CEDM7004

SURFACE MOUNT SILICON N-CHANNEL ENHANCEMENT-MODE MOSFET

Top View   Bottom View

SOT-883L CASE

Central™
Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CEDM7004 is an N-Channel Enhancement-mode MOSFET, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. This MOSFET offers Low $r_{DS(on)}$ and Low Threshold Voltage.

MARKING CODE: S

COMPLEMENTARY P-CHANNEL: CEDM8004

FEATURES:
• ESD protection up to 2kV
• 0.4mm low package profile
• Low $r_{DS(ON)}$
• Low threshold voltage
• Logic level compatible
• Small leadless surface mount package

APPLICATIONS:
• Load/Power switches
• Power supply converter circuits
• Battery powered portable devices

MAXIMUM RATING: (T_A=25°C)

	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	8.0	V
Continuous Drain Current (T_L=25°C)	I_D	1.78	A
Peak Drain Current, tp≤10µs (T_L=25°C)	I_{DM}	3.56	A
Continuous Source Current (T_L=25°C)	I_S	1.78	A
Peak Source Current, tp≤10µs (T_L=25°C)	I_{SM}	3.56	A
Power Dissipation	P_D	100	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}, I_{GSSR}	V_{GS}=8.0V, V_{DS}=0			3.0	µA
I_{DSS}	V_{DS}=30V, V_{GS}=0			1.0	µA
BV_{DSS}	V_{GS}=0, I_D=10µA	30			V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250µA	0.5		1.0	V
V_{SD}	V_{GS}=0, I_S=400mA	0.5		1.1	V
$r_{DS(ON)}$	V_{GS}=4.5V, I_D=200mA		280	460	mΩ
$r_{DS(ON)}$	V_{GS}=2.5V, I_D=100mA		390	560	mΩ
$r_{DS(ON)}$	V_{GS}=1.8V, I_D=75mA		550	730	mΩ
$Q_{g(tot)}$	V_{DS}=15V, V_{GS}=4.5V, I_D=1.0A		0.792		nC
Q_{gs}	V_{DS}=15V, V_{GS}=4.5V, I_D=1.0A		0.15		nC
Q_{gd}	V_{DS}=15V, V_{GS}=4.5V, I_D=1.0A		0.23		nC
g_{FS}	V_{DS} =10V, I_D=100mA	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		43		pF
C_{oss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz		8.0		pF
t_{on}	V_{DS}=5.0V, V_{GS}=4.0V, I_D=75mA, R_G=10Ω		20		ns
t_{off}	V_{DS}=5.0V, V_{GS}=4.0V, I_D=75mA, R_G=10Ω		75		ns

CEDM7004

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

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SOT-883L CASE - MECHANICAL OUTLINE

Pin 1 - 2 Identifier

B

1

A   C

2   3

D

TOP VIEW

E   F

SIDE VIEW

H

2   3

G   J
(2x)
1

K

BOTTOM VIEW   R2
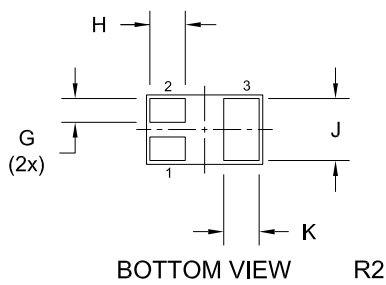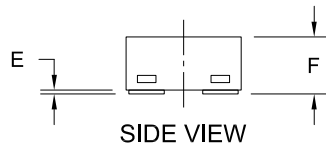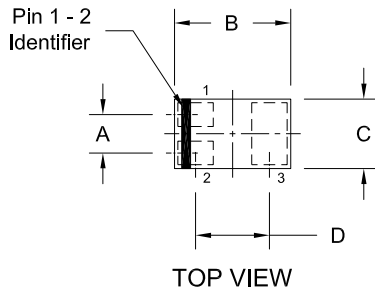
DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.014		0.35	
B	0.037	0.041	0.95	1.05
C	0.022	0.026	0.55	0.65
D	0.026		0.65	
E	0.000	0.002	0.00	0.05
F	0.012	0.016	0.30	0.40
G	0.005	0.007	0.13	0.18
H	0.008	0.012	0.20	0.30
J	0.018	0.022	0.45	0.55
K	0.008	0.012	0.20	0.30

SOT-883L (REV:R2)

**PIN CONFIGURATION
(Bottom View)**

2   3

S
G
D

1
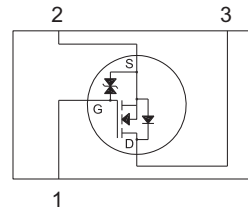
LEAD CODE:
1) Gate
2) Source
3) Drain

MARKING CODE: S

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

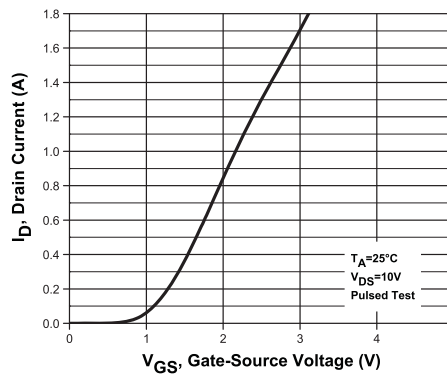| Package	Length	Width	Height	P_D (mW)	Central Item Number
SOT-883L	**1.05**	**0.65**	**0.40**	**100**	**CEDM7004**
SOT-883VL	1.05	0.65	0.32	100	CEDM7004VL
SOT-523	1.70	1.70	0.78	250	CMUDM7004

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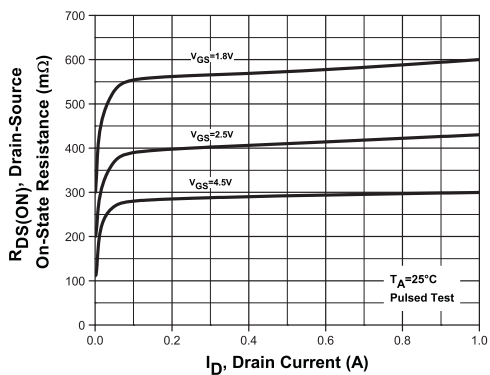## TYPICAL ELECTRICAL CHARACTERISTICS

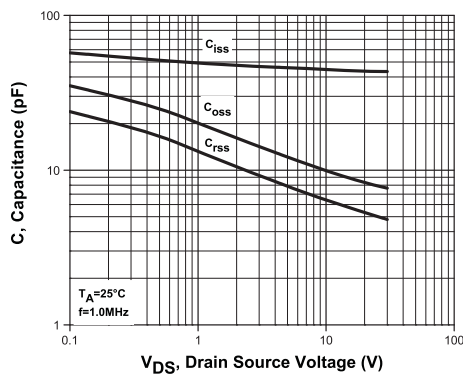**Output Characteristics**
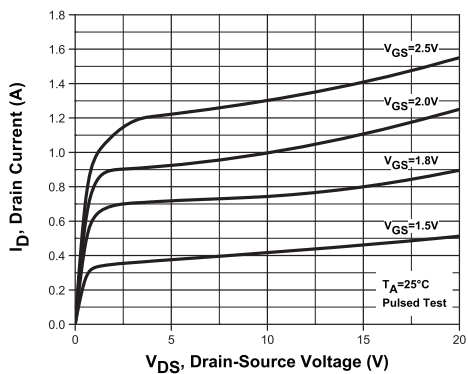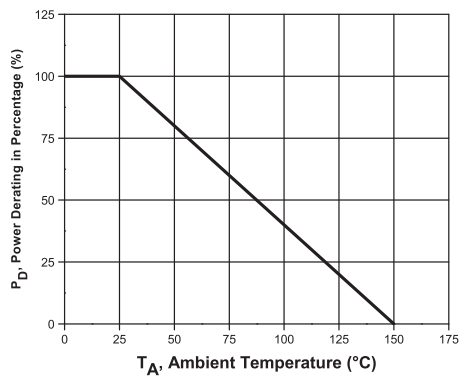

Transfer Characteristics

Drain Source On Resistance

Capacitance

Normalized Power Derating

R5 (29-September 2014)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES

Central ™
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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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