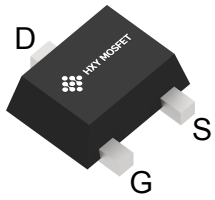
HXY3139KI

P-Channel Enhancement Mode MOSFET

Description

The HXY3139KI 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.



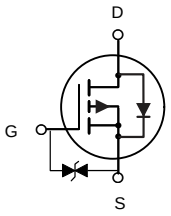
SOT-723

General Features

V_{DS} = -20V I_D = -0.66A

$R_{DS(ON)}$ < 560 mΩ@ V_{GS}= -4.5V

ESD Rating: 1500V HBM



P-Channel MOSFET

Application

Load/Power Switching

Interfacing Switching

Battery Management for Ultra Small Portable Electronics

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
HXY3139KI	SOT-723	KD	8000

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	±10	V
I_D	Drain Current-Continuous	-0.66	A
I_{DM}	Drain Current-Pulsed (Note 1)	-1.2	A
P_D	Maximum Power Dissipation	0.15	W
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	°C
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient (Note 2)	850	°C/W

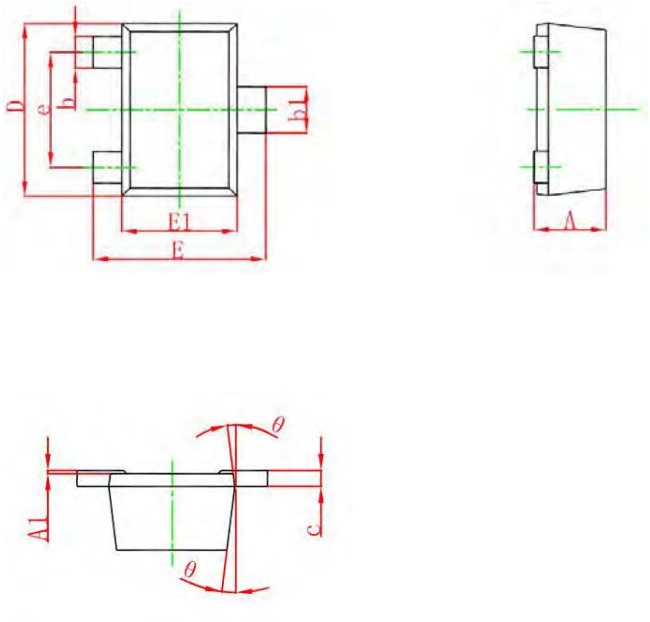
Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-20V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±10	μA
Gate threshold voltage (note2)	$V_{GS(th)}$	V_{DS} =VGS, I_D =-250μA	-0.4	-0.7	-1.0	V
Drain-source on-resistance (note2)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-0.5A			0.56	Ω
		V_{GS} =-2.5V, I_D =-0.2A			0.78	Ω
Maximum Continuous Drain to Source Diode Forward Current	I_S	--			-0.6	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}	--			-1.2	A
Diode forward voltage	V_{SD}	I_S=-0.5A, V_{GS} = 0V			-1.2	V
Input capacitance	C_{iss}	V_{DS} =-16V,V_{GS} =0V, f =1MHz		115		pF
Output capacitance	C_{oss}			15		pF
Reverse transfer capacitance	C_{rss}			9		pF
Turn-on delay time (note3)	$t_{d(on)}$	V_{GS}=-4.5V,V_{DS}=-10V, I_D=-200mA,R_{GEN}=10Ω		9		nS
Turn-on rise time (note3)	t_r			6		nS
Turn-off delay time (note3)	$t_{d(off)}$			33		nS
Turn-off fall time (note3)	t_f			22		nS

Notes:

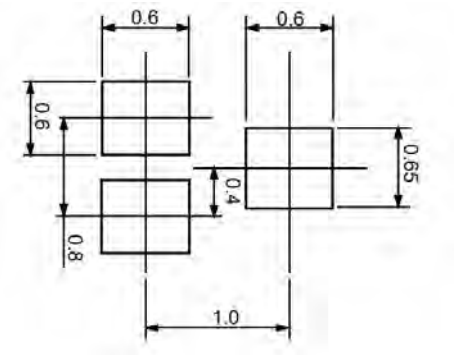
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producting.

SOT-723 Package Outline Dimensions



Symbol	Dimensions In Millimet	
	Min	Max
A	0.42	0.50
A1	0.00	0.05
b	0.16	0.28
b1	0.25	0.35
c	0.07	0.16
D	1.10	1.30
e	0.8TYP	
E	1.10	1.30
E1	0.75	0.85
θ	8°	10°

Suggested Pad Layout (mm)



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