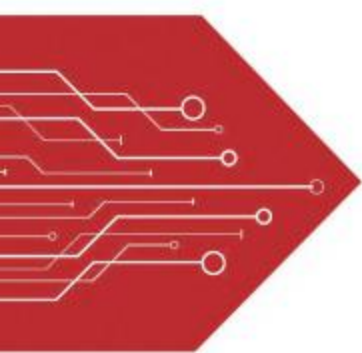


MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



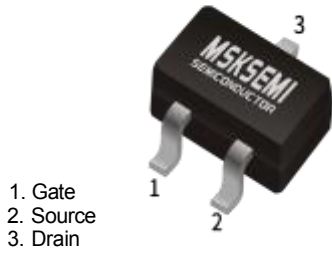
GDT



PLED

Product data sheet

www.msksemi.com

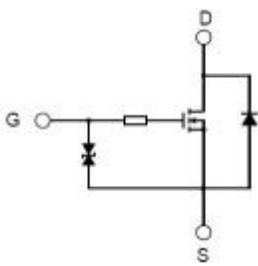


SOT-523

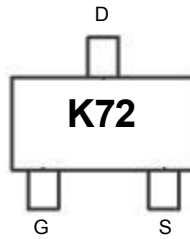
Specification Features:

- Low On-resistance
- Low Gate Threshold Voltage
- Low Input capacitance
- ESD Protected up to 1kV (HBM)
- RoHS Compliant
- Green EMC
- Matte Tin(Sn) Lead Finish
- Weight: approx. 0.002g

Electrical Symbol:



Marking



Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Continuous Gate-Source Voltage	$\pm 20\text{V}$	V
I_D	Continuous Drain Current	115	mA
P_D	Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833	$^\circ\text{C}/\text{W}$
T_{STG}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_J	Operating Junction Temperature	+150	$^\circ\text{C}$

Off Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=10\mu A$	60			Volts
I_{GSS}	Gate-Body Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$			± 1	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$			100	nA

On Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
$V_{th(GS)}$	Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1		2.5	Volts
$I_{D(ON)}$	On-state Drain Current	$V_{GS}=10V, V_{DS}=7V$	500			mA
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=500mA$			7.5	Ω
		$V_{GS}=5V, I_D=50mA$			7.5	Ω
g_{fs}	Forward Trans Conductance	$V_{DS}=10V, I_D=200mA$	80		500	ms
$V_{DS(on)}$	Drain-Source On-Voltage	$V_{GS}=10V, I_D=500mA$			3.75	V
		$V_{GS}=5V, I_D=50mA$			0.375	V
V_{SD}	Diode Forward Voltage	$I_S=250mA, V_{GS}=0V$			1	V

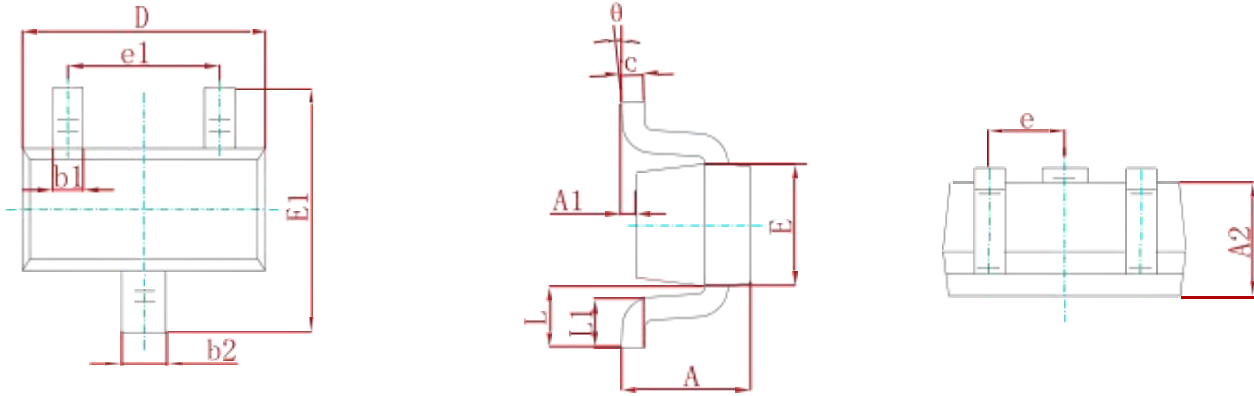
Dynamic Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
C_{iss}	Input Capacitance		--	--	50	pF
C_{oss}	Output Capacitance	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1.0MHz$	--	--	25	pF
C_{rss}	Reverse Transfer Capacitance		--	--	5.0	pF

Switching Characteristics

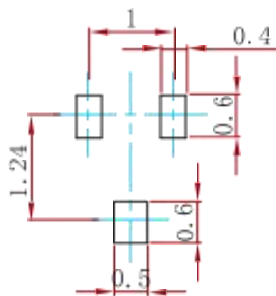
Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
$t_{D(on)}$	Turn-on Time	$V_{DD}=10V, R_L=20\Omega,$	--	5.6	--	nS
$t_{D(off)}$	Turn-off Time	$I_D=500mA,$ $V_{GEN}=10V, R_G = 10\Omega$	--	25	--	nS

PACKAGE MECHANICAL DATA



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°

Suggested Pad Layout



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

REEL SPECIFICATION

P/N	PKG	QTY
2N7002T-MS	SOT-523	3000

Attention

- Any and all MSKSEMI Semiconductor 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 MSKSEMI Semiconductor representative nearest you before using any MSKSEMI Semiconductor products described or contained herein in such applications.
- MSKSEMI Semiconductor 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 MSKSEMI Semiconductor products described or contained herein.
- Specifications of any and all MSKSEMI Semiconductor 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.
- MSKSEMI Semiconductor 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 MSKSEMI Semiconductor 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 MSKSEMI Semiconductor.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. MSKSEMI Semiconductor believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringement 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 MSKSEMI Semiconductor product that you intend to use.

单击下面可查看定价，库存，交付和生命周期等信息

[>>MSKSEMI\(美森科\)](#)