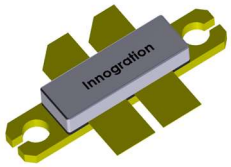
MX1526G LDMOS TRANSISTOR

Document Number: MX1526G
Product Datasheet V1.0

80W, 12.5V High Power RF LDMOS FETs

MX1526G



Description

The MX1526G is a 80-watt capable, highly rugged, unmatched,push pull LDMOS FET, designed for wide-band commercial and industrial applications with frequencies HF to 600MHz.

- Typical Performance (On Innogration fixture with device soldered):

Vgs=2.44V Vds=12.5V Idq=140mA CW								
Freq (MHz)	**Psat (dBm)**	**Psat (W)**	**IDS (A)**	**Pin (dBm)**	**Gain (dB)**	**Eff (%)**	**2nd （dBc）**	**3rd （dBc）**
136	49.86	96.8	10.71	33.38	16.48	72.33	-14.0	-13.0
145	50.38	109.1	11.61	33.10	17.28	75.21	-19.80	-11.30
155	50.57	114.0	11.86	32.96	17.61	76.91	-19.60	-10.00
165	50.43	110.4	11.83	33.16	17.27	74.66	-19.00	-10.00
174	49.87	97.1	10.35	33.32	16.55	75.02	-23.00	-10.70

Features

- High Efficiency and Linear Gain Operations
- Integrated ESD Protection
- Excellent thermal stability, low HCI drift
- Large Positive and Negative Gate/Source Voltage Range for Improved Class C Operation
- Pb-free, RoHS-compliant

Suitable Applications

- 2-30MHz (HF or Short wave communication)
- 30-88MHz (Ground communication)
- 54-88MHz (TV VHF I)
- 88-108MHz (FM)
- 118 -140MHz (Avionics)
- 136-174MHz (Commercial ground communication)
- 160-230MHz (TV VHF III)
- 30-512MHz (Jammer, Ground/Air communication)

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DSS}	+65	Vdc
Gate--Source Voltage	V_{GS}	-10 to +10	Vdc
Operating Voltage	V_{DD}	+28	Vdc
Storage Temperature Range	Tstg	-65 to +150	°C
Case Operating Temperature	T_C	+150	°C
Operating Junction Temperature	T_J	+225	°C

Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case T_C= 85°C, Pout=80W,CW Test	$R_{\theta JC}$	0.29	°C/W

Table 3. ESD Protection Characteristics

Test Methodology	Class
Human Body Model (per JESD22--A114)	Class 2

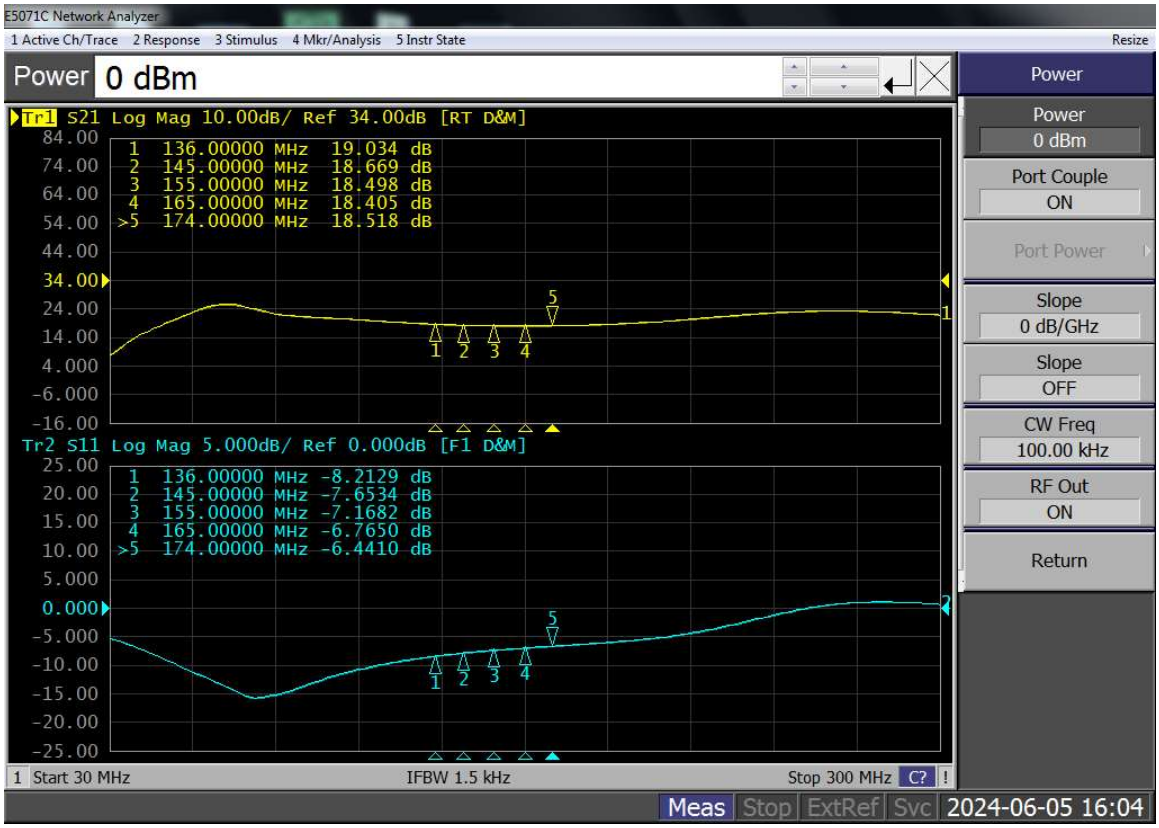
Table 4. Electrical Characteristics (T_A = 25 ℃ unless otherwise noted)

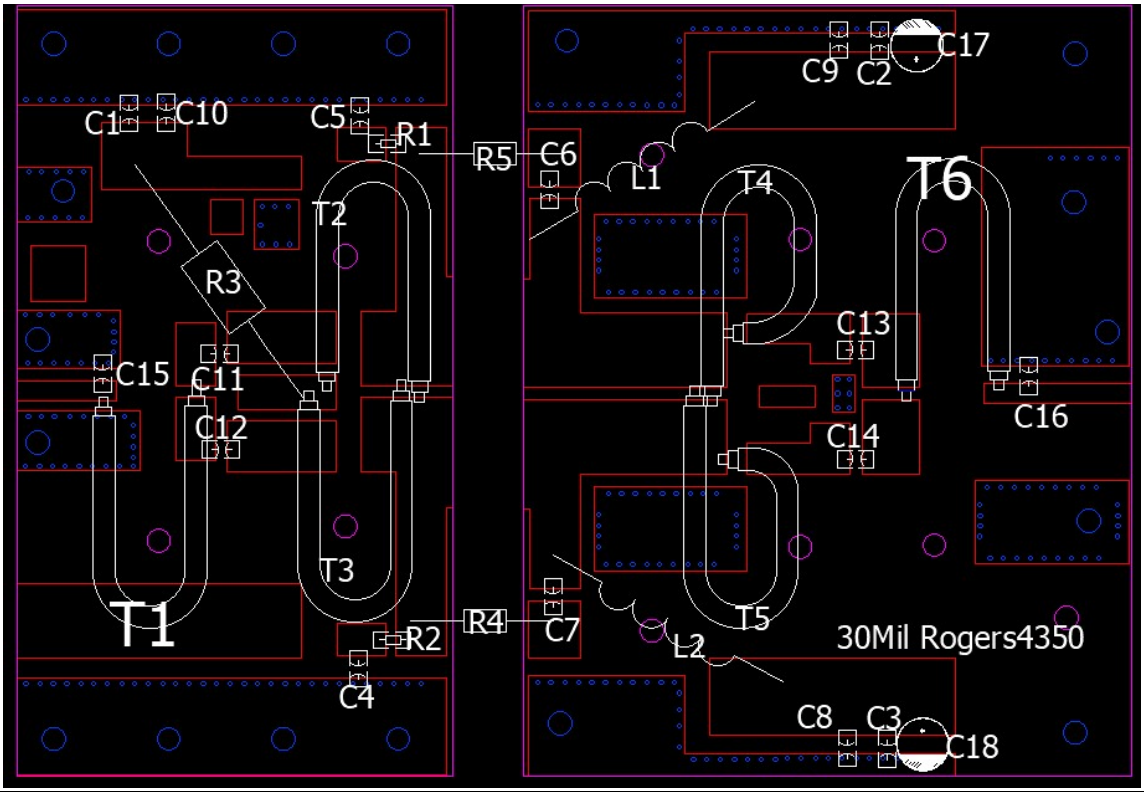
Characteristic	Symbol	Min	Typ	Max	Unit
DC Characteristics (per half section)					
Drain-Source Voltage V_{GS}=0, I_{DS}=1.0mA	$V_{(BR)DSS}$	65			V
Zero Gate Voltage Drain Leakage Current (V_{DS} = 75V, V_{GS} = 0 V)	I_{DSS}	——	——	1	μA
Zero Gate Voltage Drain Leakage Current (V_{DS} = 28 V, V_{GS} = 0 V)	I_{DSS}	——	——	1	μA
Gate--Source Leakage Current (V_{GS} = 10 V, V_{DS} = 0 V)	I_{GSS}	——	——	1	μA
Gate Threshold Voltage (V_{DS} = 12.5V, I_D = 400 μA)	$V_{GS(th)}$	——	2	——	V
Gate Quiescent Voltage (V_{DD} = 12.5 V, I_D = 200 mA, Measured in Functional Test)	$V_{GS(Q)}$	——	2.5	——	V

Load Mismatch (In Innogration Test Fixture, 50 ohm system): V_{DD} = 12.5 Vdc, I_{DQ} = 200 mA, f = 174 MHz

Load open and short, at 80W CW	No Device Degradation

Figure 1： Network analyzer Output S11/S21

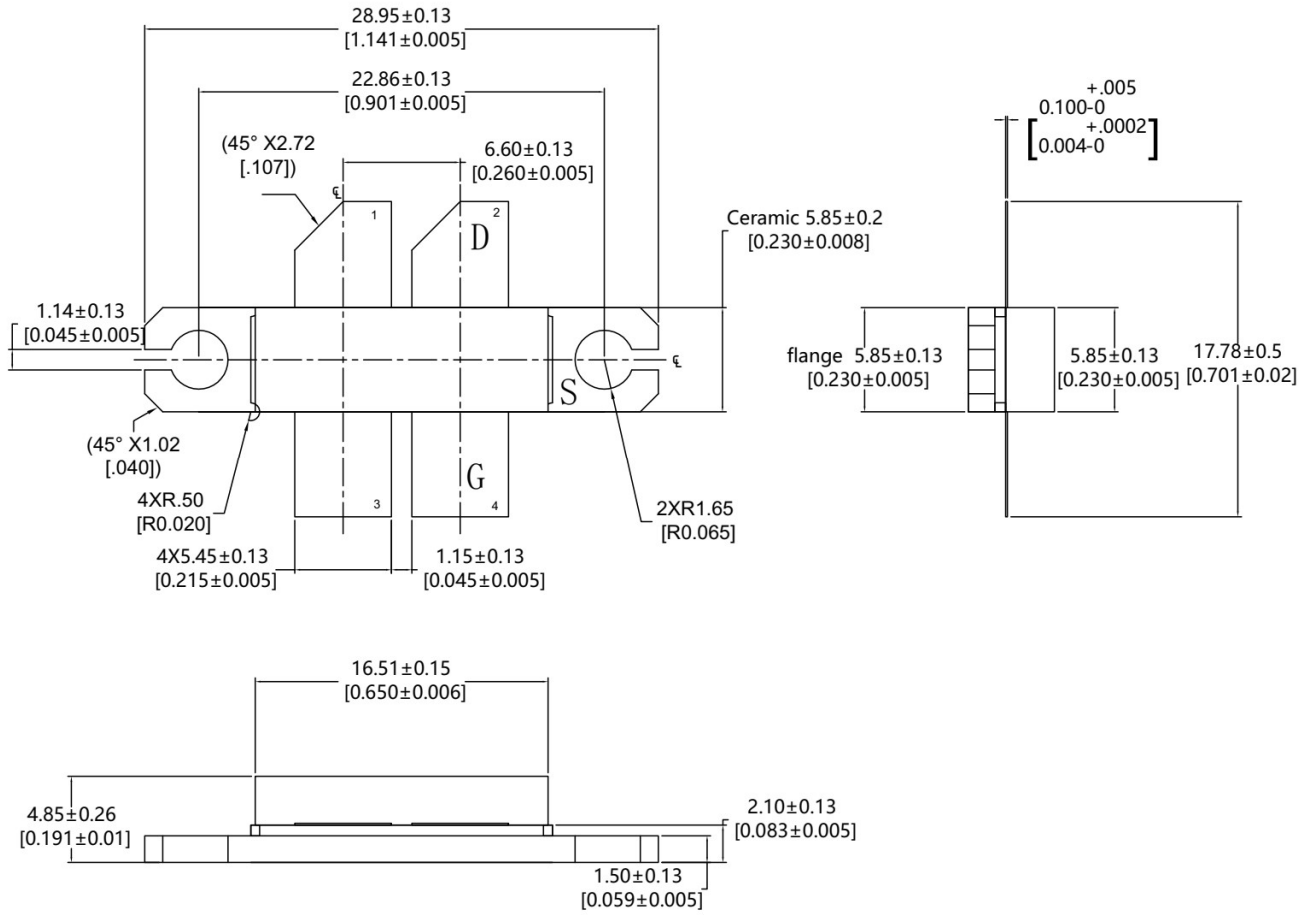




Component	Description	Suggested Manufacturer
C1~C7	10uF	10uF/100V
C8~C10	910pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ101111
C11~C14	470pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ101111
C15	8.2pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ101111
C16	10pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ101111
C17,C18	470uF/63V	Electrolytic Capacitor
R1,R2	10Ω	Chip Resistor
R3~R5	300Ω	Color ring resistance
L1，L2	1.5mm wire ，5mm inner diameter， 4 Turns	DIY
T1,T6	50 ohm，100mm	RFSFBU-086-50
T2,T3	16.7 ohm，100mm	SFF-16.7-1.5
T4,T5	12.5 ohm ，100mm	SFF-12.5-1.5
PCB	30Mil Rogers4350	

Package Outline

Flanged ceramic package; 2 mounting holes; 4 leads



OUTLINE VERSION	REFERENCE			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
PKG-LB/LBB					05/21/2021

Revision history

Table 5. Document revision history

Date	Revision	Datasheet Status
2024/6/5	Rev 1.0	Product Datasheet Creation

Disclaimers