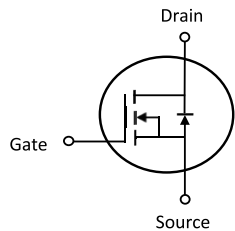


RoHS
Compliant



Device Schematic



Applications

- Electronic Ballasts
- LED Power Supply
- High Efficiency Switch Mode Power Supplies

Features

- $R_{DS(ON)} = 0.5\Omega @ V_{GS} = 10V$
- High Switching Speed
- Avalanche Energy Specified

Maximum Ratings @TA = +25°C

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	650	V
Gate-Source Voltage	V_{GSS}	± 30	
Continuous Drain Current	I_D	20	A
Pulsed Drain Current (Note 2.)	I_{DM}	40	
Single Pulsed Avalanche Energy (Note 3.)	E_{AS}	562	mJ
Peak Diode Recovery dv/dt (Note 4.)	dv/dt	2.46	V/ns
Power Dissipation	P_D	65	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	

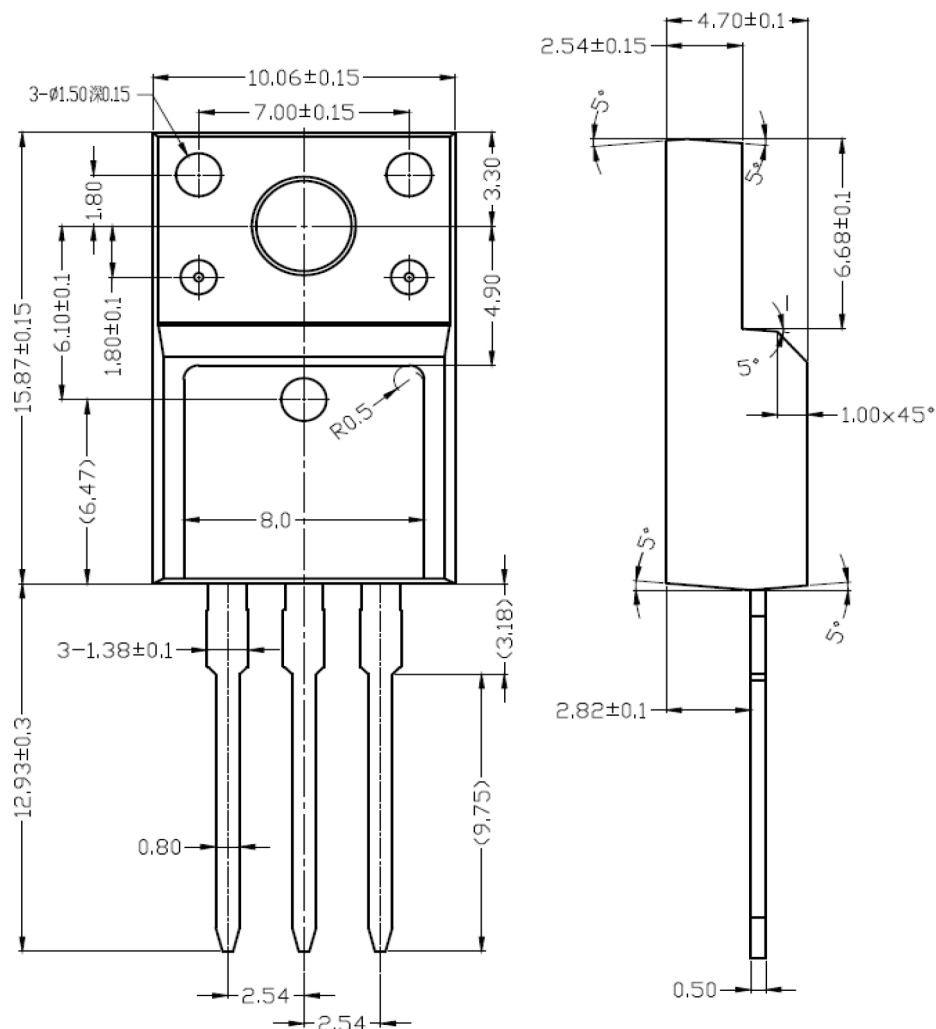
Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. Repetitive Rating : Pulse width limited by maximum junction temperature.
3. L = 10mH, IAS = 10.5A, VDD = 50V, RG = 25Ω, Starting TJ = 25°C
4. ISD ≤ 20A, di/dt ≤ 200A/μs, VDD ≤ BV_{DSS}, Starting TJ = 25°C

Electrical Characteristics @TA = +25°C

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	V_{DSS}	650	--	--	V
Gate-Source Leakage Current	$V_{DS}=0V, V_{GS}=30V$	I_{GSS}	--		100	nA
Gate-Source Leakage Current	$V_{DS}=0V, V_{GS}=-30V$		--		-100	
Drain-Source Leakage Current	$V_{DS}=650V, V_{GS}=0V$	I_{DSS}	--		10	μA
ON Characteristics						
Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{th(GS)}$	2	--	4	V
Static Drain-Source On-State Resistance	$V_{GS}=10V, I_D=10A$	$R_{DS(ON)}$	--	--	0.5	Ω
Dynamic Characteristics						
Input Capacitance	$V_{DS}=25V, V_{GS}=0V, F=1MHz$	C_{ISS}	-	2512	--	pF
Output Capacitance		C_{OSS}	-	231		
Reverse Transfer Capacitance		C_{RSS}	-	14		
Switching Characteristics						
Turn-On Delay Time	$V_{DD}=100V, V_{GS}=10V, I_D=20A, R_G=25\Omega($ Note 1,2) $)$	$t_{D(ON)}$	-	28	--	ns
Turn-On Rise Time		t_R		35		
Turn-Off Delay Time		$t_{D(OFF)}$		140		
Turn-Off Fall Time		t_F		76		
Switching Characteristics						
Total Gate Charge (Note 1)	$V_{DS}=100V, V_{GS}=10V, I_D=20A, I_G=1mA($ Note 1,2) $)$	Q_G	--	54	--	nC
Gate-Source Charge		Q_{GS}		10	--	
Gate-Drain Charge		Q_{GD}		13	--	
Drain-Source Diode Characteristics And Maximum Ratings						
Drain-Source Diode Forward Voltage(Note 1)	$I_S=20A, V_{GS}=0V$	V_{SD}	-	--	1.4	V
Maximum Body-Diode Continuous Current		I_S		--	20	A
Maximum Body-Diode Pulsed Current		I_{SM}		--	40	
Reverse Recovery Time(Note 1)	$V_{GS}=0V, I_S=20A, dI_F/dt=-100A/\mu s$ (Note 1)	t_{RR}		506	--	ns
Reverse Recovery Charge		Q_{RR}		9	--	μC
Notes:1. Pulse Test:Pulse Width $\leq 300\mu s, Duty$ Cycles $\leq 2\%$. 2. Essentially independent of operating temperature						

Dimensions : Millimetres

Outline Dimensions



Part Number Table

Description	Part Number
N Channel MOSFET, 650V, 20A, TO-220F	HMF20N65S

Important Notice : This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.