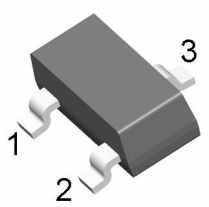
广东协铖微电子科技有限公司

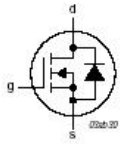
N-Channel Enhancement-Mode MOSFET 结型场效应管 XCK7002

DESCRIPTION & FEATURES 概述及特点

Low on-resistance. 低导通阻抗
Fast switching speed. 快速开关特性
Low-voltage drive.低启动电压
Easily designed drive circuits.更便于设计驱动电路

SOT-23





PIN ASSIGNMENT 引脚说明

PIN NAME 管脚符号	PIN NUMBER 引脚序号 SOT-23	FUNCTION 功能
G	1	Gate
S	2	Source
D	3	Drain

MAXIMUM RATINGS(T_a=25℃) 最大额定值

CHARACTERISTIC 特性参数	Symbol 符号	Rating 额定值	Unit 单位
Drain-Source Voltage 漏极一源极电压	V_{DSS}	60	Vdc
Gate-Source Voltage 栅极-源极电压	V_{GSS}	±20	Vdc
Drain Current—Continuous 漏极电流-连续	I_D	115	mAdc
Peak Drain Current 峰值漏极电流	I_{DM}	800	mAdc

THERMAL CHARACTERISTICS 热特性

CHARACTERISTIC 特性参数	Symbol 符号	Max 最大值	Unit 单位
Total Device Dissipation FR-5 Board(1) T_A=25℃	PD	225	mW
Total Device Dissipation Alumina Substrate,(2) T_A=25℃ 总耗散功率 氧化铝衬底	P_D	300	mW
Junction and Storage Temperature结温和储存温度	T_J, T_{stg}	150, -55 to +150	℃

1. FR-5=1.0×0.75×0.062in, printed-circuit board.
2. Alumina=0.4×0.3×0.024in, 99.5%alumina

DEVICE MARKING 打标

XCK7002=7002

ELECTRICAL CHARACTERISTICS 电特性

(T_A=25℃ unless otherwise noted 如无特殊说明，温度为 25℃)

Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	TYPE 典型值	Max 最大值	Unit 单位
Drain-Source Breakdown Voltage 漏极一源极击穿电压	$V_{(BR)DSS}$	V_{GS}=0V, I_D =10μA	60	—	—	V
Zero Gate Voltage Drain Current 零栅电压漏极电流	I_{DSS}	V_{DS}=60V, V_{GS}=0V	—	—	1.0	μA
Gate-Body Leakage Current, Forward 正向栅泄漏电流	I_{GSSF}	V_{GS}=20V, V_{DS}=0V	—	—	100	nA
Gate-Body Leakage Current, Reverse 反向栅泄漏电流	I_{GSSR}	V_{GS}=-20V, V_{DS}=0V	—	—	-100	nA
Gate Threshold Voltage 开启电压	$V_{GS(th)}$	V_{DS}= V_{GS} ,I_D =250μA	1.0	—	2.5	V
On-State Drain Current 导通漏极电流	$I_{D(on)}$	V_{DS}≥2$V_{DS(on)}$,V_{GS}=10V	500	—	—	mA
Static Drain-Source On-State Voltage 漏源导通电压	$V_{DS(on)}$	V_{GS}=10V, I_D =500mA V_{GS}=5.0V, I_D =50mA	—	—	3.75 0.375	V
Static Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	V_{GS}=10V, I_D =500mA V_{GS}=5.0V, I_D =50mA	—	—	7.5 7.5	Ohm
Forward Transconductance 跨导	g_{fs}	V_{DS}≥2$V_{DS(on)}$, I_D=200mA	80	—	—	mS
Diode Forward On-Voltage	V_{FSD}	V_{GS}=0V, I_S =115mA	—	—	-1.5	V

正向电压						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=25V,I_D=500mA, R_G=25Ω,R_L=50Ω, V_{gen}=10V	—	—	20	ns
Turn-Off Delay Time	$t_{d(off)}$		—	—	40	ns
Input Capacitance 输入电容	C_{iss}	V_{DS}=25V, V_{GS}=0V, f=1MHz	—	—	50	pF
Output Capacitance 输出电容	C_{oss}	V_{DS}=25V, V_{GS}=0V, f=1MHz	—	—	25	pF
Reverse Transfer Capacitance 反馈电容	C_{rss}	V_{DS}=25V, V_{GS}=0V, f=1MHz	—	—	5.0	pF