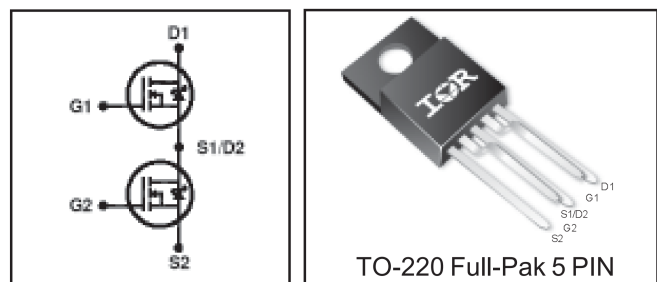


IRFI4020H-117P

Features

- Integrated half-bridge package
- Reduces the part count by half
- Facilitates better PCB layout
- Key parameters optimized for Class-D audio amplifier applications
- Low $R_{DS(ON)}$ for improved efficiency
- Low Q_g and Q_{sw} for better THD and improved efficiency
- Low Q_{rr} for better THD and lower EMI
- Can delivery up to 300W per channel into 8Ω load in half-bridge configuration amplifier
- Lead-free package

Key Parameters ⑤		
V_{DS}	200	V
$R_{DS(ON)}$ typ. @ 10V	80	mΩ
Q_g typ.	19	nC
Q_{sw} typ.	6.8	nC
$R_{G(int)}$ typ.	3.0	Ω
T_J max	150	°C



G1, G2	D1, D2	S1, S2
Gate	Drain	Source

Description

This Digital Audio MosFET Half-Bridge is specifically designed for Class D audio amplifier applications. It consists of two power MosFET switches connected in half-bridge configuration. The latest process is used to achieve low on-resistance per silicon area. Furthermore, Gate charge, body-diode reverse recovery, and internal Gate resistance are optimized to improve key Class D audio amplifier performance factors such as efficiency, THD and EMI. These combine to make this Half-Bridge a highly efficient, robust and reliable device for Class D audio amplifier applications.

Absolute Maximum Ratings ⑤

	Parameter	Max.	Units
V_{DS}	Drain-to-Source Voltage	200	V
V_{GS}	Gate-to-Source Voltage	±20	
I_D @ $T_C = 25^\circ\text{C}$	Continuous Drain Current, V_{GS} @ 10V	9.1	A
I_D @ $T_C = 100^\circ\text{C}$	Continuous Drain Current, V_{GS} @ 10V	5.7	
I_{DM}	Pulsed Drain Current ①	36	
P_D @ $T_C = 25^\circ\text{C}$	Power Dissipation ④	21	W
P_D @ $T_C = 100^\circ\text{C}$	Power Dissipation ④	8.5	
	Linear Derating Factor	0.17	W/°C
E_{AS}	Single Pulse Avalanche Energy②	130	mJ
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to + 150	°C
	Soldering Temperature, for 10 seconds (1.6mm from case)	300	
	Mounting torque, 6-32 or M3 screw	10lb·in (1.1N·m)	

Thermal Resistance ⑤

	Parameter	Typ.	Max.	Units
$R_{\theta JC}$	Junction-to-Case ④	—	5.9	°C/W
$R_{\theta JA}$	Junction-to-Ambient (free air)	—	65	