

**2N7002**

**N-CHANNEL  
ENHANCEMENT-MODE  
MOSFET**



**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 is 702.**

**MAXIMUM RATINGS** ( $T_A=25^{\circ}\text{C}$ )

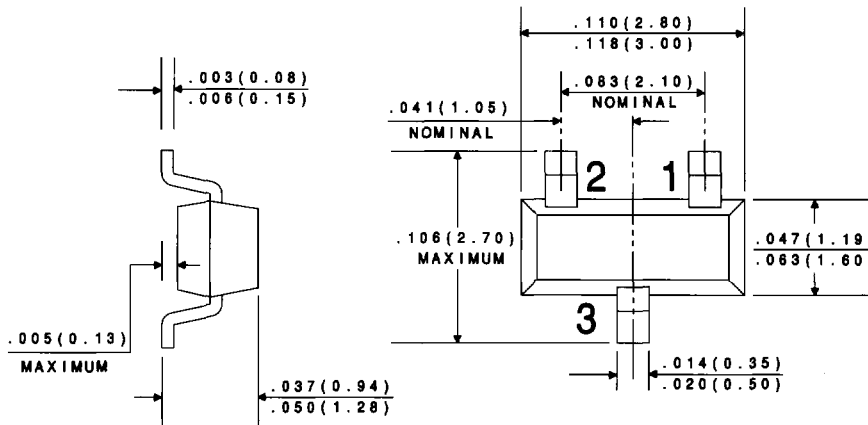
	<b>SYMBOL</b>		<b>UNITS</b>
Drain-Source Voltage	$V_{DS}$	60	V
Drain-Gate Voltage	$V_{DG}$	60	V
Gate-Source Voltage	$V_{GS}$	40	V
Continuous Drain Current ( $T_C=25^{\circ}\text{C}$ )	$I_D$	115	mA
Continuous Drain Current ( $T_C=100^{\circ}\text{C}$ )	$I_D$	75	mA
Continuous Source Current (Body Diode)	$I_S$	115	mA
Maximum Pulsed Drain Current	$I_{DM}$	800	mA
Maximum Pulsed Source Current	$I_{SM}$	800	mA
Power Dissipation	$P_D$	350	mW
Operating and Storage			
Junction Temperature	$T_J, T_{stg}$	-55 to +150	$^{\circ}\text{C}$
Thermal Resistance	$\Theta_{JA}$	357	$^{\circ}\text{C}/\text{W}$

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

<b>SYMBOL</b>	<b>TEST CONDITIONS</b>	<b>MIN</b>	<b>TYP</b>	<b>MAX</b>	<b>UNITS</b>
$I_{GSSF}$	$V_{GS}=20\text{V}$			100	nA
$I_{GSSR}$	$V_{GS}=-20\text{V}$			-100	nA
$I_{DSS}$	$V_{DS}=60\text{V}, V_{GS}=0$			1.0	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=60\text{V}, V_{GS}=0, T_A=125^{\circ}\text{C}$			500	$\mu\text{A}$
$I_{D(ON)}$	$V_{DS} \geq 2V_{DS(ON)}, V_{GS}=10\text{V}$	500			mA
$BV_{DSS}$	$I_D=10\mu\text{A}$	60	105		V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1.0	2.1	2.5	V
$V_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$			3.75	V
$V_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$			0.375	V
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		3.7	7.5	$\Omega$

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$r_{DS(ON)}$	$V_{GS}=10V, I_D=500mA, T_A=100^\circ C$			13.5	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0V, I_D=50mA$		6.2	7.5	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0V, I_D=50mA, T_A=100^\circ C$			13.5	$\Omega$
$g_{FS}$	$V_{DS} \geq 2V_{DS(ON)}, I_D=200mA$	80			mmhos
$C_{rss}$	$V_{DS}=25V, V_{GS}=0, f=1.0MHz$			5.0	pF
$C_{iss}$	$V_{DS}=25V, V_{GS}=0, f=1.0MHz$			50	pF
$C_{oss}$	$V_{DS}=25V, V_{GS}=0, f=1.0MHz$			25	pF
$t_{on}$	$V_{DD}=30V, I_D=10V, R_G=25\Omega, R_L=25\Omega$			20	ns
$t_{off}$	$V_{DD}=30V, I_D=10V, R_G=25\Omega, R_L=25\Omega$			20	ns
$V_{SD}$	$V_{GS}=0V, I_S=11.5mA$			-1.5	V

All dimensions in inches (mm).



LEAD CODE:

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

DATA  
SHEET

R1