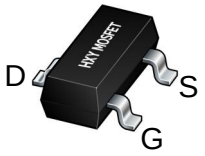
Description

The HXY2102EI uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a Battery protection or in other Switching application.



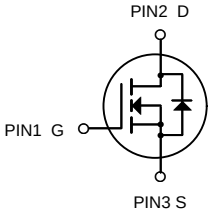
SOT-323

General Features

V_{DS} = 20V I_D =2 A

$R_{DS(ON)}$ < 55mΩ@ V_{GS}=4.5V

$R_{DS(ON)}$ < 85mΩ@ V_{GS}=2.5V



N-Channel MOSFET

Application

Battery protection

Load switch

Uninterruptible power supply

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
HXY2102EI	SOT-323	TS2	3000

Absolute Maximum Ratings (T_A=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	2	A
P_D	Maximum Power Dissipation	0.3	W
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	℃
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient (Note 2)	125	℃/W

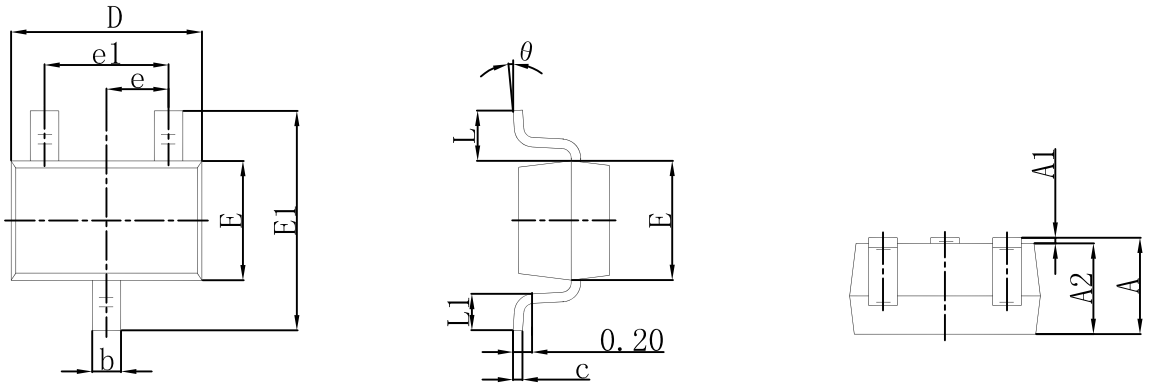
Electrical Characteristics (T_A=25℃unless otherwise noted)

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 =2.0A			55	mΩ
		V_{GS} =2.5V, I_D =0.3A			85	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} =10V,V_{GS} =0V, f =1MHz		300		pF
Output capacitance	C_{oss}			120		pF
Reverse transfer capacitance	C_{rss}			80		pF
SWITCHING CHARACTERISTICS (note3)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=4.5V,V_{DS}=10V, R_L=5.1Ω,R_G=5.1Ω			15	nS
Turn-on rise time	t_r				85	nS
Turn-off delay time	$t_{d(off)}$				65	nS
Turn-off fall time	t_f				27	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 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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