N-Channel 60V (D-S) Power MOSFET

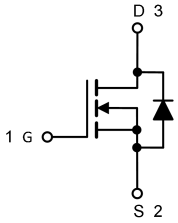
Features

- 100% Avalanche Tested
- Halogen Free, Pb-Free
- RoHS Compliant

SOT-23

Applications

- Relay driver
- Switching circuits
- High-side load switch
- High-speed line driver



Absolute Maximum Ratings (T_A=25°C unless otherwise noted)				
Parameter		**Symbol**	**Value**	**Unit**
Drain Source Voltage		V_{DS}	60	V
Gate Source Voltage		V_{GS}	±20	V
Drain Current, Continuous V_{GS}=10V	T_C=25°C	I_D	2.7	A
Drain Current, Pulsed *(Note 1)*		I_{DM}	10.8	A
Power Dissipation	T_C=25°C	P_D	1.25	W
Operating Junction/ Storage Temperature Range		T_J/ T_{STG}	-55 to +150	°C

Note 1: Single pulse; t_p ≤ 1us.

Thermal Characteristics			
Parameter	**Symbol**	**Max**	**Unit**
Thermal Resistance Junction to Ambient *(Note 2)*	R_{thJA}	100	°C/W

Note 2: Device mounted on 1 square inch FR4 PCB board, with 2oz single-sided copper, in a 25°C still air environment.

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	60	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V	--	--	1	uA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_{DS}=250uA	1	--	2.5	V
Gate Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	--	--	±100	nA
Drain-Source On-state Resistance *(Note 3)*	$R_{DS(on)}$	V_{GS}=10V, I_D=2.7A	--	70	92	mΩ
Total Gate Charge	Q_g	$V_{GS(off)}$=0V, $V_{GS(on)}$=10V, V_{DD}=40V, I_D=4A	--	12	--	nC
Gate-Source Charge	Q_{gs}		--	3.5	--	
Gate-Drain Charge	Q_{gd}		--	3.7	--	
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=10V, V_{DD}=25V, I_D=1.2A, R_G=50Ω	--	9.2	--	ns
Turn-on Rise Time	t_r		--	16.7	--	
Turn-off Delay Time	$t_{d(off)}$		--	35.4	--	
Turn-off Fall Time	t_f		--	8.6	--	
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=25V, f=1MHz	--	641	--	pF
Output Capacitance	C_{oss}		--	48	--	
Reverse Transfer Capacitance	C_{rss}		--	38	--	

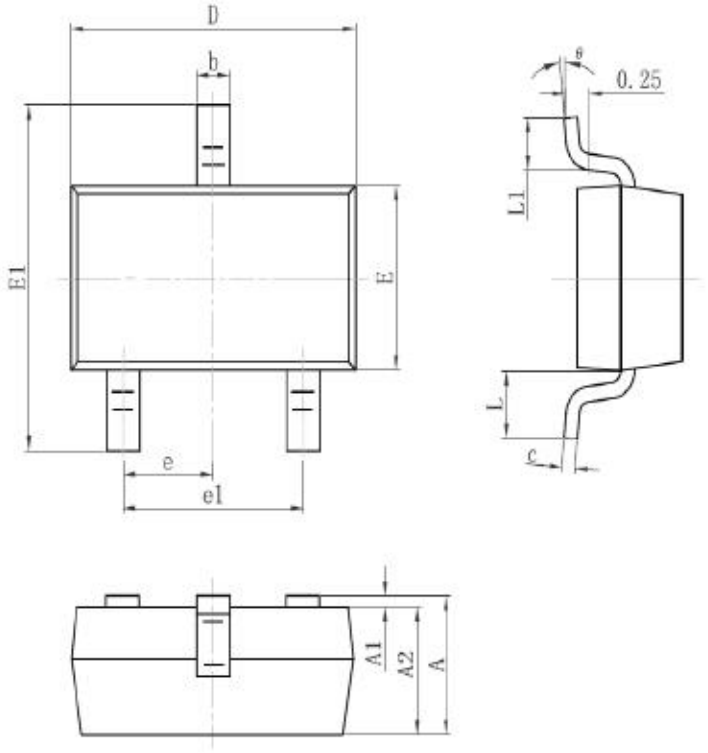
Reverse Diode Characteristics (T_A =25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Forward Current, Continuous	I_{SD}	T_C=25°C	--	--	2.7	A
Diode Forward Voltage *(Note 3)*	V_{SD}	I_F=2.7A, V_{GS}=0V	--	0.85	1.3	V

Note 3: Pulse test; pulse width ≤ 380μs, duty cycle ≤ 1%.

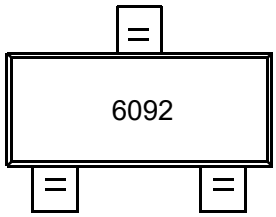
Package Outline Dimensions (Unit: millimeters)

SOT-23



Symbol	Dimension In Millimeters		Dimension In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.95TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.55REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Marking Outline



Part Name: SSF6092G1

1. P/N Mark: 6092

Revision History

Version	Date	Major Changes
Rev.A	2025.07.17	Official Release

Disclaimers

These materials are intended as a reference to assist our customers in the selection of the Suzhou Good-Ark product best suited to the customer's application; they do not convey any license under any intellectual property rights, or any other rights, belonging to Suzhou Good-Ark Electronics Co., Ltd.or a third party.

Suzhou Good-Ark Electronics Co., Ltd. assumes no responsibility for any damage, or infringement of any third-party's rights, originating in the use of any product data, diagrams, charts, programs, algorithms, or circuit application examples contained in these materials.

All information contained in these materials, including product data, diagrams, charts, programs and algorithms represents information on products at the time of publication of these materials, and are subject to change by Suzhou Good-Ark Electronics Co., Ltd. without notice due to product improvements or other reasons. It is therefore recommended that customers contact Suzhou Good-Ark Electronics Co., Ltd. or an authorized Suzhou Good-Ark Electronics Co., Ltd. for the latest product information before purchasing a product listed herein. The information described here may contain technical inaccuracies or typographical errors. Suzhou Good-Ark Electronics Co., Ltd. assumes no responsibility for any damage, liability, or other loss rising from these inaccuracies or errors. Please also pay attention to information published by Suzhou Good-Ark Electronics Co., Ltd. by various means, including our website home page.
(http://www.goodark.com)

When using any or all of the information contained in these materials, including product data, diagrams, charts, programs, and algorithms, please be sure to evaluate all information as a total system before making a final decision on the applicability of the information and products. Suzhou Good-Ark Electronics Co., Ltd. assumes no responsibility for any damage, liability or other loss resulting from the information contained herein.

The prior written approval of Suzhou Good-Ark Electronics Co., Ltd. is necessary to reprint or reproduce in whole or in part these materials.

Please contact Suzhou Good-Ark Electronics Co., Ltd. or an authorized distributor for further details on these materials or the products contained herein.