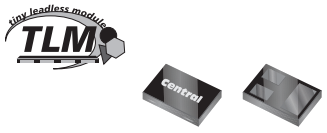
CTLDM7590

SURFACE MOUNT
P-CHANNEL
ENHANCEMENT-MODE
SILICON MOSFET



Top View Bottom View

TLM3D6D8 CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CTLDM7590 is an enhancement-mode P-channel MOSFET designed for applications including high speed pulsed amplifiers and drivers. This MOSFET has beneficially low $r_{DS(ON)}$, low threshold voltage, and very low gate charge characteristics.

MARKING CODE: 2

APPLICATIONS:

- Load/Power Switches
- Boost/Buck Converters
- Battery Charging/Power Management

FEATURES:

- ESD protection up to 2kV
- Power dissipation: 125mW
- Low $r_{DS(ON)}$
- Low threshold voltage
- Ultra small, ultra low profile 0.6mm x 0.8mm x 0.4mm TLM™ leadless surface mount package

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	8.0	V
Continuous Drain Current (Steady State)	I_D	140	mA
Pulsed Drain Current, tp=10μs	I_D	600	mA
Power Dissipation	P_D	125	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	1000	°C/W

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

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_{GSSF}, I_{GSSR}	V_{GS}=5.0V, V_{DS}=0			100	nA
I_{DSS}	V_{DS}=5.0V, V_{GS}=0			50	nA
I_{DSS}	V_{DS}=16V, V_{GS}=0			100	nA
BV_{DSS}	V_{GS}=0, I_D=250μA	20			V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.4		1.0	V
$r_{DS(ON)}$	V_{GS}=4.5V, I_D=100mA		4.0	5.0	Ω
$r_{DS(ON)}$	V_{GS}=2.5V, I_D=50mA		5.5	7.0	Ω
$r_{DS(ON)}$	V_{GS}=1.8V, I_D=20mA		8.0	10	Ω
$r_{DS(ON)}$	V_{GS}=1.5V, I_D=10mA		11	17	Ω
$r_{DS(ON)}$	V_{GS}=1.2V, I_D=1.0mA		20		Ω
$Q_{g(tot)}$	V_{DS}=10V, V_{GS}=4.5V, I_D=100mA		0.50		nC
Q_{gs}	V_{DS}=10V, V_{GS}=4.5V, I_D=100mA		0.17		nC
Q_{gd}	V_{DS}=10V, V_{GS}=4.5V, I_D=100mA		0.11		nC
g_{FS}	V_{DS}=5.0V, I_D=125mA		140		mS
C_{rss}	V_{DS}=15V, V_{GS}=0, f=1.0MHz		4.0		pF
C_{iss}	V_{DS}=15V, V_{GS}=0, f=1.0MHz		10		pF
C_{oss}	V_{DS}=15V, V_{GS}=0, f=1.0MHz		3.7		pF
t_{on}	V_{DD}=10V, V_{GS}=4.5V, I_D=200mA		35		ns
t_{off}	V_{DD}=10V, V_{GS}=4.5V, I_D=200mA		100		ns

R3 (21-September 2012)

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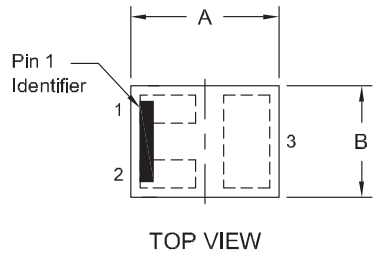
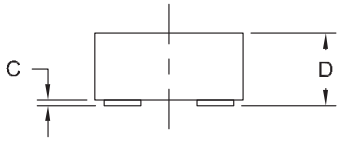
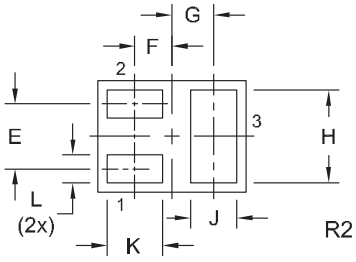
TLM3D6D8 CASE - MECHANICAL OUTLINE



TOP VIEW



SIDE VIEW

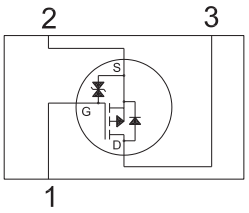


BOTTOM VIEW

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.029	0.034	0.75	0.85
B	0.021	0.026	0.55	0.65
C	0.000	0.002	0.00	0.05
D	0.012	0.016	0.31	0.40
E	0.014		0.35	
F	0.008		0.20	
G	0.009		0.225	
H	0.017	0.022	0.45	0.55
J	0.008	0.012	0.20	0.30
K	0.010	0.014	0.25	0.35
L	0.004	0.008	0.10	0.20

TLM3D6D8 (REV: R2)

PIN CONFIGURATION
(Bottom View)



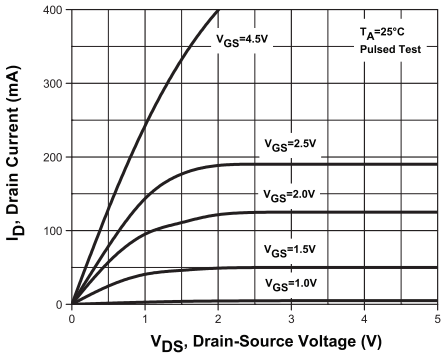
LEAD CODE:
1) Gate
2) Source
3) Drain

MARKING CODE: 2

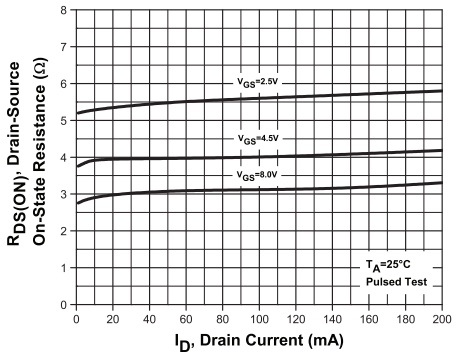
R3 (21-September 2012)

TYPICAL ELECTRICAL CHARACTERISTICS

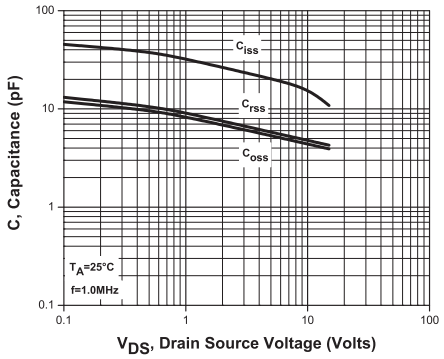
Output Characteristics



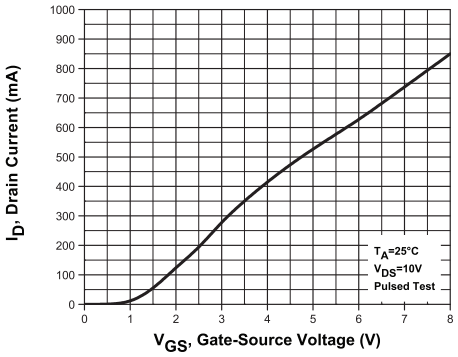
Drain Source On Resistance



Capacitance



Transfer Characteristics



Normalized Power Derating