

CWDM305N
SURFACE MOUNT SILICON
N-CHANNEL
ENHANCEMENT-MODE
MOSFET



www.centrasemi.com



SOIC-8 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CWDM305N is a high current N-channel enhancement-mode silicon MOSFET designed for high speed pulsed amplifier and driver applications. This energy efficient MOSFET offers beneficially low $r_{DS(ON)}$, low gate charge, and low threshold voltage.

MARKING CODE: C305N

APPLICATIONS:

- Load/Power switches
- DC-DC converter circuits
- Power management

FEATURES:

- Low $r_{DS(ON)}$
- High current
- Low gate charge

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

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

SYMBOL

SYMBOL		UNITS
V_{DS}	30	V
V_{GS}	20	V
I_D	5.8	A
I_{DM}	23.2	A
P_D	2.0	W
T_J, T_{stg}	-55 to +150	$^\circ\text{C}$
θ_{JA}	62.5	$^\circ\text{C/W}$

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

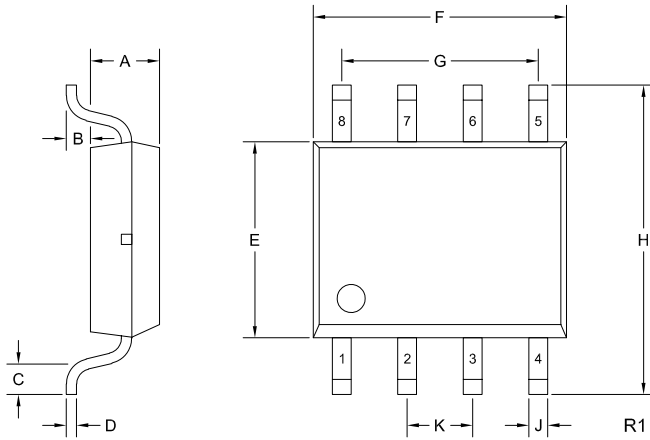
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}, I_{GSSR}	$V_{GS}=20\text{V}, V_{DS}=0$			100	nA
I_{DSS}	$V_{DS}=30\text{V}, V_{GS}=0$			1.0	μA
BV_{DSS}	$V_{GS}=0, I_D=250\mu\text{A}$	30			V
$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu\text{A}$	1.0		3.0	V
$r_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=2.9\text{A}$		0.024	0.030	Ω
$r_{DS(ON)}$	$V_{GS}=5.0\text{V}, I_D=2.9\text{A}$		0.028		Ω
g_{FS}	$V_{DS}=5.0\text{V}, I_D=5.8\text{A}$		12		S
C_{rss}	$V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$		50	58	pF
C_{iss}	$V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$		500	560	pF
C_{oss}	$V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$		52	90	pF
$Q_g(tot)$	$V_{DD}=15\text{V}, V_{GS}=5.0\text{V}, I_D=5.8\text{A}$		4.2	6.3	nC
Q_{gs}	$V_{DD}=15\text{V}, V_{GS}=5.0\text{V}, I_D=5.8\text{A}$		0.9	1.4	nC
Q_{gd}	$V_{DD}=15\text{V}, V_{GS}=5.0\text{V}, I_D=5.8\text{A}$		1.4	2.1	nC
t_{on}	$V_{DD}=15\text{V}, I_D=5.8\text{A}, R_G=10\Omega$		6.5		ns
t_{off}	$V_{DD}=15\text{V}, I_D=5.8\text{A}, R_G=10\Omega$		8.5		ns

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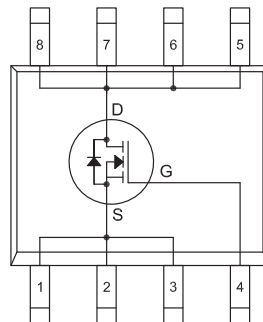
SOIC-8 CASE - MECHANICAL OUTLINE



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.055	0.061	1.392	1.554
B	0.004	0.009	0.100	0.224
C	0.016	0.035	0.40	0.90
D	0.007	0.010	0.19	0.25
E	0.145	0.157	3.80	4.00
F	0.189	0.198	4.80	5.00
G	0.150		3.81	
H	0.228	0.244	5.80	6.20
J	0.013	0.020	0.33	0.51
K	0.050		1.27	

SOIC-8 (REV: R1)

PIN CONFIGURATION



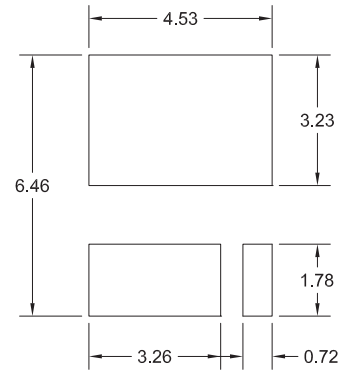
LEAD CODE:

- 1) Source 5) Drain
- 2) Source 6) Drain
- 3) Source 7) Drain
- 4) Gate 8) Drain

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SUGGESTED MOUNTING PADS

(Dimensions in mm)



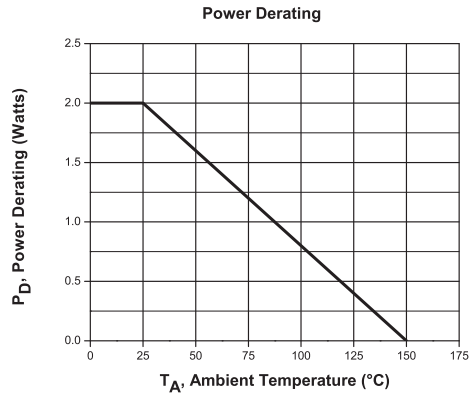
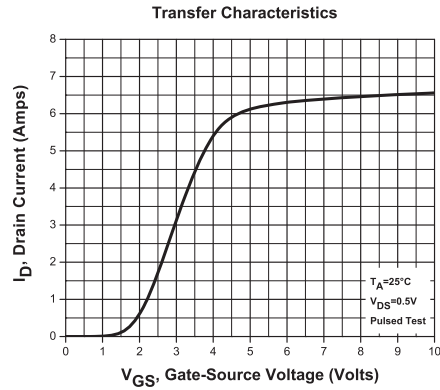
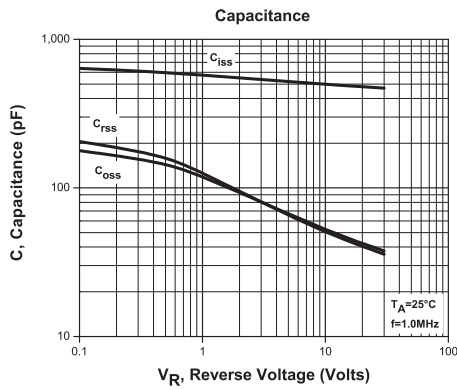
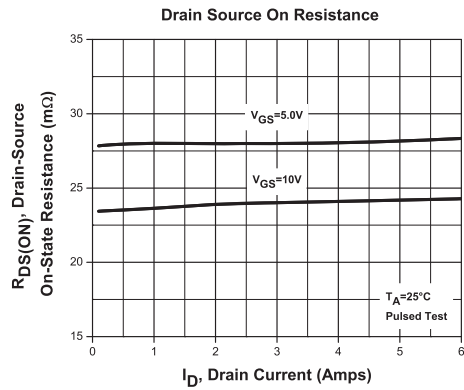
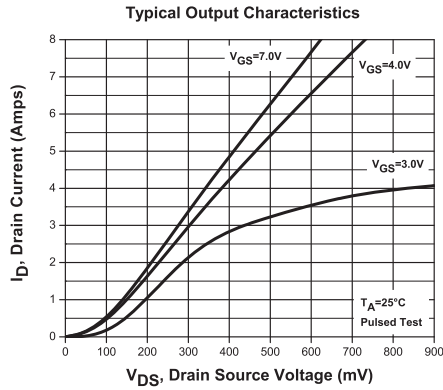
R0

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TYPICAL ELECTRICAL CHARACTERISTICS



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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

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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