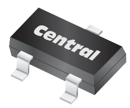
2N7002

SURFACE MOUNT SILICON N-CHANNEL ENHANCEMENT-MODE MOSFET



SOT-23 CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N7002 type is an N-Channel enhancement-mode MOSFET manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications.

MARKING CODE: 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}	-65 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}=10V, 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			0.375	V
V_{SD}	V_{GS}=0, I_S=11.5mA			1.5	V
$r_{DS(ON)}$	V_{GS}=10V, I_D=500mA		3.7	7.5	Ω
$r_{DS(ON)}$	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}=10V, I_D=200mA	80			mS

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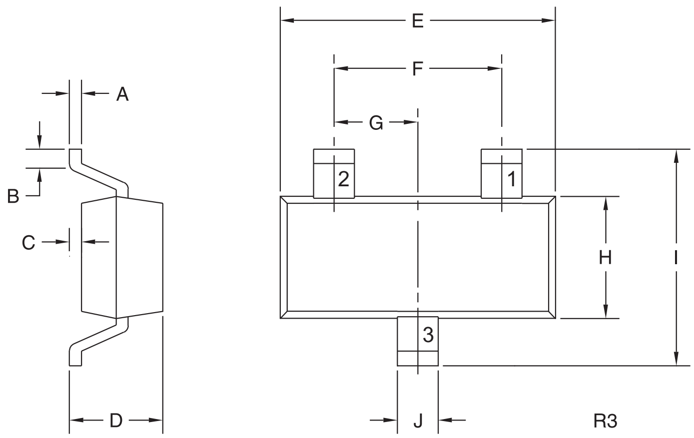
ELECTRICAL CHARACTERISTICS - Continued: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	TYP	MAX	UNITS
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
$Q_{g(tot)}$	V_{DS}=30V, V_{GS}=4.5V, I_D=100mA	0.592		nC
Q_{gs}	V_{DS}=30V, V_{GS}=4.5V, I_D=100mA	0.196		nC
Q_{gd}	V_{DS}=30V, V_{GS}=4.5V, I_D=100mA	0.148		nC
t_{on}	V_{DD}=30V, I_D=200mA, R_G=25Ω, R_L=150Ω		20	ns
t_{off}	V_{DD}=30V, I_D=200mA, R_G=25Ω, R_L=150Ω		20	ns

SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:
1) Gate
2) Source
3) Drain

MARKING CODE: 702

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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

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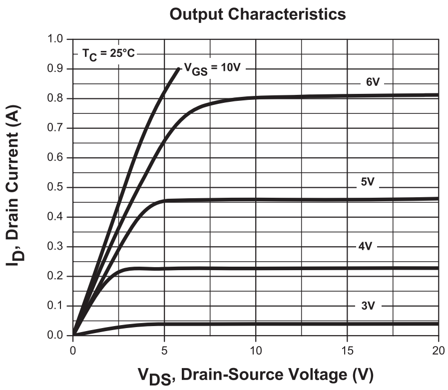
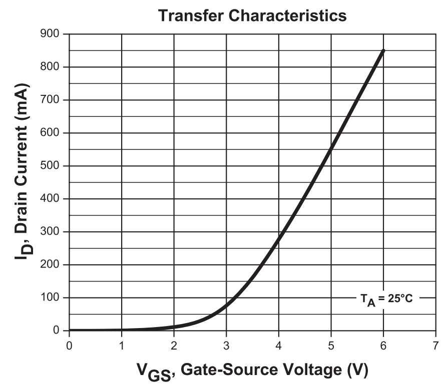
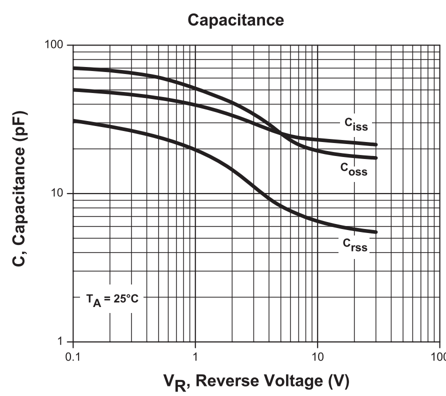
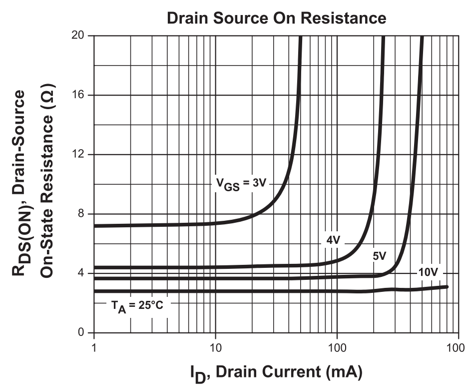
SURFACE MOUNT SILICON
N-CHANNEL
ENHANCEMENT-MODE
MOSFET

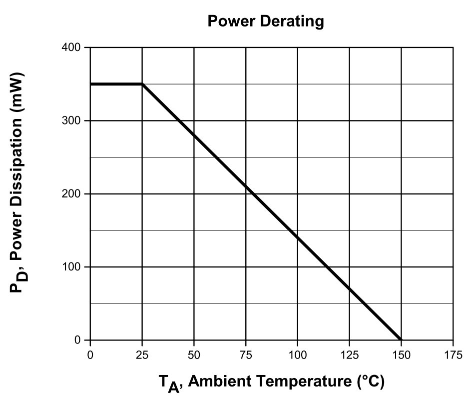
TYPICAL ELECTRICAL CHARACTERISTICS











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OUTSTANDING SUPPORT AND SUPERIOR SERVICES

PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centralsemi.com

Worldwide Field Representatives:
www.centralsemi.com/wwreps

Worldwide Distributors:
www.centralsemi.com/wwdistributors