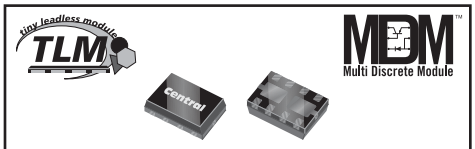
CTLM8110-M832D

MULTI DISCRETE MODULE™

SURFACE MOUNT P-CHANNEL ENHANCEMENT-MODE SILICON MOSFET AND LOW V_F SILICON SCHOTTKY RECTIFIER



Top View Bottom View

TLM832D CASE

• Device is ***Halogen Free*** by design

APPLICATIONS

- Load Power Switches
- DC - DC Converters
- LCD Backlighting
- Battery powered portable devices including Cell Phones, Digital Cameras, Pagers, PDAs, Notebook PCs, etc.

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CTLM8110-M832D consists of an P-Channel Enhancement-mode MOSFET and a Low V_F Schottky Rectifier. Packaged in a small, thermally efficient, leadless 3x2mm surface mount case, it is designed for applications where small size, operational efficiency, and low energy consumption are the prime requirements.

MARKING CODE: CFR

FEATURES

- Dual Chip Device
- High Current (0.95A) MOSFET and 1.0A Schottky Rectifier
- Low $r_{DS(ON)}$: 0.24Ω MAX @ V_{GS}=1.8V
- Low V_F Schottky Rectifier (550mV @ 1.0A MAX)
- Small TLM 3x2mm Leadless Surface Mount Package
- Complementary Device: CTLM7110-M832D

	SYMBOL		UNITS
MAXIMUM RATINGS - CASE: (T_A=25°C)			
Power Dissipation (Note 1)	P_D	1.65	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	76	°C/W
MAXIMUM RATINGS - Q1: (T_A=25°C)			
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	8.0	V
Continuous Drain Current (Steady State)	I_D	0.86	A
Continuous Drain Current, tp≤5.0s	I_D	0.95	A
Continuous Source Current (Body Diode)	I_S	0.36	A
Maximum Pulsed Drain Current, tp=10μs	I_{DM}	4.0	A
Maximum Pulsed Source Current, tp=10μs	I_{SM}	4.0	A
MAXIMUM RATINGS - D1: (T_A=25°C)			
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
Continuous Forward Current	I_F	1.0	A
Peak Repetitive Forward Current, tp≤1.0ms	I_{FRM}	3.5	A
Peak Forward Surge Current, tp=8.0ms	I_{FSM}	10	A

ELECTRICAL CHARACTERISTICS - Q1: (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		1.0	50	nA
I_{DSS}	V_{DS}=20V, V_{GS}=0		5.0	500	nA
BV_{DSS}	V_{GS}=0, I_D=250μA	20	24		V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.45	0.76	1.0	V
V_{SD}	V_{GS}=0, I_S=360mA			0.9	V
$r_{DS(ON)}$	V_{GS}=4.5V, I_D=0.95A		0.085	0.15	Ω
$r_{DS(ON)}$	V_{GS}=4.5V, I_D=0.77A		0.085	0.142	Ω
$r_{DS(ON)}$	V_{GS}=2.5V, I_D=0.67A		0.13	0.2	Ω
$r_{DS(ON)}$	V_{GS}=1.8V, I_D=0.2A		0.19	0.24	Ω
g_{FS}	V_{DS}=10V, I_D=0.81A		2.0		S

Notes: (1) FR-4 Epoxy PCB with copper mounting pad area of 54mm².

R2 (2-August 2011)

CTLM8110-M832D

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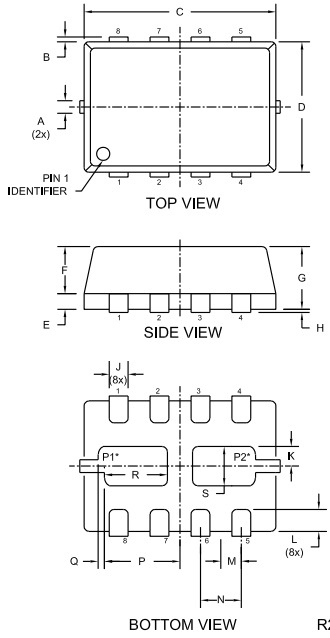
ELECTRICAL CHARACTERISTICS - Q1 - Continued: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$Q_{g(tot)}$	V_{DS}=10V, V_{GS}=4.5V, I_D=1.0A		3.56		nC
Q_{gs}	V_{DS}=10V, V_{GS}=4.5V, I_D=1.0A		0.36		nC
Q_{gd}	V_{DS}=10V, V_{GS}=4.5V, I_D=1.0A		1.52		nC
C_{rss}	V_{DS}=16V, V_{GS}=0, f=1.0MHz		80		pF
C_{iss}	V_{DS}=16V, V_{GS}=0, f=1.0MHz		200		pF
C_{oss}	V_{DS}=16V, V_{GS}=0, f=1.0MHz		60		pF
t_{on}	V_{DD}=10V, V_{GS}=4.5V, I_D=0.95A, R_G=6.0Ω		20		ns
t_{off}	V_{DD}=10V, V_{GS}=4.5V, I_D=0.95A, R_G=6.0Ω		25		ns

ELECTRICAL CHARACTERISTICS - D1: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_R	V_R=5.0V			10	μA
I_R	V_R=8.0V			20	μA
I_R	V_R=15V			50	μA
BV_R	I_R=100μA	40			V
V_F	I_F=10mA			0.29	V
V_F	I_F=100mA			0.36	V
V_F	I_F=500mA			0.45	V
V_F	I_F=1.0A			0.55	V
C_J	V_R=4.0V, f=1.0MHz		50		pF

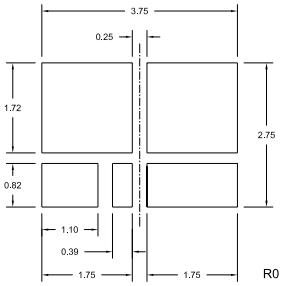
TLM832D CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.007	0.012	0.170	0.300
B	-	0.005	-	0.125
C	0.114	0.122	2.900	3.100
D	0.075	0.083	1.900	2.100
E	0.006	0.010	0.150	0.250
F	0.026	0.030	0.650	0.750
G	0.031	0.039	0.800	1.000
H	0.000	0.002	0.000	0.050
J	0.009	0.013	0.240	0.340
K	0.006	0.014	0.160	0.360
L	0.008	0.018	0.200	0.450
M	0.013		0.325	
N	0.026		0.650	
P	0.040	0.048	1.010	1.210
Q	0.004		0.100	
R	0.032	0.040	0.820	1.020
S	0.017	0.025	0.430	0.630

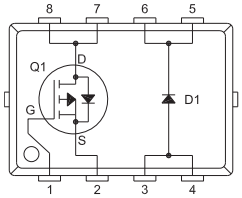
TLM832D (REV: R2)

SUGGESTED MOUNTING PADS
For Maximum Power Dissipation
(Dimensions in mm)



For standard mounting refer to TLM832D Package Details

PIN CONFIGURATION



LEAD CODE:

1) Gate Q1
2) Source Q1
3) Anode D1
4) Anode D1
5) Cathode D1
6) Cathode D1
7) Drain Q1
8) Drain Q1

MARKING CODE: CFR

* Note:
- Exposed pad P1 common to pins 7 and 8
- Exposed pad P2 common to pins 5 and 6

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