

5. Thermal characteristics

Table 4. Thermal characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance at Average Power by Infrared Measurement, Active Die Surface-to-Case $T_{\text{base-plate}} = 85^{\circ}\text{C}$, $P_D = 4.4\text{ W}$	$R_{\text{thjc}}(\text{IR})$	10.4	$^{\circ}\text{C/W}$
Thermal Resistance at Average Power by Finite Element Analysis, Junction-to-Case $T_{\text{base-plate}} = 85^{\circ}\text{C}$, $P_D = 4.4\text{ W}$	$R_{\text{thjc}}(\text{FEA})$	15.0	$^{\circ}\text{C/W}$

6. ESD protection characteristics

Table 5. ESD protection characteristics

Test methodology	Class
Human Body Model (per JS-001-2012)	1A ($\geq 250\text{ V}$)
Charged Device Model (per JESD22-C101F)	C3 ($\geq 1000\text{ V}$)

7. Moisture sensitivity level

Table 6. Moisture sensitivity level

Test methodology	Class
Moisture Sensitivity Level (per J-STD-020)	Level 3

8. Electrical characteristics (TA = 25°C unless otherwise noted)

Table 7. DC characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Leakage Current (V _{GS} = -10 V, V _{DS} = 150 V)	I _{DSS}	-	-	1.4	mA
Drain-Source Breakdown Voltage (V _{GS} = -10 V, I _D = 1.4 mA)	V _{(BR)DSS}	150	-	-	V
Gate Threshold Voltage (V _{DS} = 48 V, I _D = 1.4 mA)	V _{GS(th)}	-4.0	-3.3	-1.0	V
Gate Quiescent Voltage (V _{DS} = 48 V, I _D = 20 mA)	V _{GS(Q)}	-	-3.0	-	V

Table 8. RF characteristics (Typical performance – 3700 MHz) ¹

Parameter	Symbol	Min.	Typ.	Max.	Unit
Peak Output Power ²	P _{sat}	40.3	41.1	42.2	dBm
Drain Efficiency ³	η _D	30.0	34.0	40.0	%
Power Gain ³	G _P	14.5	15.7	17.2	dB

¹ Typical performance in Dynax DXG2PH60B-14N production test fixture, test condition: V_{DS} = 48 V, I_{DQ} = 20 mA.

² Test condition: Pulsed CW, Pulse width = 100 μs, Duty cycle = 10 %.

³ Test condition: P_{avg} = P_{sat} - 6 dB, Pulsed CW, Pulse width = 100 μs, Duty cycle = 10 %.

Table 9. Load mismatch

Parameter	Result
VSWR 10:1 at V _{DS} = 48 V, 14 W Pulsed CW output power, Pulse width = 100 μs, Duty cycle = 10%.	No device damage

9. Test information

9.1 Typical application circuit

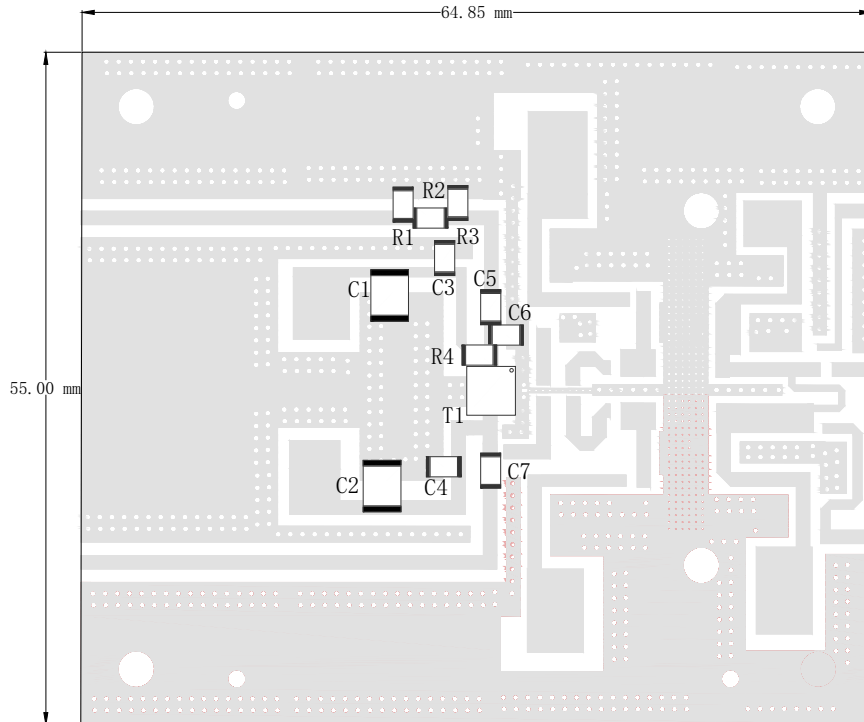


Fig 2. Component layout

Table 10. List of components

S/N	Type	Designator	Description	Value	Vendor
1	Cap	C1,C2	GRM32ER72A225KA	2.2 uF	Murata
2	Cap	C3,C4,C7	ATC600F5R6JT250XT	5.6pF	ATC
3	Cap	C5	ATC600F2R0JT250XT	2.0pF	ATC
4	Cap	C6	ATC600F0R3JT250XT	0.3pF	ATC
5	Res	R1,R3	RC0805FR_07431RL	431Ω	Yageo
6	Res	R2	RC0805FR_0712RL	12Ω	Yageo
7	Res	R4	RC0805FR_0710RL	10Ω	Yageo
8	Transistor	T1	DXG2PH60B-14N	/	Dynax

9.2 Graphic data

9.2.1 Pulsed CW

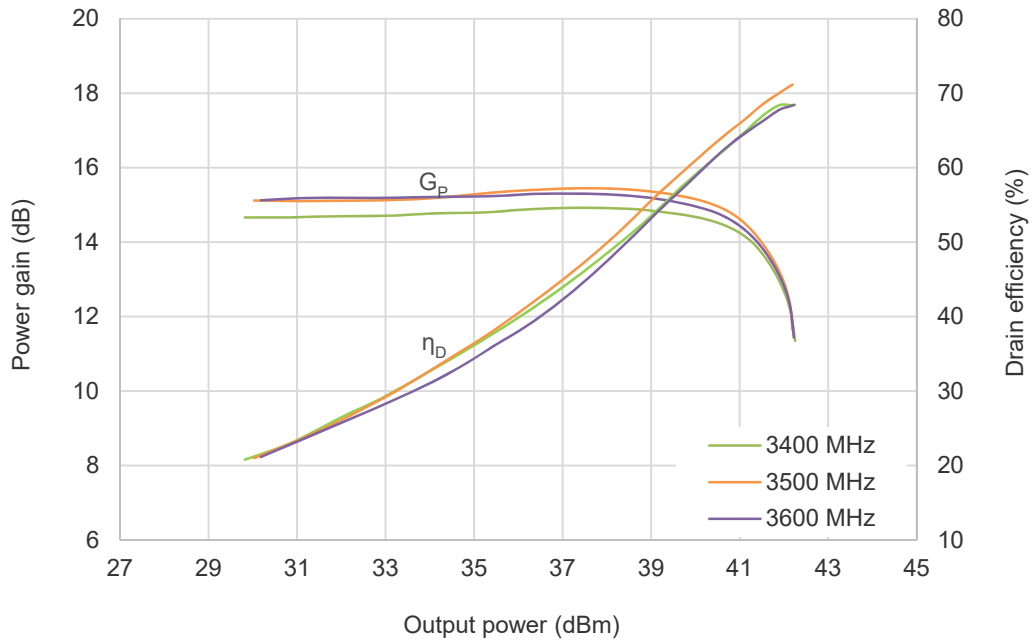


Fig 3. Power gain, Drain efficiency vs. Pulse output power

12. Package outline

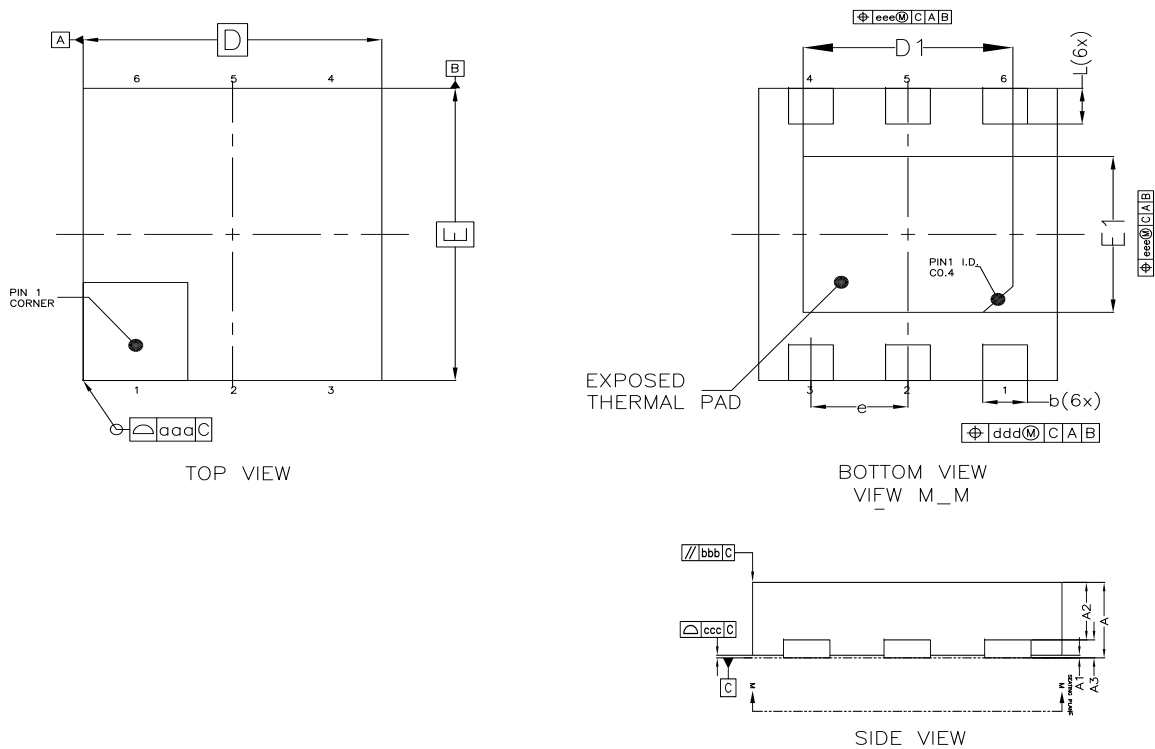


Fig 6. Package outline — DFN 4×4.5mm

Table 12. Package dimensions

DESCRIPTION	DIM	MILLIMETER			
		MIN	NOM	MAX	
TOTAL THICKNESS	A	0.80	0.85	0.90	
STAND OFF	A1	0.00	-----	0.05	
MOLD THICKNESS	A2	0.60	0.65	0.70	
L/F THICKNESS	A3	0.203 REF			
BODY SIZE	X	D	3.95	4.00	4.05
	Y	E	4.45	4.50	4.55
LEAD PITCH	e	1.30 BSC			
LEAD WIDTH	b	0.55	0.60	0.65	
LEAD LENGTH	L	0.50	0.55	0.60	
EP SIZE	D1	2.76	2.81	2.86	
	E1	2.35	2.40	2.45	
Tolerance of form and position					
PACKAGE EDGE TOLERANCE	aaa	0.1			
MOLD FLATNESS	bbb	0.1			
LEAD COPLANARITY	ccc	0.08			
LEAD POSITION OFFSET	ddd	0.1			
EXPOSED PAD OFFSET	eee	0.1			

13. Abbreviations

Table 13. Abbreviations

Acronym	Description
CW	Continuous Waveform
ESD	Electro-Static Discharge
GaN	Gallium Nitride
HEMT	High Electron Mobility Transistor
MTTF	Median Time To Failure
VSWR	Voltage Standing Wave Ratio

14. Legal information

14.1 Datasheet status

Document status	Product Status	Definition
Objective [short] datasheet	Engineering Sample	This document contains data from the objective specification for product development.
Preliminary [short] datasheet	Engineering Sample	This document contains data from the preliminary specification.
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