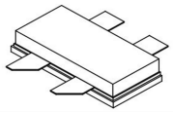
MK0918GS LDMOS TRANSISTOR

Document Number: MK0918GS
Product Datasheet V1.0

180W, P band High Power RF LDMOS FETs

MK0918GS



Description

The MK0918GS is a 180-watt,both input and output matched, high ruggedness，push pull LDMOS FETs, designed for P band and UHF application within 0.5 to 1.2GHz.

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

MK0918GS^{V0} VGS=2.40V VDS=28V IDQ=200mA CW								
Freq (MHz)	**Psat (dBm)**	**Psat (W)**	**IDS (A)**	**Pin (dBm)**	**Gain (dB)**	**Eff (%)**	**2nd （dBc）**	**3rd （dBc）**
500	52.75	188.4	11.26	40.50	12.25	59.75	-21.40	-27.50
600	53.02	200.4	11.30	39.00	14.02	63.35	-18.40	-57.30
700	52.14	163.7	9.14	41.10	11.04	63.96	-25.30	-48.50
800	52.34	171.4	9.98	41.00	11.34	61.34	-44.70	-58.00
900	52.83	191.9	11.61	41.10	11.73	59.02	-67.00	-51.70
1000	52.96	197.7	12.10	41.70	11.26	58.35	-51.40	-41.00
1100	53.06	202.3	11.32	41.70	11.36	63.83	-51.50	-44.00
1200	51.90	154.9	9.11	41.40	10.50	60.72	-51.70	-55.80

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

- P band pulse or CW amplifier
- UHF band pulsed amplifier
- Test measurement applications

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}	+32	Vdc
Storage Temperature Range	T_{stg}	-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 Tcase=25°C; CW	$R_{\theta JC}$	0.35	°C/W

Table 3. ESD Protection Characteristics

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

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

Characteristic	Symbol	Min	Typ	Max	Unit
DC Characteristics					
Zero Gate Voltage Drain Leakage Current (V_{DS} = 65V, V_{GS} = 0 V)	I_{DSS}			100	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} = 28V, I_D = 450 μA)	$V_{GS(th)}$		1.9		V
Gate Quiescent Voltage (V_{DD} = 28 V, I_D = 1.2A, Measured in Functional Test)	$V_{GS(Q)}$		2.7		V

Load Mismatch (In Innogration Test Fixture, 50 ohm system): V_{DD} = 28Vdc, I_{DQ} = 100 mA, f = 1000 MHz

VSWR 5:1 at 180W pulse CW Output Power	No Device Degradation

TYPICAL CHARACTERISTICS

Figure 2. Test Circuit Component Layout

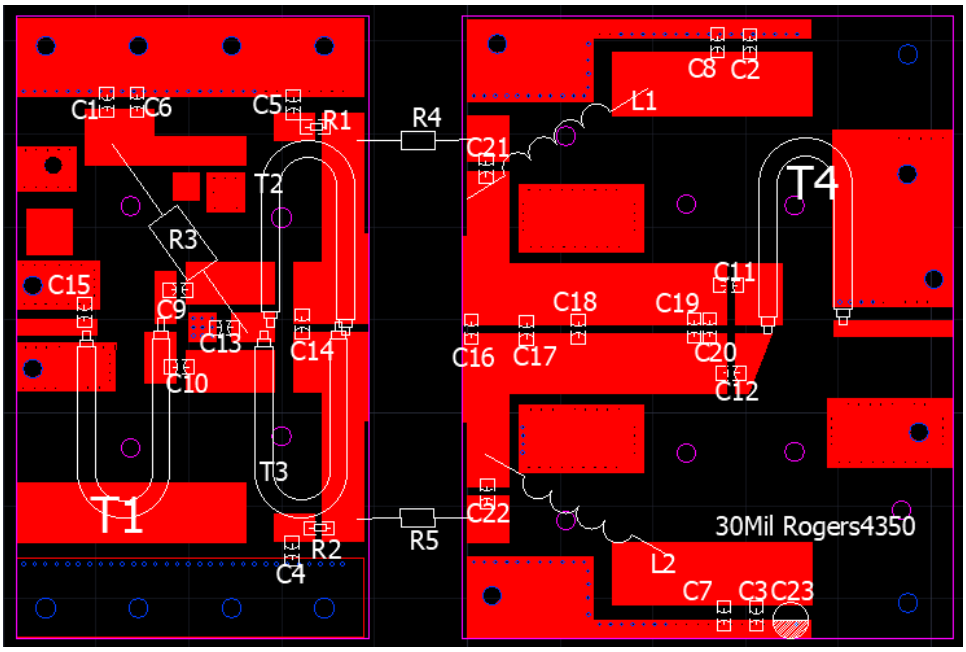
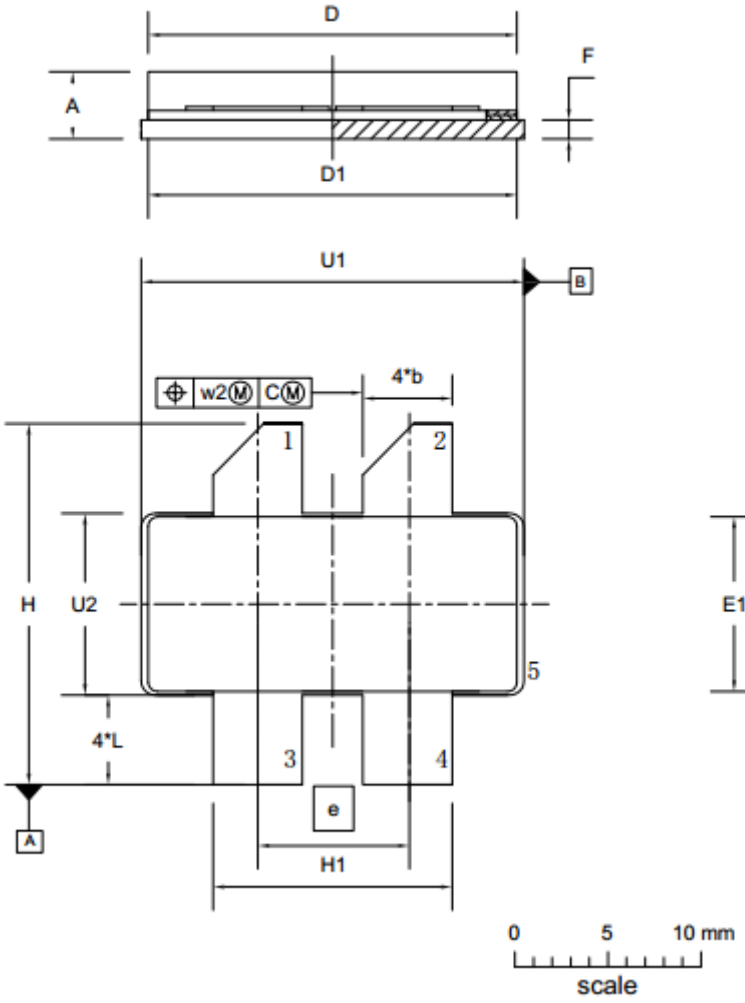


Table 5. Test Circuit Component Designations and Values

Component	Description	Suggested Manufacturer
C1~C5,C13	10uF/200V-1210	Ceramic multilayer capacitor
C6~C8	470pF	
C9,C10	27pF	
C11,C12	33pF	
C14	1.8pF	
C15	0.5pF	
C16	9.1pF	
C17	1pF	
C18	1.2pF	
C19	0.8pF	
C20	3.9pF	
C21,C22	1000pF	
R1,R2	10Ω/2512	Chip Resistor
R3	300Ω	color ring resistor
R4,R5	470Ω	color ring resistor
T1	50 ohm-30mm	RFSFBU-086-50
T2,T3	16.7 ohm-30mm	SFF-16.7-1.5
T4	35ohm-45mm	SFF-35-3
L1,L2	1.5mm wire ， 5mm inner diameter， 1Turns	DIY

MK0918GS LDMOS TRANSISTOR

Earless Flanged Ceramic Package; 4 leads



Drain		Gate		Source
1	2	3	4	5

UNIT	A	b	c	D	D_1	e	E	E_1	F	H	H1	L	Q	U_1	U_2	W_1	W_2
mm	4.72 3.43	4.67 4.93	0.15 0.08	20.02 19.61	19.96 19.66	7.90	9.50 9.30	9.53 9.25	1.14 0.89	19.94 18.92	12.98 12.73	5.33 4.32	1.70 1.45	20.70 20.45	9.91 9.65	0.25	0.51
inches	0.186 0.135	0.194 0.184	0.006 0.003	0.788 0.772	0.786 0.774	0.311	0.374 0.366	0.375 0.364	0.045 0.035	0.785 0.745	0.511 0.501	0.210 0.170	0.067 0.057	0.815 0.805	0.390 0.380	0.01	0.02

OUTLINE VERSION	REFERENCE			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
PKG-B4					03/12/2013

Revision history

Table 5. Document revision history

Date	Revision	Datasheet Status
2026/4/15	Rev 1.0	Product Datasheet

Application data based on TC-26-12

Disclaimers

Specifications are subject to change without notice. Innogration believes the information contained within this data sheet to be accurate and reliable. However, no responsibility is assumed by Innogration for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Innogration . Innogration makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose."Typical" parameters are the average values expected by Innogration in large quantities and are provided for information purposes only. These values can and do vary in different applications and actual performance can vary over time. All operating parameters should be validated by customer's technical experts for each application. Innogration products are not designed, intended or authorized for use as components in applications intended for surgical implant into the body or to support or sustain life, in applications in which the failure of the Innogration product could result in personal injury or death or in applications for planning, construction, maintenance or direct operation of a nuclear facility. For any concerns or questions related to terms or conditions, pls check with Innogration and authorized distributors