HMZ3400

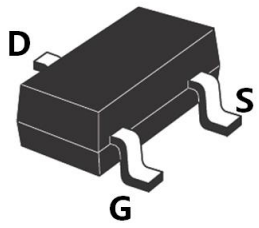
Silicon N-Channel Power MOSFET

General Description :

The HMZ3400 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications. The package form is SOT-23, which accords with the RoHS standard.

V_{DSS}	30	V
I_D	5.8	A
P_D	0.35	W
$R_{DS(ON)MAX}$	30	mΩ

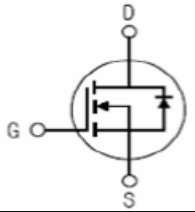
SOT-23



Features :

- $R_{DS(ON)}$ <30mΩ @ V_{GS}=10V
- High density cell design for ultra low R_{dson}
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

Inner Equivalent Principium Chart



Applications :

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Absolute (Tc= 25℃ unless otherwise specified) :

Symbol	Parameter	Rating	Units
V_{DSS}	Drain-to-Source Voltage	30	V
I_D	Continuous Drain Current	5.8	A
I_{DM}	Pulsed Drain Current	30	A
V_{GS}	Gate-to-Source Voltage	±12	V
P_D	Power Dissipation	0.35	W
T_J , T_{stg}	Operating Junction and Storage Temperature Range	150 , −55 to 150	℃

Symbol	Parameter	Typ.	Units
$R_{\theta JA}$	Junction-to-Ambient[a2]	357	℃/W

Electrical Characteristics (Tc= 25℃ unless otherwise specified) :

OFF Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
V_{DSS}	Drain to Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	30	--	--	V
I_{DSS}	Drain to Source Leakage Current	V_{DS}=24V, V_{GS}= 0V,T_a=25℃	--	--	1.0	μA
$I_{GSS(F)}$	Gate to Source Forward Leakage	V_{GS}=+12V	--	--	0.1	μA
$I_{GSS(R)}$	Gate to Source Reverse Leakage	V_{GS}=-12V	--	--	-0.1	μA

ON Characteristics[a3]						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
$R_{DS(ON)}$	Drain-to-Source On-Resistance	V_{GS}=10V,I_D=5.8A	--	--	30	mΩ
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250μA	0.7	--	1.4	V
Pulse width tp≤380μs,δ≤2%						

Dynamic Characteristics[a4]						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
g_{fs}	Forward Transconductance	V_{DS}=5V,I_D=5A	8	--	--	S
C_{iss}	Input Capacitance	V_{GS}=0V,V_{DS}=15V f=1.0MHz	--	--	1050	pF
C_{oss}	Output Capacitance		--	99	--	
C_{rss}	Reverse Transfer Capacitance		--	77	--	

Resistive Switching Characteristics[a4]						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=10V,R_L=2.7Ω V_{GS}=10V,R_G=3Ω	--	--	5	ns
t_r	Rise Time		--	--	7	
$t_{d(OFF)}$	Turn-Off Delay Time		--	--	40	
t_f	Fall Time		--	--	6	

Source-Drain Diode Characteristics						
Symbol	Parameter	Test Conditions	Rating			Units
			Min.	Typ.	Max.	
V_{SD}	Diode Forward Voltage[a3]	I_S=1A,V_{GS}=0V	--	--	1	V

[a1] : Repetitive Rating: Pulse width limited by maximum junction temperature.
[a2] : Surface Mounted on FR4 Board, t≤10sec.
[a3] : Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%.
[a4] : Guaranteed by design, not subject to production