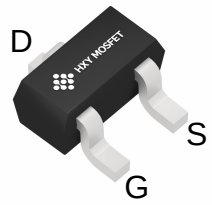
SI1032R-T1-GE3

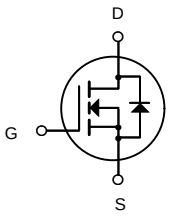
N-Channel Enhancement Mode MOSFET

Description

The SI1032R-T1-GE3 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-523
(SC-75A)



N-Channel MOSFET

General Features

V_{DS} = 20V I_D =0.8A

$R_{DS(ON)}$ < 250 mΩ@ V_{GS}=4.5V

$R_{DS(ON)}$ < 360 mΩ@ V_{GS}=2.5V

Application

Battery protection

Load switch

Uninterruptible power supply

Package Marking and Ordering Information

Product ID	Pack	Brand	Qty(PCS)
SI1032R-T1-GE3	SOT-523(SC-75A)	HXY MOSFET	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	±8	V
I_D	Drain Current-Continuous	0.8	A
P_D	Maximum Power Dissipation	0.15	W
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	℃
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient (Note 2)	850	℃/W

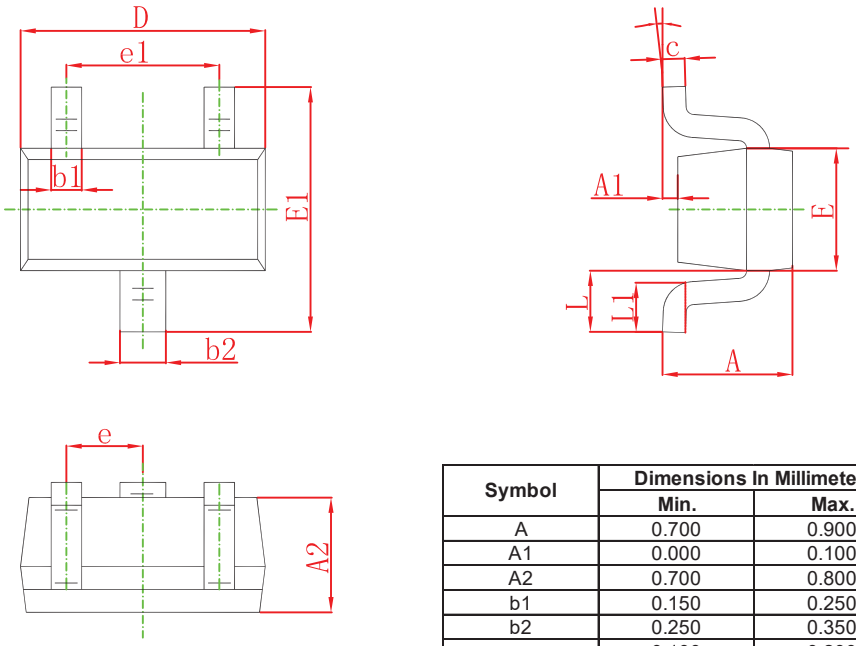
Electrical Characteristics (T_J=25 ˚C, unless otherwise noted)

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} =20V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±8V, V_{DS} = 0V			±10	μA
Gate threshold voltage (note2)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.7	1.0	V
Drain-source on-resistance (note2)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =0.5A		0.18	0.25	Ω
		V_{GS} =2.5V, I_D =0.5A		0.27	0.36	Ω
Maximum Continuous Drain to Source Diode Forward Current	I_S	--			0.8	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
DYNAMIC CHARACTERISTICS (note4)						
Input capacitance	C_{iss}	V_{DS} =16V,V_{GS} =0V, f =1MHz		50		pF
Output capacitance	C_{oss}			7		pF
Reverse transfer capacitance	C_{rss}			4.5		pF
SWITCHING CHARACTERISTICS (note4)						
Turn-on delay time (note3)	$t_{d(on)}$	V_{GS}=4.5V,V_{DS}=10V, R_L=10Ω		2		nS
Turn-on rise time (note3)	t_r			32		nS
Turn-off delay time (note3)	$t_{d(off)}$			47		nS
Turn-off fall time (note3)	t_f			22		nS

Notes:

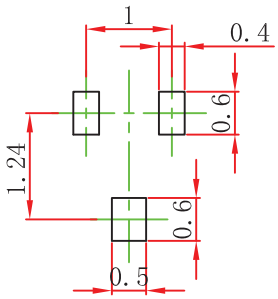
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producting.

SOT-523(SC-75A)Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

Attention

■ Any and all HUA XUAN YANG ELECTRONICS products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your HUA XUAN YANG ELECTRONICS representative nearest you before using any HUA XUAN YANG ELECTRONICS products described or contained herein in such applications.

■ HUA XUAN YANG ELECTRONICS assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein.

■ Specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer’s products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer’s products or equipment.

■ HUA XUAN YANG ELECTRONICS CO.,LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could
give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.

■ In the event that any or all HUA XUAN YANG ELECTRONICS products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.

■ No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of HUA XUAN YANG ELECTRONICS CO.,LTD.

■ Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. HUA XUAN YANG ELECTRONICS believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

■ Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the HUA XUAN YANG ELECTRONICS product that you intend to use.

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

HXY MOSFET:

P6SMB33CA SS10100 SS1045 SS5150B HESDNC5VB1AF-B PESD5V0S1BB HXY8205ES P6SMB36CA TPSMB100CA-VR HOPA2340UA P6SMB200A BZT52C3V3S HAD8542ARZ HT7150 HT7540-1 SS510C US2M BZT52C13 HC4D20120A IRLML6246PBF TPSMB28A-VR HXY2101EI HXY2300MI MMBT3904T SD15C SQJA04EP-T1_BE3 DTC143ZE HC3D10170A HMCP602-I/SN MAX487ESA