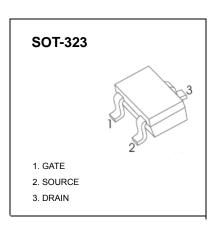


# **SOT-323 Plastic-Encapsulate MOSFETS**

## WNM2021 N-Channel MOSFET

V <sub>(BR)DSS</sub>	R <sub>DS(on)</sub> MAX	I <sub>D</sub>
20 V———	58mΩ@4.5V	0.04
	86mΩ@2.5V	—— 2.3A



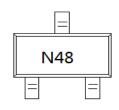
#### **FEATURE**

• TrenchFET Power MOSFET

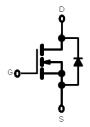
#### **APPLICATION**

- Load Switch for Portable Devices
- DC/DC Converter

### **MARKING**



### **Equivalent Circuit**



## Maximum ratings (T<sub>a</sub>=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit	
Drain-Source Voltage	V <sub>DS</sub>	20	- V	
Gate-Source Voltage	V <sub>GS</sub>	±10		
Continuous Drain Current	I <sub>D</sub>	2.3	Α	
Continuous Source-Drain Current(Diode Conduction)	Is	0.6		
Power Dissipation	P <sub>D</sub>	0.2	W	
Thermal Resistance from Junction to Ambient (t≤5s)	R <sub>0JA</sub>	625	°C/W	
Operating Junction	TJ	150	_ ℃	
Storage Temperature	T <sub>STG</sub>	-55 ~+150		

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# **MOSFET ELECTRICAL CHARACTERISTICS**

## T<sub>a</sub>=25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min	Тур	Max	Unit	
Static Characteristics	•	1		ı	ı		
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =10µA	20			V	
Gate-threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =50μA	0.65	0.95	1.2	7 V	
Gate-body leakage	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±100	nA	
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	μA	
Drain-source on-resistance <sup>1</sup>	RDS(on)	V <sub>GS</sub> =4.5V, I <sub>D</sub> =2A			0.058		
		V <sub>G</sub> S =2.5V, I <sub>D</sub> =1A			0.086	Ω	
Forward transconductance <sup>1</sup>	<b>g</b> fs	V <sub>DS</sub> =5V, I <sub>D</sub> =2.3A		8		S	
Diode forward voltage	V <sub>SD</sub>	I <sub>S</sub> =0.94A,V <sub>GS</sub> =0V		0.76	1.2	V	
Dynamic Characteristics				•			
Total gate charge	Qg	V <sub>DS</sub> =10V,V <sub>GS</sub> =4.5V,I <sub>D</sub> =3.6A		4.0	10	nC	
Gate-source charge	Q <sub>gs</sub>			0.65			
Gate-drain charge	$Q_{gd}$			1.5			
Input capacitance <sup>2</sup>	C <sub>iss</sub>			300		pF	
Output capacitance 2	C <sub>oss</sub>	V <sub>DS</sub> =10V,V <sub>GS</sub> =0V,f=1MHz		120			
Reverse transfer capacitance <sup>2</sup>	C <sub>rss</sub>			80			
Switching Characteristics <sup>2</sup>							
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> =10V,		7	15	ns	
Rise time	tr			55	80		
Turn-off delay time	td(off)	R <sub>L</sub> =5.5Ω, I <sub>D</sub> ≈2.3A, V <sub>GEN</sub> =4.5V,Rg=6Ω		16	60		
Fall time	tf	V <sub>GEN</sub> -4.5V,Ry-012		10	25		

#### Notes:

- 1. Pulse Test : Pulse width≤300µs, duty cycle ≤2%.
- 2. These parameters have no way to verify.

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