

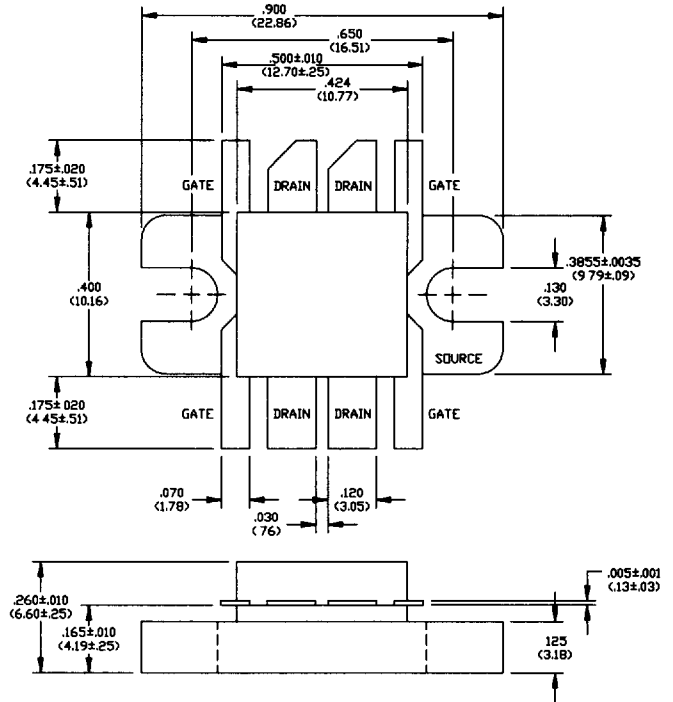


Preliminary
30 Watts, 30 - 175 MHz, 12 V

Features

- N-Channel Enhancement Mode Device
- HF to VHF Applications
- 30 Watts CW
- Common Source Push-Pull Configuration
- DMOS Structure
- Aluminum Metallization

Outline Drawing



Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	20	V
Drain-Source Current	I_{DS}	8	A
Power Dissipation	P_D	125	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-55 to +150	°C
Thermal Resistance	θ_{JC}	1.4	°C/W

UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" (MILLIMETERS ±.13MM)

Electrical Characteristics at 25°C (* per side)

Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	40	-	V	$I_D=5.0\text{ mA}, V_{GS}=0.0\text{ V}^*$
Drain-Source Leakage Current	I_{DSS}	-	1.0	mA	$V_{DS}=28.0\text{ V}, V_{GS}=0.0\text{ V}^*$
Gate-Source Leakage Current	I_{GSS}	-	1.0	µA	$V_{GS}=20\text{ V}, V_{DS}=0.0\text{ V}^*$
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	$V_{DS}=10.0\text{ V}, I_{DS}=100\text{ mA}^*$
Forward Transconductance	G_M	500	-	mS	$V_{DS}=10.0\text{ V}, I_{DS}=1000\text{ mA (pulsed)}^*$
Input Capacitance	C_{ISS}		50	pF	$V_{DS}=12.0\text{ V}, F=1.0\text{ MHz}^*$
Output Capacitance	C_{OSS}		60	pF	$V_{DS}=12.0\text{ V}, F=1.0\text{ MHz}^*$
Reverse Capacitance	C_{RSS}		12	pF	$V_{DS}=12.0\text{ V}, F=1.0\text{ MHz}^*$
Power Gain	G_P	10	-	dB	$V_{DD}=12.0\text{ V}, I_{DQ}=200\text{ mA}, P_{OUT}=30\text{ W}, F=175\text{ MHz}$
Drain Efficiency	η_D	55	-	%	$V_{DD}=12.0\text{ V}, I_{DQ}=200\text{ mA}, P_{OUT}=30\text{ W}, F=175\text{ MHz}$
Load Mismatch Tolerance	VSWR-T	-	30:1	-	$V_{DD}=12.0\text{ V}, I_{DQ}=200\text{ mA}, P_{OUT}=30\text{ W}, F=175\text{ MHz}$

Typical Optimum Device Impedances

F(MHz)	$Z_{IN}(\Omega)$	$Z_{LOAD}(\Omega)$
30	40 - j40	5.5 + j5.5
100	20 - j30	5.0 + j4.0
175	7.5 - j22	4.6 + j3.5

$V_{DD}=12\text{ V}, I_{DQ}=200\text{ mA}, P_{OUT}=30\text{ W}$

