 2.4\text{A}, f = 12.7 \sim 13.2\text{GHz}$	37	38	—	dBm
$G_{LP}$	Linear power gain		5.0	6.0	—	dB
$\eta_{add}$	Power added efficiency		—	23	—	%
$R_{th(ch-c)}$	Thermal resistance *1	$\Delta V_f$ method	—	—	3.5	°C/W

\*1: Channel to case