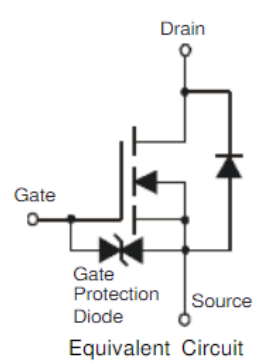


JXP2N7002VRG

N-CHANNEL ENHANCEMENT MODE MOSFET

<p>DESCRIPTION</p> <p>This MOSFET has been designed to minimize the on-state resistance ($R_{DS(on)}$) and yet maintain superior switching performance, making it ideal for high efficiency power management applications.</p> <p>GENERAL FEATURES</p> <ul style="list-style-type: none"> ◇ $V_{DS} = 60V, I_D = 0.3A$ <li style="padding-left: 20px;">$R_{DS(ON)} < 3\Omega @ V_{GS}=4.5V$ <li style="padding-left: 20px;">$R_{DS(ON)} < 2\Omega @ V_{GS}=10V$ ◇ Dual N-Channel MOSFET ◇ Low On-Resistance ◇ Low Gate Threshold Voltage ◇ Low Input Capacitance ◇ Fast Switching Speed <p>APPLICATION</p> <ul style="list-style-type: none"> ◇ PWM applications ◇ Load switch <p>PACKAGE</p> <ul style="list-style-type: none"> ◇ SOT-23 	<p>SCHEMATIC DIAGRAM</p>  <p>PIN ASSIGNMENT</p> <p style="text-align: center;">SOT-23 (TOP VIEW)</p> <div style="text-align: center;"> <p>D</p> <div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;">3</div> <div style="font-size: 24px; font-weight: bold; margin: 0 10px;">7 2 K</div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;">1</div> <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;">2</div> </div> <p style="margin-top: 5px;">G S</p> </div>
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ORDERING INFORMATION

Part Number	Storage Temperature	Package	Marking	Devices Per Reel
JXP2N7002VRG	-55°C to +150°C	SOT-23	72K	3000

ABSOLUTE MAXIMUM RATINGS

($T_A=25^\circ\text{C}$ unless otherwise noted)

parameter		symbol	limit	unit
Drain-source voltage		V_{DS}	60	V
Gate-source voltage		V_{GS}	± 20	V
Continuous drain current ($T_J = 150^\circ\text{C}$) ^a	$T_A=25^\circ\text{C}$	I_D	380	mA
	$T_A=70^\circ\text{C}$		300	
Pulsed drain current ^b		I_{DM}	1200	
Continuous source current (diode conduction) ^a		I_S	380	
Power dissipation ^a	$T_A=25^\circ\text{C}$	P_D	0.71	W
	$T_A=70^\circ\text{C}$		0.46	
Operating junction and storage temperature range		T_J, T_{stg}	-55—150	°C

THERMAL CHARACTERISTICS

Parameter		Symbol	Typ	Max	Unit
Maximum junction-to-ambient ^a	≤ 5 s	R _{θJA}	120	145	°C/W
	Steady-State		140	175	
Maximum junction-to-foot	Steady-State	R _{θJC}	62	78	

Notes:

a. TC = 25 °C.

b. Surface mounted on 1" x 1" FR4 board.

c. t = 5 s.

d. Maximum under steady state conditions is 400 °C/W.

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} =0V, I _D =-250μA	60	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =60V, V _{GS} =0V	-	-	1	μA
Gate-body leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	-	-	±10	μA
ON Characteristics						
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.3	2.5	V
Drain-source on-state resistance ^a	R _{DS(ON)}	V _{GS} =10V, I _D =0.34A	-	0.9	2	Ω
		V _{GS} =4.5V, I _D =0.2A	-	1.1	3	
Forward transconductance ^a	g _{fs}	V _{DS} =30V, I _D =0.2A	-	159	-	ms
Dynamic Characteristics ^b						
Input capacitance	C _{ISS}	V _{DS} =30V, V _{GS} =0V f=1.0MHz	-	18.5	-	pF
Output capacitance	C _{OSS}		-	7.5	-	
Reverse transfer capacitance	C _{RSS}		-	4.2	-	
Switching Characteristics						
Turn-on delay time	t _{D(ON)}	V _{DD} =30V I _D =0.3A V _{GEN} =10V R _L =100Ω R _{GEN} =1Ω	-	6.5	-	ns
Rise time	t _r		-	12	-	
Turn-off delay time	t _{D(OFF)}		-	13	-	
Fall time	t _f		-	14	-	
Total gate charge	Q _g	V _{DS} =30V, I _D =0.34A V _{GS} =4.5V	-	0.5	-	nC
Gate-source charge	Q _{gs}		-	0.2	-	
Gate-drain charge	Q _{gd}		-	0.15	-	
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode forward voltage	V _{SD}	V _{GS} =0V, I _S =0.3A	-	-0.81	-1.2	V

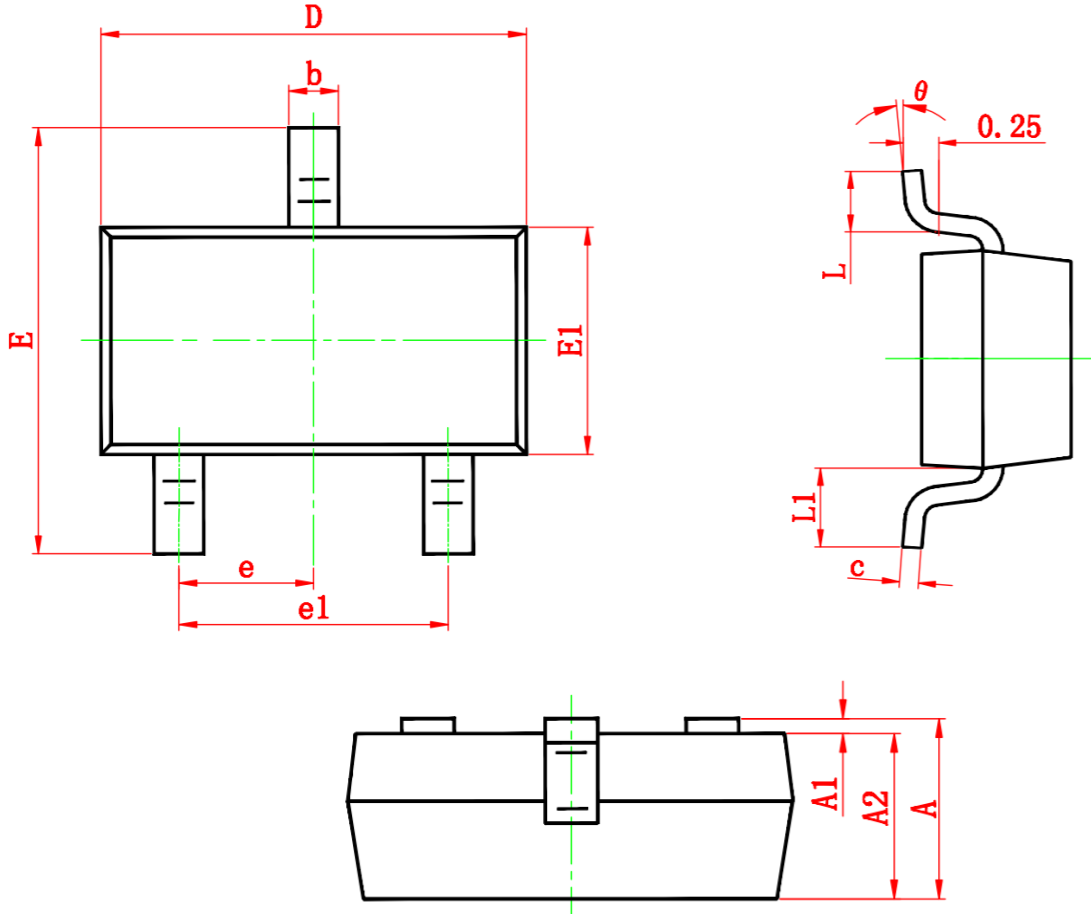
Notes

a. Pulse test: Pulse width ≤ 300 μs, duty cycle ≤ 2 %

b. Guaranteed by design, not subject to production testing

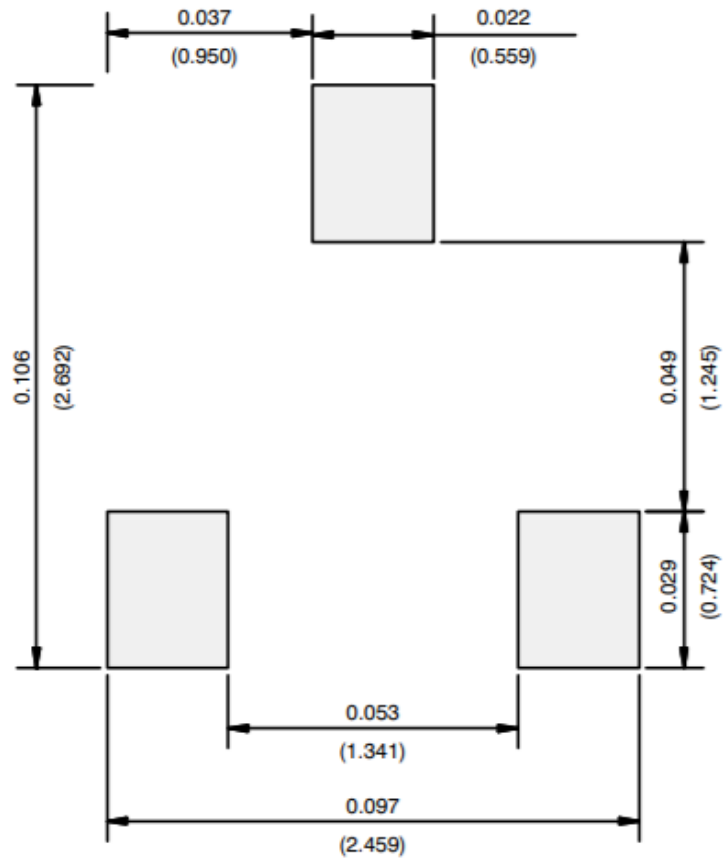
PACKAGE INFORMATION

- SOT-23



Symbol	Dimensions In Millimeters		Dimensions 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	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.300	0.500	0.012	0.020
L1	0.550 REF.		0.022 REF.	
θ	0°	8°	0°	8°

RECOMMENDED MINIMUM PADS FOR SOT-23



Recommended Minimum Pads
Dimensions in Inches/(mm)