

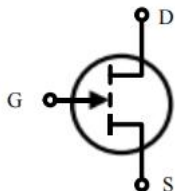
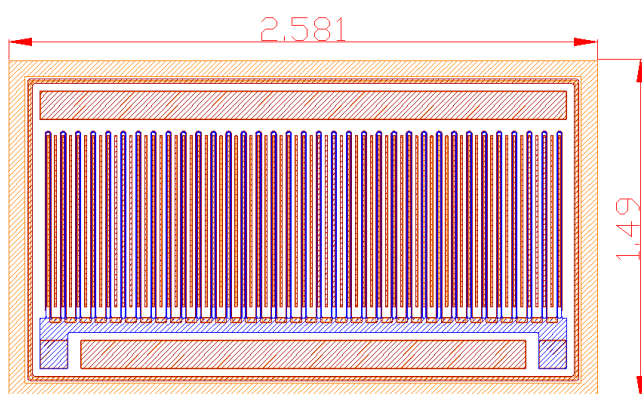
## GJ500D225NA01

### 1.一般说明/General description

500V 蓝宝石衬底 GaN 耗尽型功率晶体管裸芯片

500V GaN-on-Al<sub>2</sub>O<sub>3</sub> Depletion-mode Power Transistor Bare Die

### 2.芯片示意图和尺寸/Chip drawing



物理特征/Physical Characteristics		单位 Unit
晶圆尺寸 Wafer Size	4/6	inches
晶圆厚度 Wafer Thickness	150	um
芯粒尺寸 Die Size (with L/S)	2.581×1.49	mm <sup>2</sup>
栅极焊盘尺寸 Gate Pad Size	120×120	um <sup>2</sup>
源极焊盘尺寸 Source Pad Size	1950×120	um <sup>2</sup>
漏极焊盘尺寸 Drain Pad Size	2300×120	um <sup>2</sup>
切割道宽度 Scribe Street Width	50	um
金属厚度 Metal Thickness	2.5	um
顶层金属 Top Metallization	Al	
背面材料 Backside	Al <sub>2</sub> O <sub>3</sub>	

### 3.最大额定值/ Maximum ratings

at T<sub>J</sub> = 25 °C unless otherwise specified

Exceeding the maximum ratings may destroy the device

Table 1 Maximum ratings

参 数/Parameter	符号 Symbol	值/Values	单位 Unit	备注：测试条件 Note/Test Condition
Drain source voltage	V <sub>DS, min</sub>	500	V	V <sub>GS</sub> = -28V; T <sub>J</sub> = -55 °C to 150 °C
Continuous current, drain source	I <sub>D</sub>	18	A	T <sub>c</sub> = 25 °C
Pulsed current, drain source	I <sub>D, pulse</sub>	25	A	T <sub>c</sub> = 25 °C; V <sub>GS</sub> = 0 V; t <sub>PULSE</sub> = 10 μs

Gate source voltage, continuous	$V_{GS}$	- 30 to 0	V	$T_J = -55\text{ }^{\circ}\text{C}$ to $150\text{ }^{\circ}\text{C}$
Operating temperature	$T_J$	-55 to +150	$^{\circ}\text{C}$	
Storage temperature	$T_{stg}$	-55 to +150	$^{\circ}\text{C}$	

#### 4. 电性参数/ Electric characteristics

at  $T_J = 25\text{ }^{\circ}\text{C}$ , unless specified otherwise

**Table 2 Static characteristics**

参 数/Parameter	符号 Symbol	值/Values			单位 Unit	备注：测试条件 Note/Test Condition
		最小值 Min.	典型值 Typ.	最大值 Max.		
Gate threshold voltage	$V_{GS(th)}$	-24	-21	-16	V	$I_D = 100\mu\text{A}$ ; $V_{DS} = 10\text{V}$ ; $T_J = 25\text{ }^{\circ}\text{C}$
Drain-source leakage current	$I_{DSS}$	-	0.01	1	$\mu\text{A}$	$V_{DS} = 500\text{ V}$ ; $V_{GS} = -28\text{ V}$ ; $T_J = 25\text{ }^{\circ}\text{C}$
Gate-source leakage current	$I_{GSS}$	-	0.005	-	$\mu\text{A}$	$V_{GS} = -28\text{ V}$ ; $T_J = 25\text{ }^{\circ}\text{C}$
Drain-source on-state resistance	$R_{DS(on)}$	-	0.225	0.24	$\Omega$	$V_{GS} = 0\text{V}$ ; $I_D = 1\text{A}$ ; $T_J = 25\text{ }^{\circ}\text{C}$

#### 5. 特点/Features

Depletion mode transistor-Normally off power switch  
 Ultra high switching frequency  
 No reverse-recovery charge  
 Low gate charge, low output charge  
 Qualified for industrial applications according to JEDEC Standards  
 ESD safeguard  
 RoHS, Pb-free, REACH-compliant

#### 6. 应用/Applications

DCM/BCM PFC  
 AHB/QR Flyback/ACF DCDC converter  
 LED driver  
 Fast battery charger  
 Standard adaptor

## 7.修订历史记录/Revision history

自上次修订以来的主要变化/Major changes since the last revision

修订/Revision	日期/Date	变更说明/Description of changes
A00	2023-07-15	A00 版：新建立/A00: version update