

MK011K1VPXF LDMOS TRANSISTOR

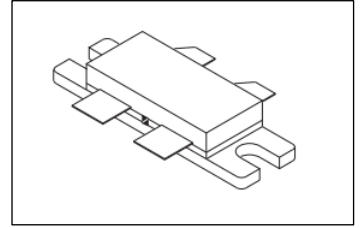
Preliminary Datasheet V1.0

400W, HF-0.2GHz 28V High Power RF LDMOS

Description

The MK011K1VPXF is a 400W Push Pull 50V LDMOS, unmatched for any applications within HF-0.2GHz. It supports CW, and pulsed and any modulated signal at either saturated or linear application.

It can marginally be the drop-in replacement of its equivalent 400W VDMOS like D1029UK/D1030UK with higher efficiency, improved thermal performance and stability.



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

- 30-88MHz (Ground communication)
- 54-88MHz (TV VHF I)
- 88-108MHz (FM)
- 160-230MHz (TV VHF III)
- 136-174MHz (Commercial ground communication)
- Laser Exciter
- Synchrotron
- MRI
- Plasma generator
- Weather Radar

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DS}	+135	Vdc
Gate--Source Voltage	V_{GS}	-10 to +10	Vdc
Operating Voltage	V_{DD}	+55	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 $T_C = 85^{\circ}\text{C}$, $T_J = 200^{\circ}\text{C}$, DC test	$R_{\theta JC}$	TBD	°C/W

Table 3. ESD Protection Characteristics

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

Table 4. Electrical Characteristics ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
----------------	--------	-----	-----	-----	------

DC Characteristics (per half section)

Drain-Source Voltage $V_{GS}=0$, $I_{DS}=1.0\text{Ma}$	$V_{(BR)DS}$		135		V
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 75\text{V}$, $V_{GS} = 0\text{V}$)	I_{DSS}	—	—	1	μA
Zero Gate Voltage Drain Leakage Current	I_{DSS}	—	—	1	μA

MK011K1VPXF LDMOS TRANSISTOR

Preliminary Datasheet V1.0

($V_{DS} = 50\text{ V}$, $V_{GS} = 0\text{ V}$)					
Gate--Source Leakage Current ($V_{GS} = 10\text{ V}$, $V_{DS} = 0\text{ V}$)	I_{GSS}	——	——	1	μA
Gate Threshold Voltage ($V_{DS} = 50\text{ V}$, $I_D = 600\text{ }\mu\text{A}$)	$V_{GS(th)}$	——	2.65	——	V
Gate Quiescent Voltage ($V_{DD} = 50\text{ V}$, $I_D = 300\text{ mA}$, Measured in Functional Test)	$V_{GS(Q)}$	——	3.44	——	V
Drain source on state resistance ($V_{ds}=0.1\text{V}$, $V_{gs}=10\text{V}$)	$R_{ds(on)}$		140		$\text{m}\Omega$
Common Source Input Capacitance ($V_{GS} = 0\text{ V}$, $V_{DS} = 50\text{ V}$, $f = 1\text{ MHz}$)	C_{ISS}		590		pF
Common Source Output Capacitance ($V_{GS} = 0\text{ V}$, $V_{DS} = 50\text{ V}$, $f = 1\text{ MHz}$)	C_{OSS}		145		pF
Common Source Feedback Capacitance ($V_{GS} = 0\text{ V}$, $V_{DS} = 50\text{ V}$, $f = 1\text{ MHz}$)	C_{RSS}		3.4		pF

Load Mismatch (In Innogration Test Fixture, 50 ohm system): $V_{DD} = 50\text{ Vdc}$, $I_{DQ} = 300\text{ mA}$, $f = 200\text{ MHz}$, pulse width:100us, duty cycle:10%

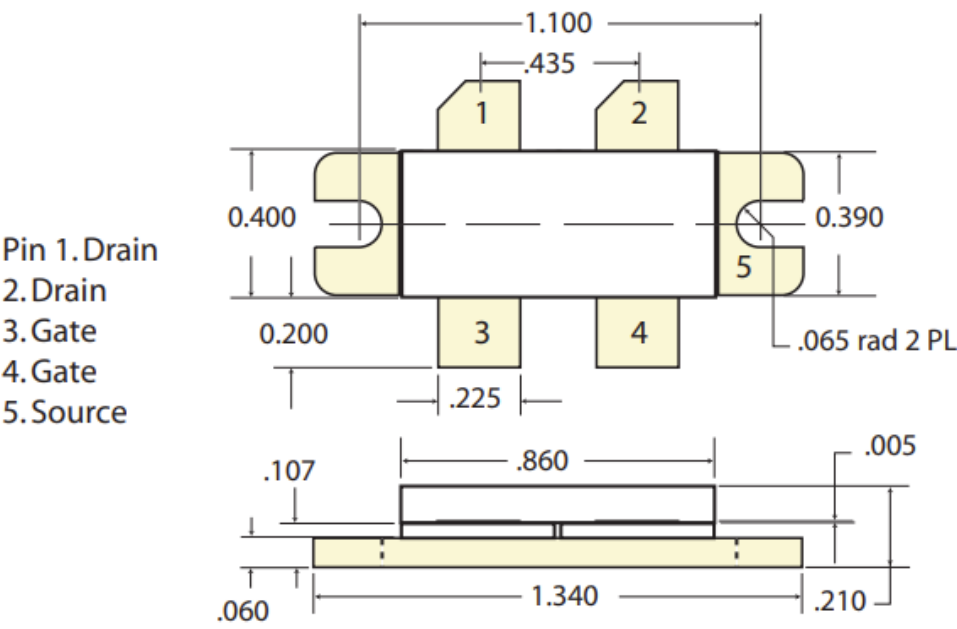
Load 10:1 All phase angles, at P3dB Pulsed CW Output Power	No Device Degradation
--	-----------------------

MK011K1VPXF LDMOS TRANSISTOR

Preliminary Datasheet V1.0

Package Outline

Flanged ceramic package;



Package Dimensions (inches)
All Dimensions are $\pm .005$

Revision history

Table 5. Document revision history

Date	Revision	Datasheet Status
2025/12/25	Rev 1.0	Preliminary datasheet

Application data based on

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

Copyright © by Innogration (Suzhou) Co.,Ltd.