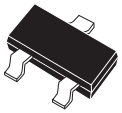
2N7002

N-CHANNEL ENHANCEMENT-MODE MOSFET



SOT-23 CASE

Central™ 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°C)

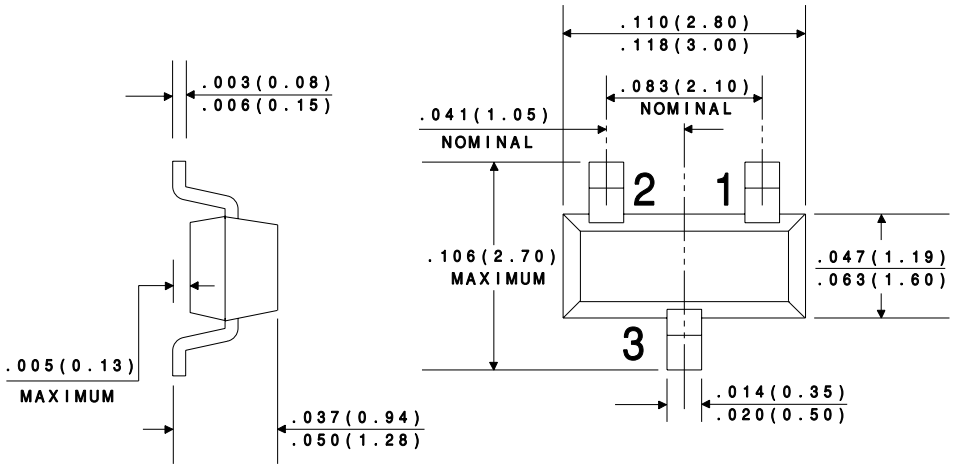
	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	60	V
Drain-Gate Voltage	V_{DG}	60	V
Gate-Source Voltage	V_{GS}	40	V
Continuous Drain Current (T_C=25°C)	I_D	115	mA
Continuous Drain Current (T_C=100°C)	I_D	75	mA
Continuous Source Current (Body Diode)	I_S	115	mA
Maximum Pulsed Drain Current	I_{DM}	800	mA
Maximum 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	°C
Thermal Resistance	Θ_{JA}	357	°C/W

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}	V_{GS}=20V			100	nA
I_{GSSR}	V_{GS}=-20V			-100	nA
I_{DSS}	V_{DS}=60V, V_{GS}=0			1.0	μA
I_{DSS}	V_{DS}=60V, V_{GS}=0, T_A=125°C			500	μA
$I_{D(ON)}$	$V_{DS} \geq 2V_{DS(ON)}$, V_{GS}=10V	500			mA
BV_{DSS}	I_D=10μA	60	105		V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.0	2.1	2.5	V
$V_{DS(ON)}$	V_{GS}=10V, I_D=500mA			3.75	V
$V_{DS(ON)}$	V_{GS}=5.0V, I_D=50mA			1.5	V
$r_{DS(ON)}$	V_{GS}=10V, I_D=500mA		3.7	7.5	Ω

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$r_{DS(ON)}$	V_{GS}=10V, I_D=500mA, T_A=100°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°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=25Ω, R_L=25Ω			20	ns
t_{off}	V_{DD}=30V, I_D=10V, R_G=25Ω, R_L=25Ω			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

R1