CMLDM7003
CMLDM7003J

SURFACE MOUNT PICOmini™
DUAL N-CHANNEL
ENHANCEMENT-MODE
SILICON MOSFET

PICOmini™

SOT-563 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLDM7003 and CMLDM7003J are Enhancement-mode N-Channel Field Effect Transistors, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. The CMLDM7003 utilizes the USA pinout configuration, while the CMLDM7003J utilizes the Japanese pinout configuration. These special Dual Transistor devices offer low drain-source on state resistance ($r_{DS(ON)}$).

MARKING CODE: CMLDM7003: C30
CMLDM7003J: C3J

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}	40	V
Continuous Drain Current	I_D	300	mA
Maximum Pulsed Drain Current	I_{DM}	1.2	A
Power Dissipation	P_D	350	mW (Note 1)
Power Dissipation	P_D	300	mW (Note 2)
Power Dissipation	P_D	150	mW (Note 3)
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}=5V			50	nA
I_{GSSF}, I_{GSSR}	V_{GS}=10V			500	nA
I_{GSSF}, I_{GSSR}	V_{GS}=12V			1.0	μA
I_{DSS}	V_{DS}=50V, V_{GS}=0V			50	nA
BV_{DSS}	V_{GS}=0V, I_D=10μA	50			V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.5		1.2	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			mmhos
C_{rss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			TBD	pF
C_{iss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			TBD	pF
C_{oss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			TBD	pF
V_{SD}	V_{GS}=0V, I_S=115mA			1.4	V

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

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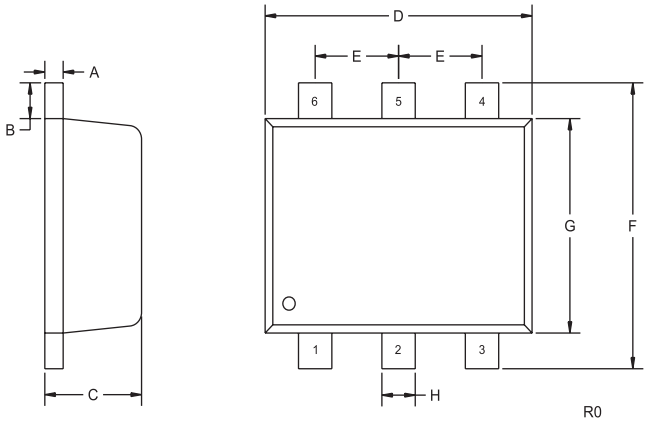
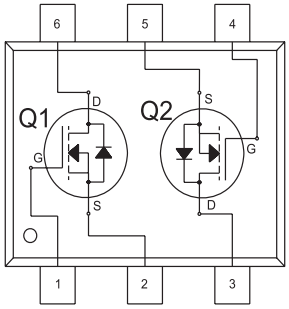
SOT-563 CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.004	0.007	0.10	0.18
B	0.008		0.20	
C	0.022	0.024	0.56	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.061	0.067	1.55	1.70
G	0.047		1.20	
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R0)

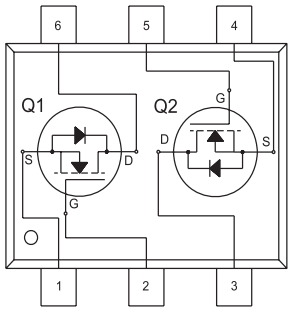
CMLDM7003 (USA Pinout)



LEAD CODE:
1) GATE Q1
2) SOURCE Q1
3) DRAIN Q2
4) GATE Q2
5) SOURCE Q2
6) DRAIN Q1

MARKING CODE: C30

CMLDM7003J (Japanese Pinout)



LEAD CODE:
1) SOURCE Q1
2) GATE Q1
3) DRAIN Q2
4) SOURCE Q2
5) GATE Q2
6) DRAIN Q1

MARKING CODE: C3J

R0 (26-June 2006)