CMLDM7003E
CMLDM7003JE

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

ENHANCED E SPECIFICATION

SOT-563 CASE

Central Semiconductor Corp.

www.centralsemi.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°C)	**SYMBOL**		**UNITS**
Drain-Source Voltage	V_{DS}	50	V
Drain-Gate Voltage	V_{DG}	50	V
Gate-Source Voltage	V_{GS}	12	V
Continuous Drain Current	I_D	280	mA
Maximum Pulsed Drain Current	I_{DM}	1.5	A
Power Dissipation (Note 1)	P_D	350	mW
Power Dissipation (Note 2)	P_D	300	mW
Power Dissipation (Note 3)	P_D	150	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS PER TRANSISTOR: (T_A=25°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=10µA	50			V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250µA	0.49		1.2	V
V_{SD}	V_{GS}=0, I_S=115mA			1.4	V
♦ **$r_{DS(ON)}$**	**V_{GS}=1.8V, I_D=50mA**		**1.6**	**2.3**	Ω
♦ **$r_{DS(ON)}$**	**V_{GS}=2.5V, I_D=50mA**		**1.3**	**1.9**	Ω
♦ **$r_{DS(ON)}$**	**V_{GS}=5.0V, I_D=50mA**		**1.1**	**1.5**	Ω
g_{FS}	V_{DS}=10V, I_D=200mA	200			mS
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			60	pF
C_{oss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			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

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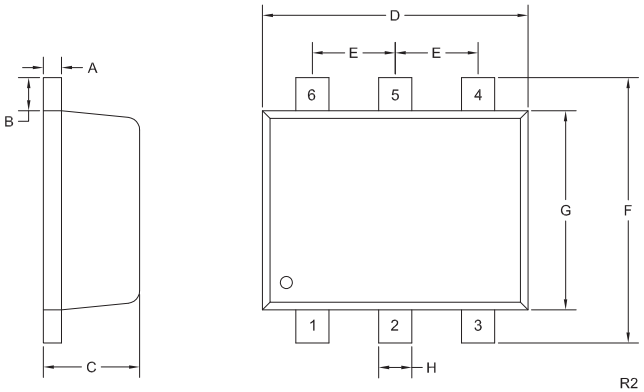
ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: (T_A=25°C unless otherwise noted)

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

SOT-563 CASE - MECHANICAL OUTLINE

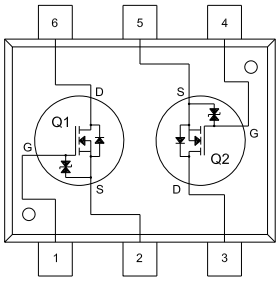


DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.0027	0.007	0.07	0.18
B	0.008		0.20	
C	0.017	0.024	0.45	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.059	0.067	1.50	1.70
G	0.043	0.051	1.10	1.30
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R2)

PIN CONFIGURATIONS

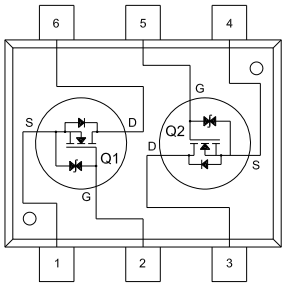
CMLDM7003E (USA Pinout)



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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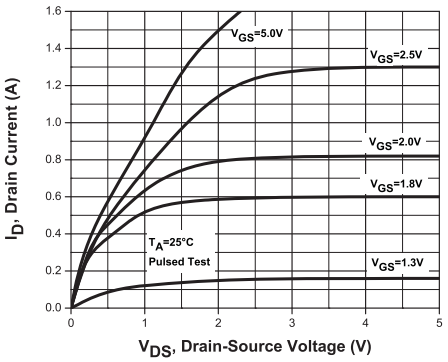
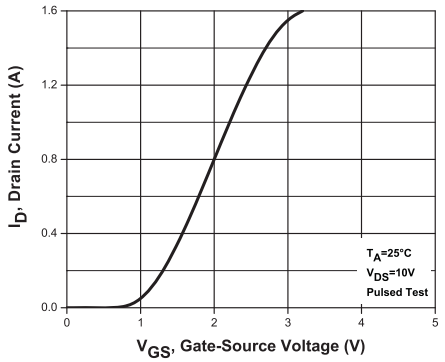
TYPICAL ELECTRICAL CHARACTERISTICS

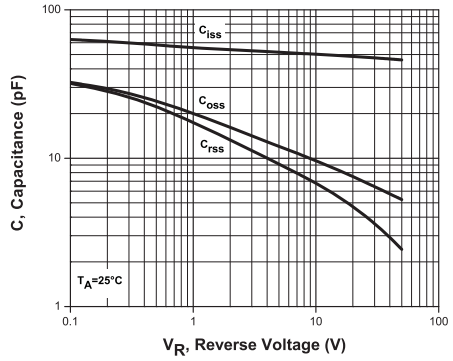
Output Characteristics



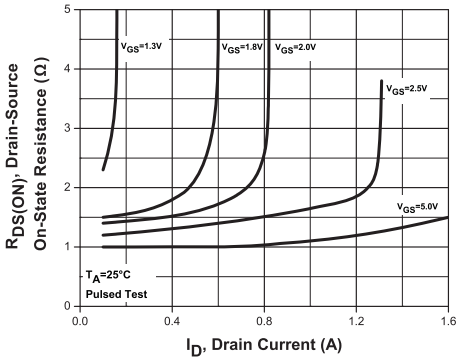
Transfer Characteristics



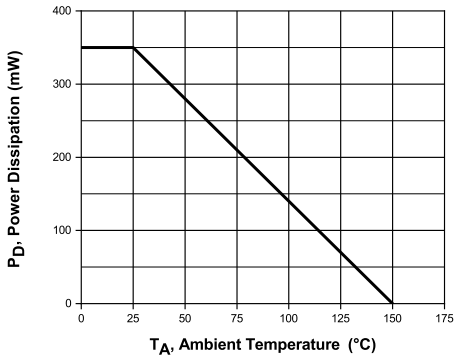
Capacitance



Drain Source On Resistance



Power Derating



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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