N-Channel MOSFET

V$_{(BR)DSS}$	R$_{DS(on)}$MAX	I$_D$
20 V	58mΩ@4.5V	2.3A
	86mΩ@2.5V	

SOT-323

1. GATE
2. SOURCE
3. DRAIN
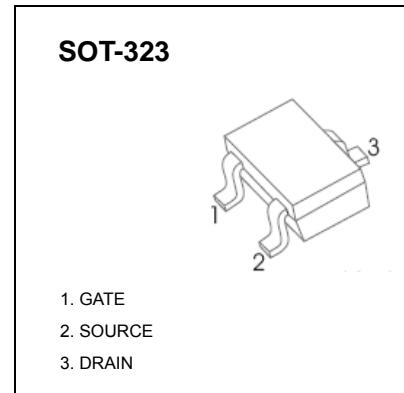
FEATURE

● TrenchFET Power MOSFET

APPLICATION

● Load Switch for Portable Devices
● DC/DC Converter

MARKING

N48
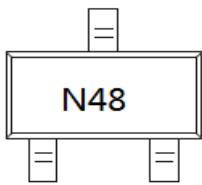
Equivalent Circuit
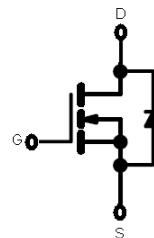
Maximum ratings (T$_a$=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V$_{DS}$	20	V
Gate-Source Voltage	V$_{GS}$	±10	
Continuous Drain Current	I$_D$	2.3	A
Continuous Source-Drain Current(Diode Conduction)	I$_S$	0.6	
Power Dissipation	P$_D$	0.2	W
Thermal Resistance from Junction to Ambient (t≤5s)	R$_{\theta JA}$	625	℃/W
Operating Junction	T$_J$	150	℃
Storage Temperature	T$_{STG}$	-55 ~+150	

T$_a$=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V$_{(BR)DSS}$	V$_{GS}$ = 0V, I$_D$ =10μA	20			V
Gate-threshold voltage	V$_{GS(th)}$	V$_{DS}$ =V$_{GS}$, I$_D$ =50μA	0.65	0.95	1.2	
Gate-body leakage	I$_{GSS}$	V$_{DS}$ =0V, V$_{GS}$ =±8V			±100	nA
Zero gate voltage drain current	I$_{DSS}$	V$_{DS}$ =20V, V$_{GS}$ =0V			1	μA
Drain-source on-resistance[1]	R$_{DS(on)}$	V$_{GS}$ =4.5V, I$_D$ =2A			0.058	Ω
		V$_{GS}$ =2.5V, I$_D$ =1A			0.086	
Forward transconductance[1]	g$_{fs}$	V$_{DS}$ =5V, I$_D$ =2.3A		8		S
Diode forward voltage	V$_{SD}$	I$_S$=0.94A,V$_{GS}$=0V		0.76	1.2	V
Dynamic Characteristics						
Total gate charge	Q$_g$	V$_{DS}$ =10V,V$_{GS}$ =4.5V,I$_D$ =3.6A		4.0	10	nC
Gate-source charge	Q$_{gs}$			0.65		
Gate-drain charge	Q$_{gd}$			1.5		
Input capacitance [2]	C$_{iss}$	V$_{DS}$ =10V,V$_{GS}$ =0V,f=1MHz		300		pF
Output capacitance [2]	C$_{oss}$			120		
Reverse transfer capacitance[2]	C$_{rss}$			80		
Switching Characteristics[2]						
Turn-on delay time	t$_{d(on)}$	V$_{DD}$=10V, R$_L$=5.5Ω, I$_D$ ≈2.3A, V$_{GEN}$=4.5V,Rg=6Ω		7	15	ns
Rise time	t$_r$			55	80	
Turn-off delay time	t$_{d(off)}$			16	60	
Fall time	t$_f$			10	25	

Notes :

1. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.

2. These parameters have no way to verify.