

### S-Band Radar Pallet

Part number ILP2731M260 is a 50  $\Omega$  matched high power pulsed radar pallet amplifier for S-Band radar systems operating over the instantaneous bandwidth of 2.70-3.10GHz. The pallet amplifier supplies a minimum of 260 watts of peak pulse power under the conditions of 300us pulse width and 10% duty cycle. All units are 100% screened for large signal RF parameters.



#### Silicon LDMOS

- Ultra-high  $f_T$

#### Class AB Operation

- Total Bias Current < 300mA

#### Single Bias Voltage

- Operates with single 32V supply voltage. Gate Bias provided via voltage regulator.

#### Common Source Configuration

#### Gold Metal

- Maximum Reliability

#### Impedance Matched to 50 $\Omega$

- Ease of Use

#### Pallet Carrier

- Nickel Plated Aluminum Carrier

#### Maintained

- 100% RF Screening
- No External Tuning Allowed

#### TYPICAL DATA

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Freq (GHz)	V <sub>dd</sub> (V)	P <sub>in</sub> (W)	IRL (dB)	P <sub>out</sub> Peak (W)	G <sub>p</sub> (dB)	I <sub>D</sub> (A)	Droop (dB)
2.70	32.0	24.50	-15	318	11.14	28.54	-0.45
2.90	32.0	24.50	-20	317	11.13	27.94	-0.47
3.10	32.0	24.50	-13	280	10.58	23.13	-0.37

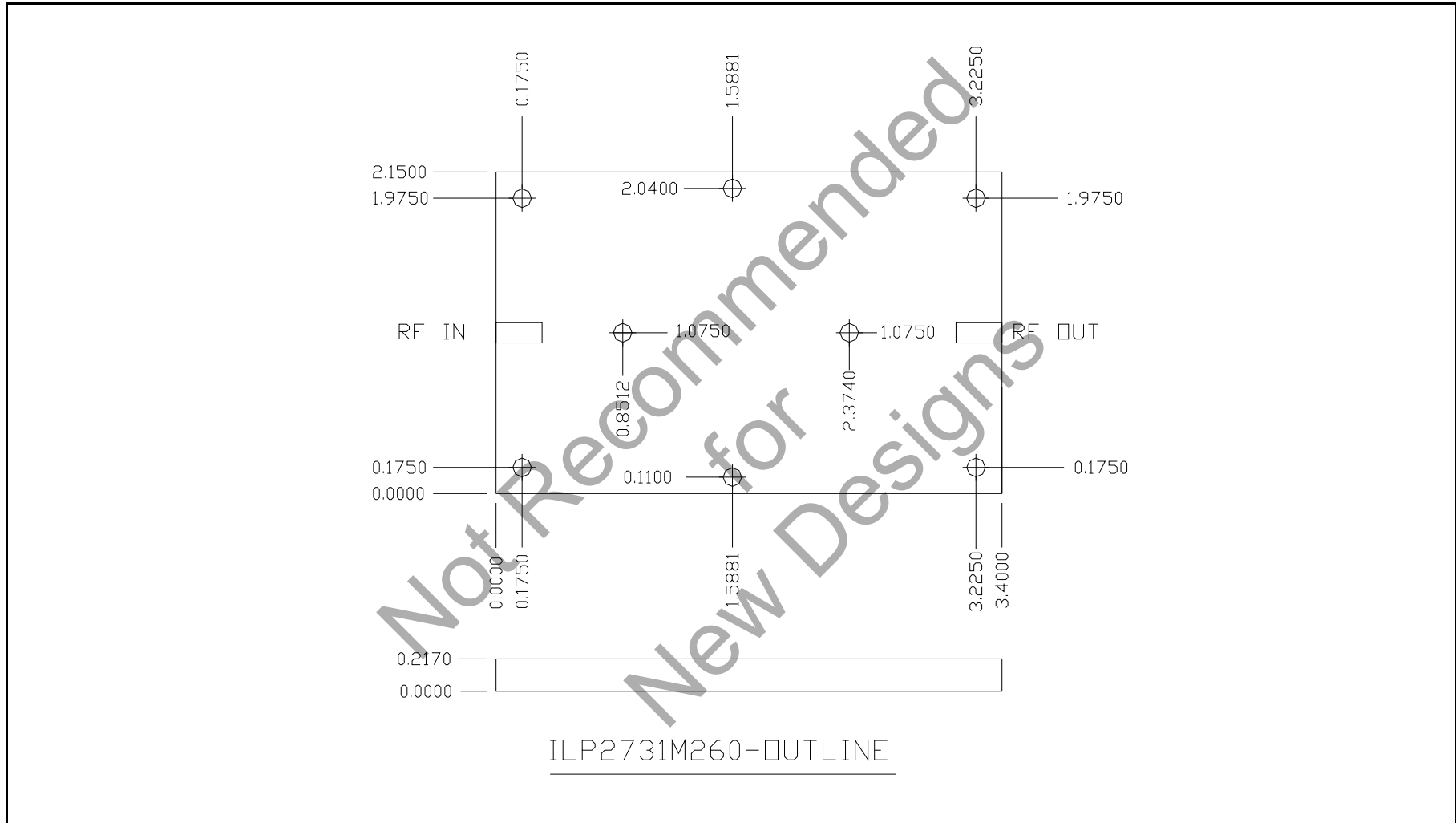
Pulse format = 300 $\mu$ s, 10%

**RF ELECTRICAL CHARACTERISTICS**

Screen	Parameter	Symbol	Min	Max	Units	Test Conditions
100%	Input Return Loss	IRL	9	--	dB	$V_{dd}=32V$ , $P_{IN}=24.50W$ , $I_{dq}=60mA$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Output Power	$P_{OUT}$	260	--	W	$V_{dd}=32V$ , $P_{IN}=24.50W$ , $I_{dq}=60mA$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Power Gain	$G_P$	10.25	--	dB	$V_{dd}=32V$ , $P_{IN}=24.50W$ , $I_{dq}=60mA$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Pulse Amplitude Droop	D	-0.7	--	%	$V_{dd}=32V$ , $P_{IN}=24.50W$ , $I_{dq}=60mA$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Efficiency	$\eta_c$	35	--	%	$V_{dd}=32V$ , $P_{IN}=24.50W$ , $I_{dq}=60mA$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Gain Flatness	OPF	--	1.0	dB	$V_{dd}=32V$ , $P_{IN}=24.50W$ , $I_{dq}=60mA$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Peak Current	$I_d$	--	30	A	$V_{dd}=32V$ , $P_{IN}=24.50W$ , $I_{dq}=60mA$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Delta Insertion Phase	DIP	-30	+30	DEG	$V_{dd}=32V$ , $P_{IN}=24.50W$ , $I_{dq}=60mA$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ .
100%	Stability into VSWR	VSWR-S	--	3:1	--	$V_{dd}=32V$ , $P_{IN}=24.50W$ , $I_{dq}=60mA$ , Pulse = Note 2, $T_F=25\pm5^\circ C$ , $F=F1, F2, F3$ . Rotate 3:1 output VSWR through 300° phase. No oscillatory or pulse breakup characteristics allowed on detected output pulse. All non-harmonically related signals must be at least -65dBsc.
Note 1	F1 = 2.70GHz, F2 = 2.90GHz, F3 = 3.10GHz					
Note 2	Pulse format = 300us, 10%					
Note 3	$T_F$ = Device flange temperature.					
Note 4	Screen 'BD' = parameter qualified By Design.					

Not Recommended for New Designs

**PALLET DIMENSIONAL OUTLINE DRAWING**



**DEFINITIONS**

<b>Data Sheet Status</b>	
Proposed Specification	This data sheet contains proposed specifications.
Preliminary Specification	This data sheet contains specifications based on preliminary measurements and data.
Product Specification	This data sheet contains final product specifications.
<b>Maximum Ratings</b>	
Stress above one or more of the maximum ratings may cause permanent damage to the device. These are maximum ratings only and operation of the device at these or at any other conditions above those given in the characteristics sections of the specification is not implied. Exposure to maximum values for extended periods of time may affect device reliability.	

**WARNING**

<b>Product and environmental safety - toxic materials</b>
This product contains beryllium oxide. The product is entirely safe provided that the BeO base is not damaged. All persons who handle, use or dispose of this product should be aware of its nature and of the necessary safety precautions. After use, dispose of as chemical or special waste according to the regulations applying at the location of the user. It must never be thrown out with general or domestic waste.

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