

CMLDM7003E
CMLDM7003JE

**ENHANCED SPECIFICATION
SURFACE MOUNT SILICON
DUAL N-CHANNEL
ENHANCEMENT-MODE
MOSFETS**



SOT-563 CASE



www.centra-semi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLDM7003E and CMLDM7003JE are dual N-Channel enhancement-mode MOSFETs, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. The CMLDM7003E utilizes the USA pinout configuration, while the CMLDM7003JE utilizes the Japanese pinout configuration. These special dual transistor devices offer low drain-source on state resistance ($r_{DS(ON)}$) and ESD protection up to 2kV.

**MARKING CODES: CMLDM7003E: C73
CMLDM7003JE: C7J**

FEATURES

- ESD protected up to 2kV

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

Drain-Source Voltage
Drain-Gate Voltage
Gate-Source Voltage
Continuous Drain Current
Maximum Pulsed Drain Current
Power Dissipation (Note 1)
Power Dissipation (Note 2)
Power Dissipation (Note 3)
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL

V_{DS} 50
 V_{DG} 50
 V_{GS} 12
 I_D 280
 I_{DM} 1.5
 P_D 350
 P_D 300
 P_D 150
 T_J, T_{stg} -65 to +150
 Θ_{JA} 357

UNITS

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

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
♦ I_{GSSF}, I_{GSSR}	$V_{GS}=5.0V$			50	nA
♦ I_{GSSF}, I_{GSSR}	$V_{GS}=10V$			0.5	μA
♦ I_{GSSF}, I_{GSSR}	$V_{GS}=12V$			1.0	μA
I_{DSS}	$V_{DS}=50V, V_{GS}=0$			50	nA
BV_{DSS}	$V_{GS}=0, I_D=10\mu\text{A}$	50			V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.49		1.2	V
V_{SD}	$V_{GS}=0, I_S=115\text{mA}$			1.4	V
♦ $r_{DS(ON)}$	$V_{GS}=1.8V, I_D=50\text{mA}$		1.6	2.3	Ω
♦ $r_{DS(ON)}$	$V_{GS}=2.5V, I_D=50\text{mA}$		1.3	1.9	Ω
♦ $r_{DS(ON)}$	$V_{GS}=5.0V, I_D=50\text{mA}$		1.1	1.5	Ω
g_{FS}	$V_{DS}=10V, I_D=200\text{mA}$	200			mS
C_{rss}	$V_{DS}=25V, V_{GS}=0, f=1.0\text{MHz}$			5.0	pF
C_{iss}	$V_{DS}=25V, V_{GS}=0, f=1.0\text{MHz}$			60	pF
C_{oss}	$V_{DS}=25V, V_{GS}=0, f=1.0\text{MHz}$			25	pF

♦ Enhanced specification

Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 4.0mm^2
(2) FR-4 Epoxy PC Board with copper mounting pad area of 4.0mm^2
(3) FR-4 Epoxy PC Board with copper mounting pad area of 1.4mm^2

R6 (28-September 2021)

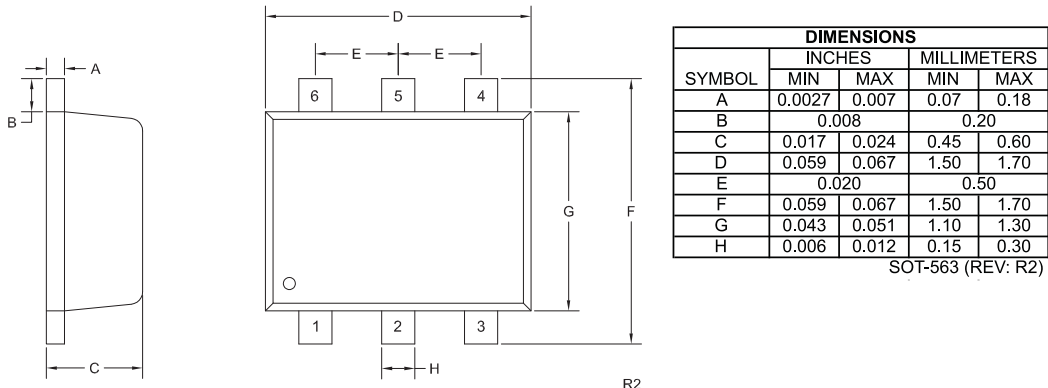
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ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

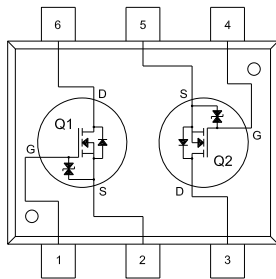
SYMBOL	TEST CONDITIONS	TYP	MAX	UNITS
$Q_{g(\text{tot})}$	$V_{DS}=25\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=100\text{mA}$	0.764		nC
Q_{gs}	$V_{DS}=25\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=100\text{mA}$	0.148		nC
Q_{gd}	$V_{DS}=25\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=100\text{mA}$	0.156		nC

SOT-563 CASE - MECHANICAL OUTLINE



PIN CONFIGURATIONS

CMLDM7003E (USA Pinout)

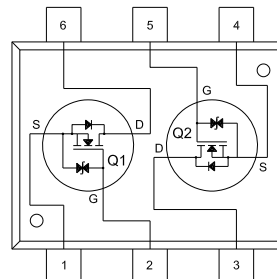


LEAD CODE:

- 1) Gate Q1
- 2) Source Q1
- 3) Drain Q2
- 4) Gate Q2
- 5) Source Q2
- 6) Drain Q1

MARKING CODE: C73

CMLDM7003JE (Japanese Pinout)



LEAD CODE:

- 1) Source Q1
- 2) Gate Q1
- 3) Drain Q2
- 4) Source Q2
- 5) Gate Q2
- 6) Drain Q1

MARKING CODE: C7J

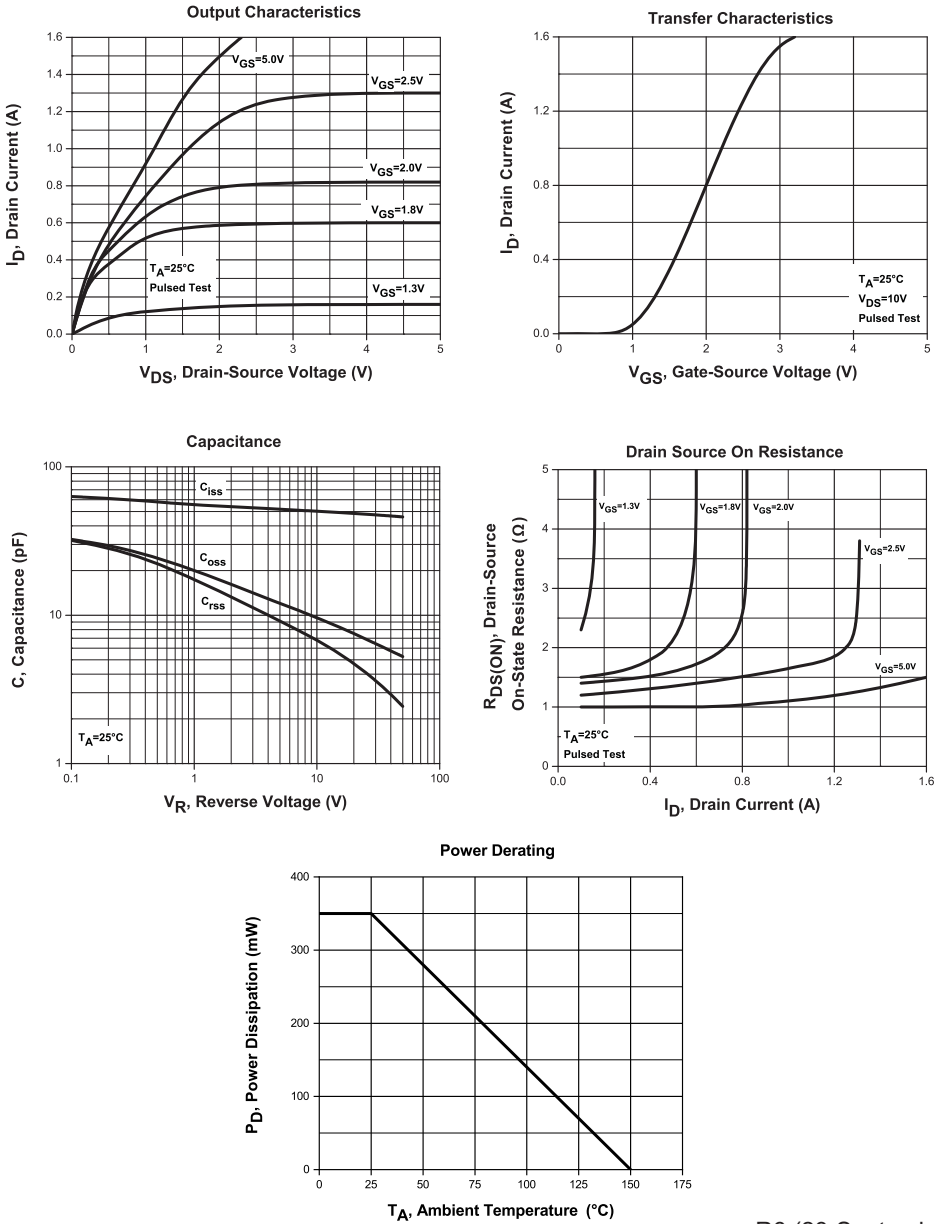
R6 (28-September 2021)

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TYPICAL ELECTRICAL CHARACTERISTICS



R6 (28-September 2021)

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

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