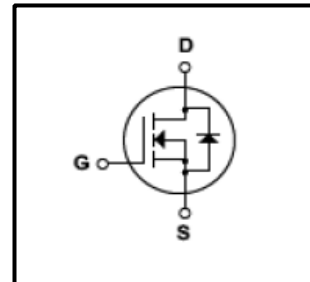


Silicon N-Channel MOSFET

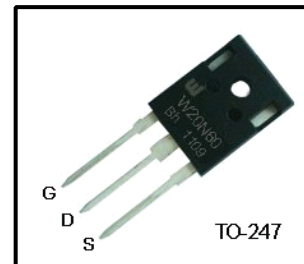
Features

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



General Description

This Power MOSFET is produced using Winsemi's advanced planar stripe, VDMOS technology. This latest technology has been especially designed to minimize on-state resistance, have a high rugged avalanche characteristics. This device is specially well suited for AC-DC switching power supplies, DC-DC power converters, 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(@ $T_c=25^{\circ}C$)	20	A
	Continuous Drain Current(@ $T_c=100^{\circ}C$)	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(@ $T_c=25^{\circ}C$)	300	W
T_J, T_{stg}	Junction and Storage Temperature	-55~150	$^{\circ}C$
T_L	Channel Temperature	300	$^{\circ}C$

Thermal Characteristics

Symbol	Parameter	Value			Units
		Min	Typ	Max	
$R_{\theta JC}$	Thermal Resistance , Junction -to -Case	-	-	0.25	$^{\circ}C/W$

Electrical Characteristics(Tc=25°C)

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°C	-	-	1000	μA	
Drain -source breakdown voltage	V _{(BR)DSS}	I _D =250μA,V _{GS} =0V	600	-	-	V	
Breakdown voltage Temperature coefficient	ΔBV _{DSS} / ΔT _J	I _D =250μA,Referenced to 25°C	-	0.5	-	V/°C	
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	g _{fs}	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 _θ =2.00Ω	-	70	90	
Total gate charge(gate-source plus gate-drain)	Q _g	V _{DS} =300V, V _{GS} =10V,	-	150	170	nC	
Gate-source charge	Q _{gs}	I _D =10A	-	30	40		
Gate-drain("miller") Charge	Q _{gd}		-	60	85		

Source-Drain Ratings and Characteristics(Ta=25°C)

Characteristics	Symbol	Test Condition	Min	Type	Max	Unit
Continuous drain reverse current	I _{DR}	-	-	-	20	A
Forward voltage(diode)	V _{DSF}	I _{DR} =I _S A,V _{GS} =0V	-	-	1.5	V
Reverse recovery time	trr	I _{DR} =10A,V _{GS} =0V,	-		250	ns
Reverse recovery charge	Q _{rr}	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

