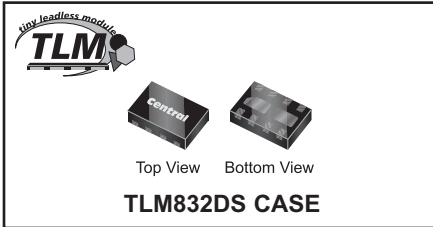


**CTLDM303N-M832DS**

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



www.centrasemi.com



**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CTLDM303N-M832DS is a dual enhancement-mode N-Channel 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: C330**

**APPLICATIONS:**

- DC-DC converters
- Drive circuits
- Power management

**FEATURES:**

- Low  $r_{DS(ON)}$  (0.078Ω MAX @  $V_{GS}=2.5V$ )
- High current ( $I_D=3.6A$ )
- Low gate charge

**MAXIMUM RATINGS:** ( $T_A=25^\circ C$ )

Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	12	V
Continuous Drain Current (Steady State)	$I_D$	3.6	A
Maximum Pulsed Drain Current, $t_p=10\mu s$	$I_{DM}$	14.4	A
Power Dissipation	$P_D$	1.65	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ C$
Thermal Resistance (Note 1)	$\theta_{JA}$	76	$^\circ C/W$

**SYMBOL**

SYMBOL	UNITS
$V_{DS}$	V
$V_{GS}$	V
$I_D$	A
$I_{DM}$	A
$P_D$	W
$T_J, T_{stg}$	$^\circ C$
$\theta_{JA}$	$^\circ C/W$

**ELECTRICAL CHARACTERISTICS PER TRANSISTOR:** ( $T_A=25^\circ C$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{GSSF}, I_{GSSR}$	$V_{GS}=12V, V_{DS}=0$			10	$\mu A$
$I_{DSS}$	$V_{DS}=20V, V_{GS}=0$			1.0	$\mu A$
$BV_{DSS}$	$V_{GS}=0, I_D=250\mu A$	30			V
$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	0.6		1.2	V
$r_{DS(ON)}$	$V_{GS}=4.5V, I_D=1.8A$		0.033	0.04	$\Omega$
$r_{DS(ON)}$	$V_{GS}=2.5V, I_D=1.8A$		0.042	0.078	$\Omega$
$Q_g(tot)$	$V_{DD}=10V, V_{GS}=4.5V, I_D=3.6A$		5.0	13	nC
$Q_{gs}$	$V_{DD}=10V, V_{GS}=4.5V, I_D=3.6A$		0.9	1.4	nC
$Q_{gd}$	$V_{DD}=10V, V_{GS}=4.5V, I_D=3.6A$		1.0	2.7	nC
$g_{FS}$	$V_{DS}=5.0V, I_D=3.6A$		11.8		S
$C_{rSS}$	$V_{DS}=10V, V_{GS}=0, f=1.0MHz$		55		pF
$C_{iSS}$	$V_{DS}=10V, V_{GS}=0, f=1.0MHz$		590		pF
$C_{OSS}$	$V_{DS}=10V, V_{GS}=0, f=1.0MHz$		50		pF
$t_{on}$	$V_{DD}=10V, V_{GS}=4.0V, I_D=3.6A, R_G=10\Omega$		15		ns
$t_{off}$	$V_{DD}=10V, V_{GS}=4.0V, I_D=3.6A, R_G=10\Omega$		29		ns

Notes: (1) FR-4 Epoxy PCB with copper mounting pad area of 54mm<sup>2</sup>

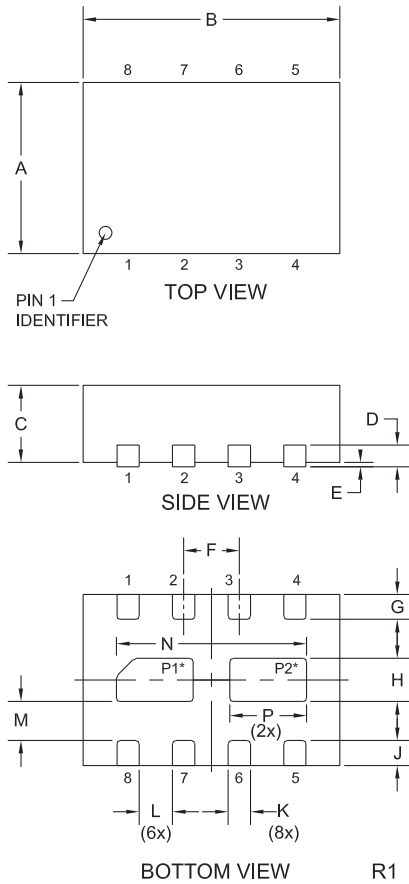
R2 (8-October 2012)

CTLDM303N-M832DS

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



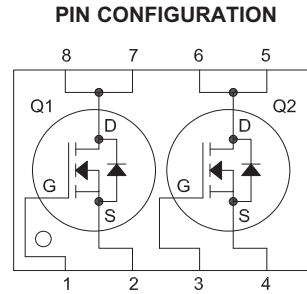
**TLM832DS CASE - MECHANICAL OUTLINE**



\* Exposed pad P1 common to pins 7 and 8  
Exposed pad P2 common to pins 5 and 6

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.077	0.081	1.95	2.05
B	0.116	0.120	2.95	3.05
C	0.031	0.039	0.80	1.00
D	0.006	0.010	0.16	0.25
E	0.000	0.002	0.00	0.05
F	0.026		0.65	
G	0.008	0.016	0.19	0.40
H	0.014	0.024	0.35	0.61
J	0.008	0.016	0.19	0.40
K	0.008	0.012	0.21	0.31
L	0.013	0.017	0.34	0.44
M	0.006	—	0.15	—
N	0.087		2.22	
P	0.029	0.039	0.74	1.00

TLM832DS (REV:R1)



**LEAD CODE:**

- 1) Gate Q1
- 2) Source Q1
- 3) Gate Q2
- 4) Source Q2
- 5) Drain Q2
- 6) Drain Q2
- 7) Drain Q1
- 8) Drain Q1

**MARKING CODE: C330**

R2 (8-October 2012)

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- Custom bar coding for shipments
- Custom product packing

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- Package details
- Application notes
- Application and design sample kits
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