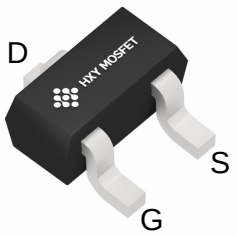
MCH3376

P-Channel Enhancement Mode MOSFET

Description

The MCH3376 uses advanced trench technology to provide excellent $R_{DS(ON)}$, This device is suitable for use as a load switch or in PWM applications.



SOT-323
(MCPH-3)

General Features

V_{DS} = -20V,I_D = -1.8A

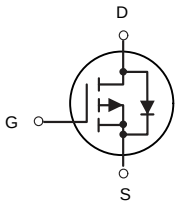
$R_{DS(ON)}$ < 150mΩ @ V_{GS}=-4.5V

Application

Battery protection

Load switch

Uninterruptible power supply



P-Channel MOSFET

Ordering Information

Product ID	Pack	Brand	Qty(PCS)
MCH3376	SOT-323(MCPH-3)	HXY MOSFET	3000

Absolute Maximum Ratings (TA=25℃unless otherwise noted)

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	±12	V
I_D	Drain Current-Continuous	-1.8	A
I_{DM}	Drain Current-Pulsed (Note 1)	-3	A
P_D	Maximum Power Dissipation	0.29	W
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	℃
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient (Note 2)	431	℃/W

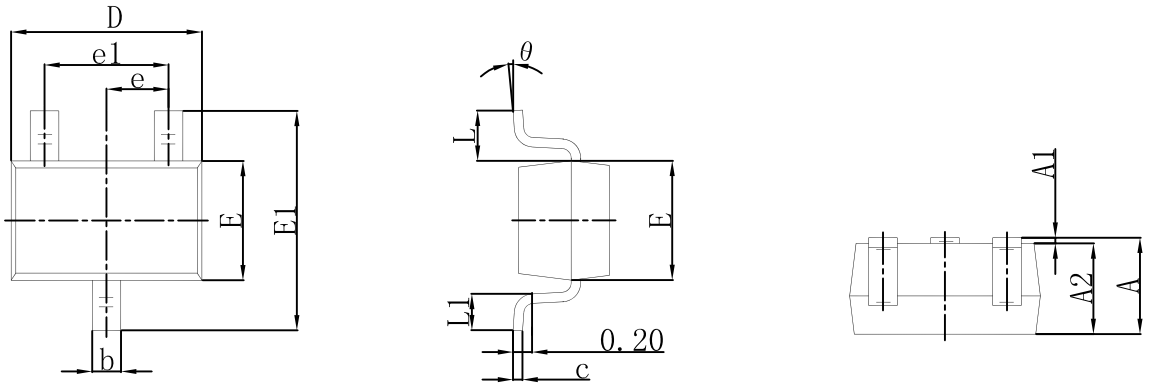
Electrical Characteristics (T_A=25℃unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
STATIC CHARACTERISTICE						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-18V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±100	nA
Gate threshold voltage (note2)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.4	-0.7	-1.0	V
Drain-source on-resistance (note2)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-2A			150	mΩ
		V_{GS} =-2.5V, I_D =-1.0A			230	mΩ
Maximum Continuous Drain to Source Diode Forward Current	I_S	--			-1.0	A
Diode forward voltage	V_{SD}	I_S=-1.0A, V_{GS} =0V			-1.2	V
DYNAMIC CHARACTERISTICS (note3)						
Input capacitance	C_{iss}	V_{DS} =-8V,V_{GS} =0V, f =1MHz			680	pF
Output capacitance	C_{oss}				130	pF
Reverse transfer capacitance	C_{rss}				95	pF
SWITCHING CHARACTERISTICS (note3)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=-4.5V,V_{DS}=-10V, I_D=-1.0A,R_G=5.1Ω			10	nS
Turn-on rise time	t_r				20	nS
Turn-off delay time	$t_{d(off)}$				35	nS
Turn-off fall time	t_f				18	nS

Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. These parameters have no way to verify.

SOT-323(MCPH-3) Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
K	0°	8°	0°	8°

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