

CEDM7001VL

**SURFACE MOUNT SILICON
N-CHANNEL
ENHANCEMENT-MODE
MOSFET**



www.centrasemi.com



Top View Bottom View

SOT-883VL CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CEDM7001VL is an N-Channel Enhancement-mode MOSFET packaged in the very low profile SOT-883VL case. The device is designed for space constrained high speed amplifier and driver applications where package height is a critical design element. This MOSFET offers low $r_{DS(ON)}$ and low gate charge.

MARKING CODE: 7

COMPLEMENTARY P-CHANNEL: CEDM8001VL

FEATURES:

- 100mW Power Dissipation
- 0.32mm very low package profile
- Low $r_{DS(ON)}$
- Low threshold voltage
- Logic level compatible
- Small leadless surface mount package

APPLICATIONS:

- Load/Power switches
- DC-DC converters
- Battery powered portable equipment

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

Drain-Source Voltage
 Gate-Source Voltage
 Continuous Drain Current (Steady State)
 Peak Drain Current, $t_p=10\mu\text{s}$
 Power Dissipation
 Operating and Storage Junction Temperature

SYMBOL

V_{DS} 20
 V_{GS} 10
 I_D 100
 I_{DM} 200
 P_D 100
 T_J, T_{stg} -65 to +150

UNITS

V
 V
 mA
 mA
 mW
 $^\circ\text{C}$

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

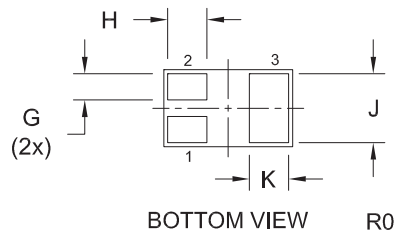
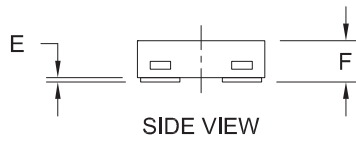
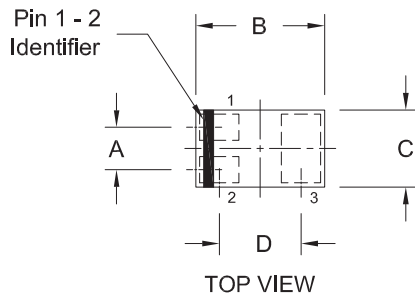
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}, I_{GSSR}	$V_{GS}=10\text{V}, V_{DS}=0$			1.0	μA
I_{DSS}	$V_{DS}=20\text{V}, V_{GS}=0$			1.0	μA
BV_{DSS}	$V_{GS}=0, I_D=100\mu\text{A}$	20			V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.6		0.9	V
$r_{DS(ON)}$	$V_{GS}=4.0\text{V}, I_D=10\text{mA}$		0.9	3.0	Ω
$r_{DS(ON)}$	$V_{GS}=2.5\text{V}, I_D=10\text{mA}$		1.3	4.0	Ω
$r_{DS(ON)}$	$V_{GS}=1.5\text{V}, I_D=1.0\text{mA}$			15	Ω
g_{FS}	$V_{DS}=10\text{V}, I_D=100\text{mA}$	100			mS
C_{rss}	$V_{DS}=3.0\text{V}, V_{GS}=0, f=1.0\text{MHz}$		4.0		pF
C_{iss}	$V_{DS}=3.0\text{V}, V_{GS}=0, f=1.0\text{MHz}$		9.0		pF
C_{oss}	$V_{DS}=3.0\text{V}, V_{GS}=0, f=1.0\text{MHz}$		9.5		pF
$Q_{g(tot)}$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.566		nC
Q_{gs}	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.16		nC
Q_{gd}	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.08		nC
t_{on}	$V_{DD}=3.0\text{V}, V_{GS}=2.5\text{V}, I_D=10\text{mA}$		50		ns
t_{off}	$V_{DD}=3.0\text{V}, V_{GS}=2.5\text{V}, I_D=10\text{mA}$		75		ns

R2 (9-September 2014)

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SOT-883VL CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.014		0.35	
B	0.037	0.041	0.95	1.05
C	0.022	0.026	0.55	0.65
D	0.026		0.65	
E	0.000	0.002	0.00	0.05
F	0.012	0.013	0.30	0.32
G	0.004	0.008	0.10	0.20
H	0.008	0.012	0.20	0.30
J	0.018	0.022	0.45	0.55
K	0.008	0.012	0.20	0.30

SOT-883VL (REV:R0)

LEAD CODE:

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

MARKING CODE: 7

Package Type Options (all dimensions are maximum - in mm)

Package	Length	Width	Height	P _D (mW)	Central Item Number
SOT-883VL	1.05	0.65	0.32	100	CEDM7001VL
SOT-883L	1.05	0.65	0.40	100	CEDM7001
SOT-953	1.05	1.05	0.50	250	CMNDM7001
SOT-523	1.70	1.70	0.78	250	CMUDM7001

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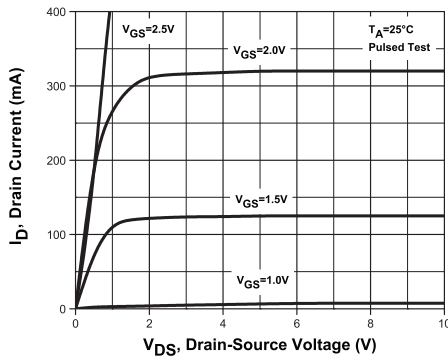
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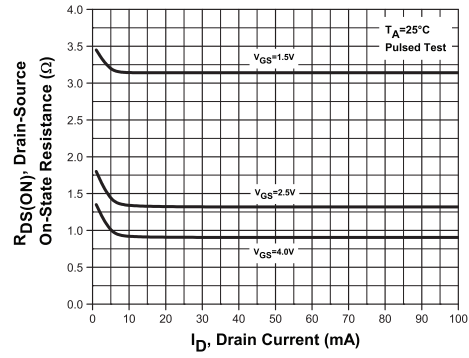


TYPICAL ELECTRICAL CHARACTERISTICS

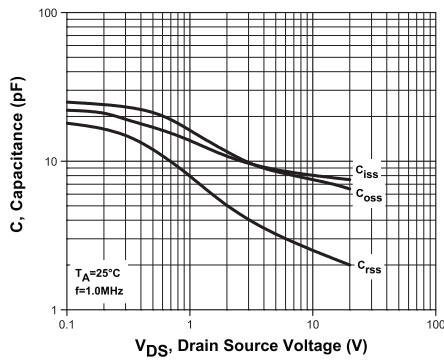
Output Characteristics



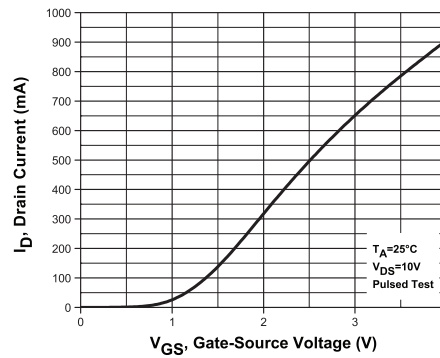
Drain Source On Resistance



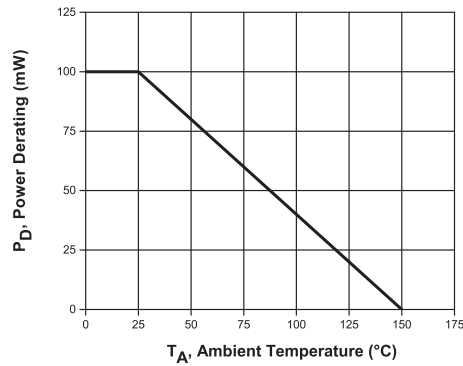
Capacitance



Transfer Characteristics



Power Derating



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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

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