MV1526GR LDMOS TRANSISTOR

Document Number: MV1526GR
Preliminary Datasheet V1.0

70W, 12.5V High Power RF LDMOS FETs

MV1526GR

Description

The MV1526GR is a 70-watt capable，high performance, unmatched LDMOS FET, designed for commercial and industrial applications with frequencies HF to 0.1 GHz.

•Typical 30MHz Performance at different bias

CW, V_{gs}=2.5V,I_{dq}=200mA					
Voltage(V)	**Pin(dBm)**	**Pout(W)**	**Gain(dB)**	**EFF (%)**	**2nd（dB）**
12.5	**36.7**	**84.1**	**12.5**	**64**	**-19**

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)

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}	+24	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, T_J=200°C, DC test	RθJC	0.4	°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					
Drain-Source Voltage V_{GS}=0, I_{DS}=1.0mA	$V_{(BR)DSS}$	65	70		V
Zero Gate Voltage Drain Leakage Current	I_{DSS}	——	——	1	μA

(V_{DS} = 28 V, V_{GS} = 0 V)					
Gate--Source Leakage Current (V_{GS} = 10 V, V_{DS} = 0 V)	I_{GSS}	——	——	1	μA
Gate Threshold Voltage (V_{DS} = 28V, I_D = 600 μA)	$V_{GS(th)}$	——	1.98	——	V
Gate Quiescent Voltage (V_{DD} = 28 V, I_D = 300 mA, Measured in Functional Test)	$V_{GS(Q)}$	——	2.5	——	V
Drain source on state resistance (V_{DS} = 0.1V, V_{GS} = 10 V)	Rds(on)		55		mΩ
Common Source Input Capacitance (V_{GS} = 0V, V_{DS} =28 V, f = 1 MHz)	C_{ISS}		230		pF
Common Source Output Capacitance (V_{GS} = 0V, V_{DS} =28 V, f = 1 MHz)	C_{OSS}		100		pF
Common Source Feedback Capacitance (V_{GS} = 0V, V_{DS} =28 V, f = 1 MHz)	C_{RSS}		4		pF

Load Mismatch (In Innogration Test Fixture, 50 ohm system): V_{DD} = 12.5 Vdc, I_{DQ} = 200 mA, f =100 MHz

VSWR 20:1 at 100W Pulsed CW Output Power	No Device Degradation

Pin definitions

1：Gate 2-4：Drain　　Flange：source for grounding

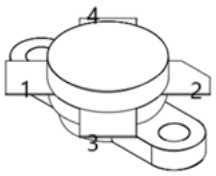
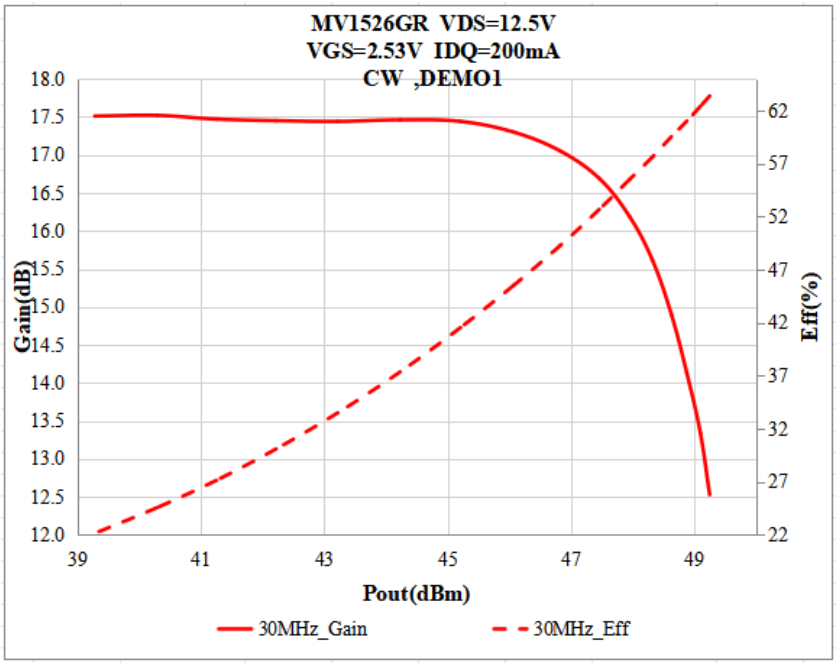
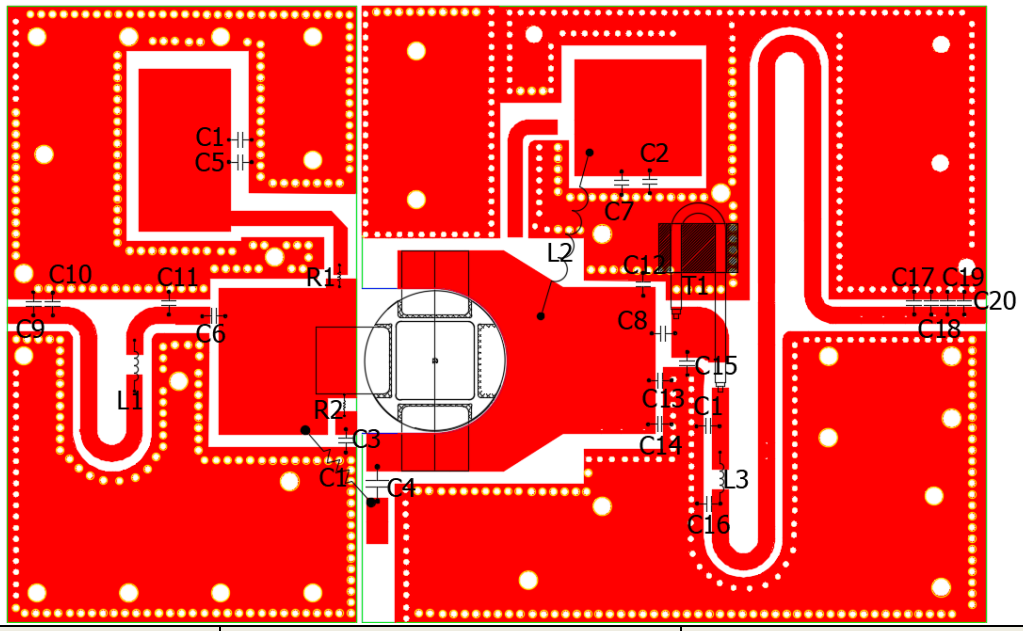


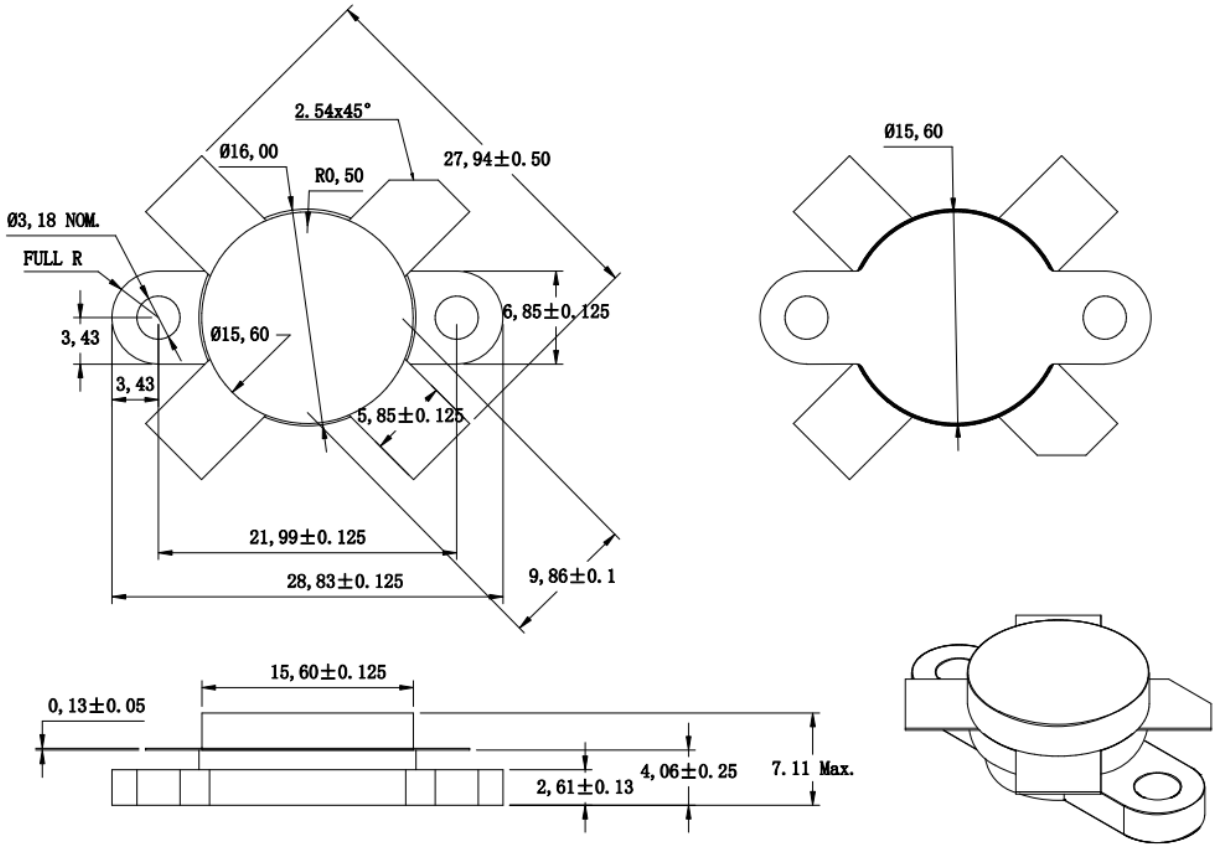
Figure 2： Power gain, Eff as function of Pout:





Component	Description	Suggestion
C1~C3	10uF 1210	Ceramic multilayer capacitor
C4	1000pF MQ101111	
C5,C6	10nF 1812	Ceramic multilayer capacitor
C7,C8	2.2uF 1812	Ceramic multilayer capacitor
C9,C11	240pF MQ301111	
C10	360pF MQ301111	
C12~C20	82pF MQ301111	
R1	10Ω	Chip Resistor
R2	51Ω	Chip Resistor
R3	220Ω	Pulg-in Resistor
L1	ϕ 0.8mm Inner diameter 3.5mm 6 turns	DIY
L2	ϕ 0.8mm Inner diameter 3.5mm 21 turns	DIY
L3	ϕ 0.8mm Inner diameter 3.5mm 4 turns	DIY
T1	25ohm 70mm	RFSFBU-086-25 BN-61-202
PCB	30mil Rogers 4350B	

Package Outline



Revision history

Table 5. Document revision history

Date	Revision	Datasheet Status
2025/7/29	Rev 1.0	Preliminary Datasheet Creation

Application data based on HL-25-26

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