

2N7002

**N-CHANNEL
ENHANCEMENT-MODE
MOSFET**



CentralTM
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 ($T_A=25^{\circ}\text{C}$)

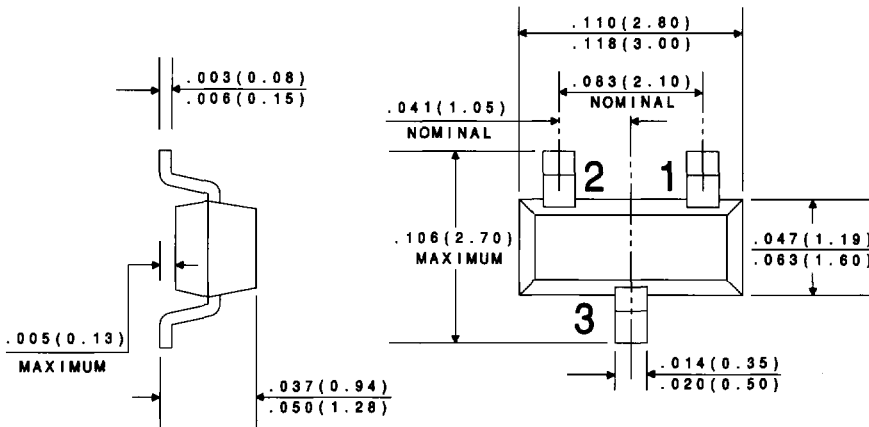
	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	60	V
Drain-Gate Voltage	V_{DG}	60	V
Gate-Source Voltage	V_{GS}	40	V
Continuous Drain Current ($T_C=25^{\circ}\text{C}$)	I_D	115	mA
Continuous Drain Current ($T_C=100^{\circ}\text{C}$)	I_D	75	mA
Continuous Source Current (Body Diode)	I_S	115	mA
Maximum Pulsed 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	Θ_{JA}	357	$^{\circ}\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
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	μA
I_{DSS}	$V_{DS}=60\text{V}, V_{GS}=0, T_A=125^{\circ}\text{C}$			500	μA
$I_{D(ON)}$	$V_{DS} \geq 2V_{DS(ON)}, V_{GS}=10\text{V}$	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	Ω

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$r_{DS(ON)}$	$V_{GS}=10V, I_D=500mA, T_A=100^\circ C$			13.5	Ω
$r_{DS(ON)}$	$V_{GS}=5.0V, I_D=50mA$		6.2	7.5	Ω
$r_{DS(ON)}$	$V_{GS}=5.0V, I_D=50mA, T_A=100^\circ C$			13.5	Ω
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