

CMPDM7002A  
CMPDM7002AG\*

SURFACE MOUNT SILICON  
N-CHANNEL  
ENHANCEMENT-MODE  
MOSFET



SOT-23 CASE

\* Device is **Halogen Free** by design



www.centrasemi.com

#### DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPDM7002A and CMPDM7002AG are special versions of the 2N7002 enhancement-mode N-Channel MOSFET manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. These special devices offer low  $r_{DS(ON)}$  and low  $V_{DS(ON)}$ .

MARKING CODES: CMPDM7002A: C702A  
CMPDM7002AG\*: 702G

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

Drain-Source Voltage  
Drain-Gate Voltage  
Gate-Source Voltage  
Continuous Drain Current  
Continuous Source Current (Body Diode)  
Maximum Pulsed Drain Current  
Maximum Pulsed Source Current  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

#### SYMBOL

$V_{DS}$  60  
 $V_{DG}$  60  
 $V_{GS}$  40  
 $I_D$  280  
 $I_S$  280  
 $I_{DM}$  1.5  
 $I_{SM}$  1.5  
 $P_D$  350  
 $T_J, T_{stg}$  -65 to +150  
 $\theta_{JA}$  357

#### UNITS

V  
V  
V  
mA  
mA  
A  
A  
mW  
 $^\circ\text{C}$   
 $^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=20\text{V}, V_{DS}=0$		100	nA
$I_{DSS}$	$V_{DS}=60\text{V}, V_{GS}=0$		1.0	$\mu\text{A}$
$I_{DSS}$	$V_{DS}=60\text{V}, V_{GS}=0, T_J=125^\circ\text{C}$		500	$\mu\text{A}$
$I_{D(ON)}$	$V_{GS}=10\text{V}, V_{DS}=10\text{V}$	500		mA
$BV_{DSS}$	$V_{GS}=0, I_D=10\mu\text{A}$	60		V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1.0	2.5	V
$V_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		1.0	V
$V_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$		0.15	V
$V_{SD}$	$V_{GS}=0, I_S=400\text{mA}$		1.2	V
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$		2.0	$\Omega$
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}, T_J=125^\circ\text{C}$		3.5	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}$		3.0	$\Omega$
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=50\text{mA}, T_J=125^\circ\text{C}$		5.0	$\Omega$
gFS	$V_{DS}=10\text{V}, I_D=200\text{mA}$	80		mS
$C_{rss}$	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$		5.0	pF
$C_{iss}$	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$		50	pF
$C_{oss}$	$V_{DS}=25\text{V}, V_{GS}=0, f=1.0\text{MHz}$		25	pF

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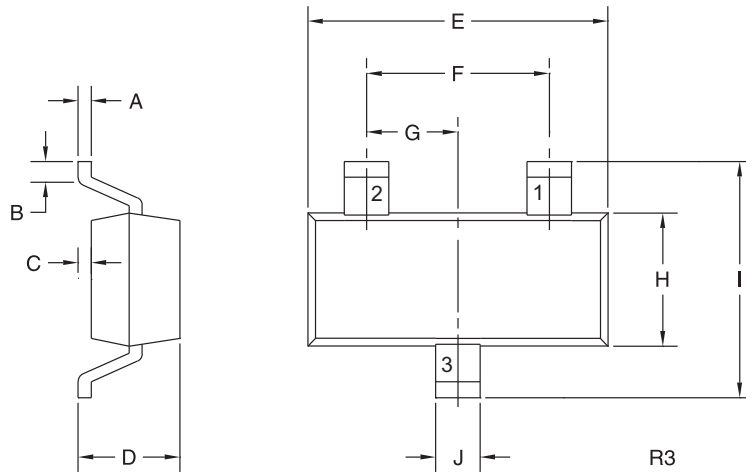
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	TYP	MAX	UNITS
$Q_{g(\text{tot})}$	$V_{DS}=30\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=100\text{mA}$	0.592		nC
$Q_{gs}$	$V_{DS}=30\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=100\text{mA}$	0.196		nC
$Q_{gd}$	$V_{DS}=30\text{V}$ , $V_{GS}=4.5\text{V}$ , $I_D=100\text{mA}$	0.148		nC
$t_{\text{on}}$ , $t_{\text{off}}$	$V_{DD}=30\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=200\text{mA}$ , $R_G=25\Omega$ , $R_L=150\Omega$		20	ns

**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

- 1) Gate
- 2) Source
- 3) Drain

**MARKING CODES:**

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DIMENSIONS				
SYMBOL	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)

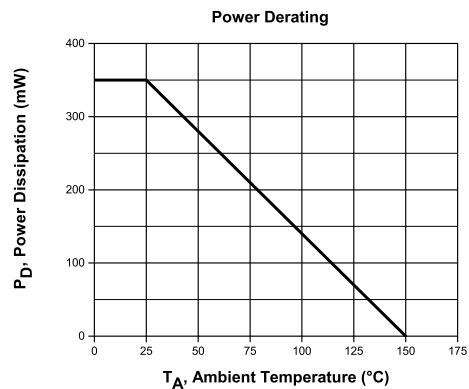
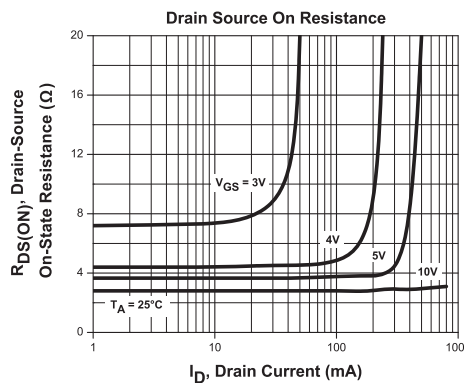
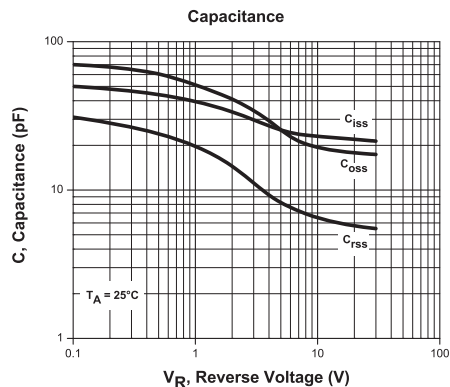
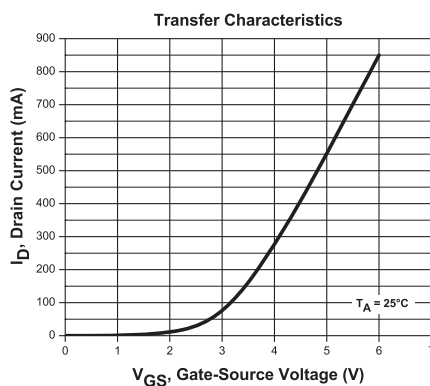
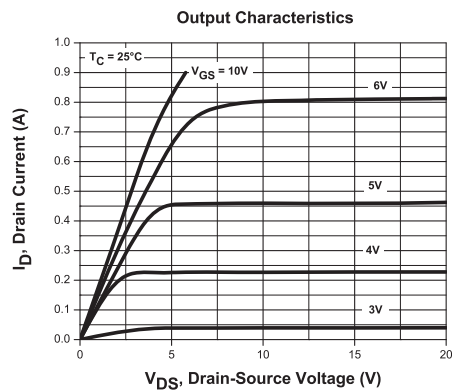
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## TYPICAL ELECTRICAL CHARACTERISTICS



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#### **SERVICES**

- Bonded Inventory
- Custom Electrical Screening
- Custom Electrical Characteristic Curves
- SPICE Models
- Custom Packaging
- Package Base Options
- Custom Device Development/ Multi Discrete Modules (MDM™)
- Bare Die Available for Hybrid Applications

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