

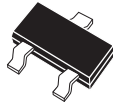
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**2N7002**  
**N-CHANNEL**  
**ENHANCEMENT-MODE**  
**MOSFET**



**SOT-23 CASE**

**Central**<sup>TM</sup>  
**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N7002 type is a N-Channel Field Effect Transistor, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications.

**MARKING CODE: 702**

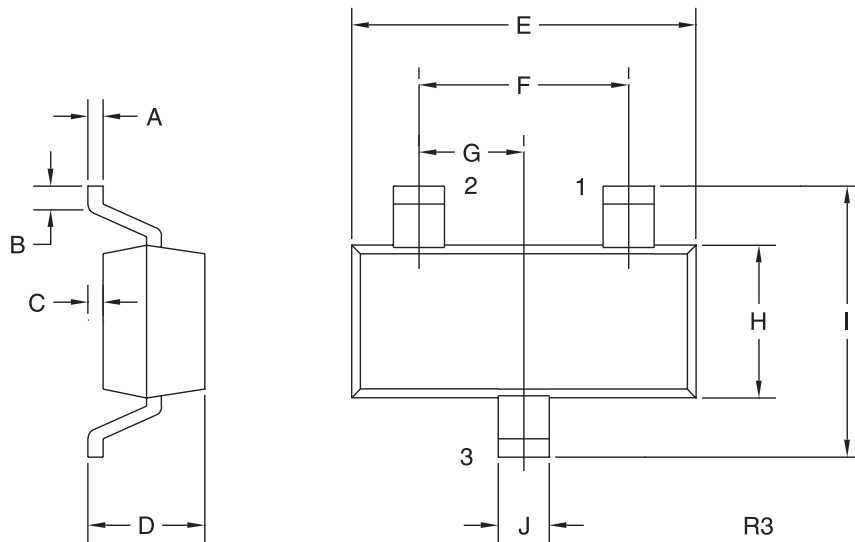
**MAXIMUM RATINGS:** (T<sub>A</sub>=25°C)

	SYMBOL		UNITS
Drain-Source Voltage	V <sub>DS</sub>	60	V
Drain-Gate Voltage	V <sub>DG</sub>	60	V
Gate-Source Voltage	V <sub>GS</sub>	40	V
Continuous Drain Current (T <sub>C</sub> =25°C)	I <sub>D</sub>	115	mA
Continuous Drain Current (T <sub>C</sub> =100°C)	I <sub>D</sub>	75	mA
Continuous Source Current (Body Diode)	I <sub>S</sub>	115	mA
Maximum Pulsed Drain Current	I <sub>DM</sub>	800	mA
Maximum Pulsed Source Current	I <sub>SM</sub>	800	mA
Power Dissipation	P <sub>D</sub>	350	mW
Operating and Storage			
Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C
Thermal Resistance	θ <sub>JA</sub>	357	°C/W

**ELECTRICAL CHARACTERISTICS:** (T<sub>A</sub>=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I <sub>GSSF</sub>	V <sub>GS</sub> =20V			100	nA
I <sub>GSSR</sub>	V <sub>GS</sub> =20V			100	nA
I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0			1.0	μA
I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0, T <sub>A</sub> =125°C			500	μA
I <sub>D(ON)</sub>	V <sub>DS</sub> ≥ 2V <sub>DS(ON)</sub> , V <sub>GS</sub> =10V	500			mA
BV <sub>DSS</sub>	I <sub>D</sub> =10μA	60	105		V
V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1.0	2.1	2.5	V
V <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA			3.75	V
V <sub>DS(ON)</sub>	V <sub>GS</sub> =5.0V, I <sub>D</sub> =50mA			1.5	V
r <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA		3.7	7.5	Ω
r <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA, T <sub>A</sub> =100°C			13.5	Ω
r <sub>DS(ON)</sub>	V <sub>GS</sub> =5.0V, I <sub>D</sub> =50mA		6.2	7.5	Ω
r <sub>DS(ON)</sub>	V <sub>GS</sub> =5.0V, I <sub>D</sub> =50mA, T <sub>A</sub> =100°C			13.5	Ω
g <sub>FS</sub>	V <sub>DS</sub> ≥ 2V <sub>DS(ON)</sub> , I <sub>D</sub> =200mA	80			mmhos
C <sub>rss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0, f=1.0MHz			5.0	pF
C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0, f=1.0MHz			50	pF
C <sub>oss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0, f=1.0MHz			25	pF
t <sub>on</sub>	V <sub>DD</sub> =30V, I <sub>D</sub> =10V, R <sub>G</sub> =25Ω, R <sub>L</sub> =25Ω			20	ns
t <sub>off</sub>	V <sub>DD</sub> =30V, I <sub>D</sub> =10V, R <sub>G</sub> =25Ω, R <sub>L</sub> =25Ω			20	ns
V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =11.5mA			1.5	V

SOT-23 CASE - MECHANICAL OUTLINE



**LEAD CODE:**

- 1) GATE
- 2) SOURCE
- 3) DRAIN

**MARKING CODE: 702**

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.098	2.10	2.49
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R3)