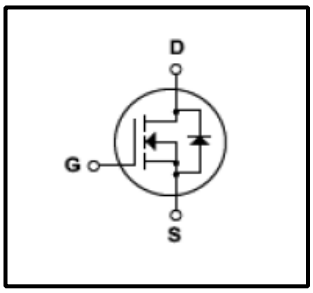
WFW20N60W

Silicon N-Channel MOSFET

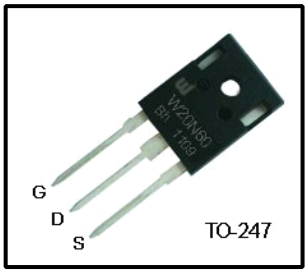
Features

- 20A,600V,$R_{DS(on)}$(Max0.39Ω)@V_{GS}=10V
- Ultra-low Gate charge(Typical 150nC)
- Fast Switching Capability
- 100%Avalanche Tested
- Maximum Junction Temperature Range(150℃)



General Description

This Power MOSFET is produced using Winsemi's advancedplanar stripe,VDMOS technology.this latest technology has beenespecially designed to minimize on-state resistance, have a high rugged avalanche characteristics .This devices is specially wellsuited for AC-DC switching power supplies, DC-DC powerConverters high voltage H-bridge motor drive PWM



Absolute Maximum Ratings

Symbol	Parameter		Value	Units
V_{DSS}	Drain Source Voltage		600	V
I_D	Continuous Drain Current(@Tc=25℃)		20	A
	Continuous Drain Current(@Tc=100℃)		15	A
I_{DM}	Drain Current Pulsed	(Note1)	80	A
V_{GS}	Gate to Source Voltage		±30	V
E_{AR}	Repetitive Avalanche Energy	(Note1)	30	mJ
dv/dt	Peak Diode Recovery dv /dt	(Note3)	5.0	V/ ns
P_D	Total Power Dissipation(@Tc=25℃)		300	W
T_J,T_{stg}	Junction and Storage Temperature		-55~150	℃
T_L	Channel Temperature		300	℃

Thermal Characteristics

Symbol	Parameter	Value			Units
		Min	Typ	Max	
R_{QJC}	Thermal Resistance , Junction -to -Case	-	-	0.25	℃/W

Electrical Characteristics(Tc=25℃)

Characteristics		Symbol	Test Condition	Min	Type	Max	Unit
Gate leakage current		I_{GSS}	V_{GS}=±30V,V_{DS}=0V	-	-	±100	nA
Gate-source breakdown voltage		$V_{(BR)GSS}$	I_G=±10 μA,V_{DS}=0V	±30	-	-	V
Drain cut -off current		I_{DSS}	V_{DS}=600V,V_{GS}=0V	-	-	200	μA
			V_{GS}=0V,T_J=125℃	-	-	1000	μA
Drain -source breakdown voltage		$V_{(BR)DSS}$	I_D=250μA,V_{GS}=0V	600	-	-	V
Breakdown voltage Temperature coefficient		△BV_{DSS}/△T_J	I_D=250μA,Referenced to 25℃	-	0.5	-	V/℃
Gate threshold voltage		$V_{GS(th)}$	V_{DS}=V_{GS},I_D=4mA	3	-	5	V
Drain -source ON resistance		$R_{DS(ON)}$	V_{GS}=10V,I_D=10A	-	-	0.39	Ω
Forward Transconductance		gfs	V_{DS}≥10V,I_D=10A	11	18	-	S
Input capacitance		C_{iss}	V_{DS}=25V,	-	4500		pF
Reverse transfer capacitance		C_{rss}	V_{GS}=0V,	-	140		
Output capacitance		C_{oss}	f=1MHz	-	420		
Switching time	Rise time	tr	V_{GS}=10V	-	45	60	ns
	Turn-on time	ton	V_{DS}=300V,	-	20	40	
	Fall time	tf	I_D=10A	-	40	60	
	Turn-off time	Toff	R_G=2.00Ω	-	70	90	
Total gate charge(gate-source plus gate-drain)		Qg	V_{DS}=300V, V_{GS}=10V,	-	150	170	nC
Gate-source charge		Qgs	I_D=10A	-	30	40	
Gate-drain("miller") Charge		Qgd		-	60	85	

Source-Drain Ratings and Characteristics(Ta=25℃)

Characteristics	Symbol	Test Condition	Min	Type	Max	Unit
Continuous drain reverse current	I_{DR}	-	-	-	20	A
Forward voltage(diode)	V_{DSF}	I_{DR}=I_SA,V_{GS}=0V	-	-	1.5	V
Reverse recovery time	trr	I_{DR}=10A,V_{GS}=0V,	-		250	ns
Reverse recovery charge	Qrr	dI_{DR} / dt =100 A / μs	-	1	-	μC

Note 1.Pulse Test:Pulse Width≤300us,Duty Cycle≤2%

2. Essentially independent of operating temperature.

This transistor is an electrostatic sensitive device

Please handle with caution

TO-247 Package Dimension

Unit:mm