

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

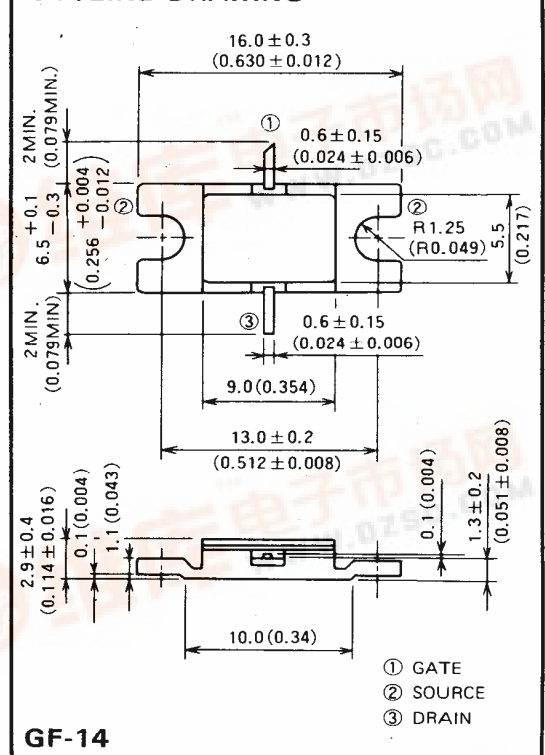
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RECOMMENDED BIAS CONDITIONS

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

OUTLINE DRAWING

Unit: millimeters (inches)

**ABSOLUTE MAXIMUM RATINGS** ($T_a = 25^\circ\text{C}$)

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	$^\circ\text{C}$
T_{stg}	Storage temperature	-65 ~ +175	$^\circ\text{C}$

*1: $T_c = 25^\circ\text{C}$ **ELECTRICAL CHARACTERISTICS** ($T_a = 25^\circ\text{C}$)

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
η_{add}	Power added efficiency		—	23	—	%
$R_{th(ch-c)}$	Thermal resistance *1	ΔV_f method	—	—	3.5	$^\circ\text{C/W}$

*1: Channel to case