CMUDM3590 N-CH
CMUDM7590 P-CH

SURFACE MOUNT
N-CHANNEL AND P-CHANNEL
ENHANCEMENT-MODE
COMPLEMENTARY MOSFETS

ULTRAmini™

SOT-523 CASE

• Devices are ***Halogen Free*** by design

APPLICATIONS:
- Load/Power Switches
- Power Supply Converter Circuits
- Battery Powered Portable Devices

Central™
Semiconductor Corp.

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CMUDM3590 and CMUDM7590 are complementary N-Channel and P-Channel Enhancement-mode silicon MOSFETs designed for high speed pulsed amplifier and driver applications. These devices offer desirable MOSFET electrical characteristics in an economical industry standard SOT-523 package.

MARKING CODES: CMUDM3590: C39
CMUDM7590: C79

FEATURES:
- ESD Protection up to 2kV
- Power Dissipation: 250mW
- Low Threshold Voltage
- Logic Level Compatibility
- Small SOT-523 Surface Mount Package

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**	**CMUDM3590**	**CMUDM7590**	**UNITS**
Drain-Source Voltage	V_{DS}	20		V
Gate-Source Voltage	V_{GS}	8.0		V
Continuous Drain Current (Steady State)	I_D	160	140	mA
Continuous Drain Current ($t_p \leq 5s$)	I_D	200	180	mA
Power Dissipation	P_D	250		mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	500		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)		**CMUDM3590**			**CMUDM7590**			
SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**MIN**	**TYP**	**MAX**	**UNITS**
I_{GSSF}, I_{GSSR}	V_{GS}=5.0V, V_{DS}=0V	-	-	100	-	-	100	nA
I_{DSS}	V_{DS}=5.0V, V_{GS}=0V	-	-	50	-	-	50	nA
I_{DSS}	V_{DS}=16V, V_{GS}=0V	-	-	100	-	-	100	nA
BV_{DSS}	V_{GS}=0V, I_D=250μA	20	-	-	20	-	-	V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.4	-	1.0	0.4	-	1.0	V
$r_{DS(ON)}$	V_{GS}=4.5V, I_D=100mA	-	1.5	3.0	-	4.0	5.0	Ω
$r_{DS(ON)}$	V_{GS}=2.5V, I_D=50mA	-	2.0	4.0	-	5.5	7.0	Ω
$r_{DS(ON)}$	V_{GS}=1.8V, I_D=20mA	-	3.0	6.0	-	8.0	10	Ω
$r_{DS(ON)}$	V_{GS}=1.5V, I_D=10mA	-	4.0	10	-	11	17	Ω
$r_{DS(ON)}$	V_{GS}=1.2V, I_D=1.0mA	-	7.0	-	-	20	-	Ω
g_{FS}	V_{DS}=5.0V, I_D=125mA	-	1.3	-	-	1.3	-	S
C_{rss}	V_{DS}=15V, V_{GS}=0V, f=1.0MHz	-	2.2	-	-	1.0	-	pF
C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1.0MHz	-	9.0	-	-	12	-	pF
C_{oss}	V_{DS}=15V, V_{GS}=0V, f=1.0MHz	-	3.0	-	-	2.7	-	pF
t_{on}	V_{DD}=10V, V_{GS}=4.5V, I_D=200mA	-	40	-	-	60	-	ns
t_{off}	V_{DD}=10V, V_{GS}=4.5V, I_D=200mA	-	150	-	-	210	-	ns

R0 (21-May 2009)

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SURFACE MOUNT
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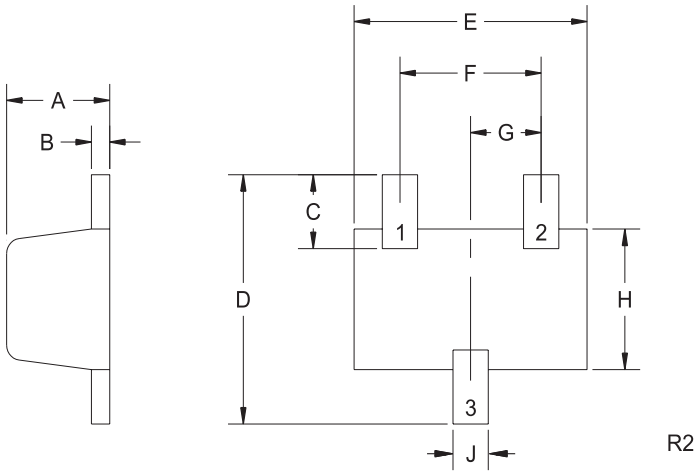
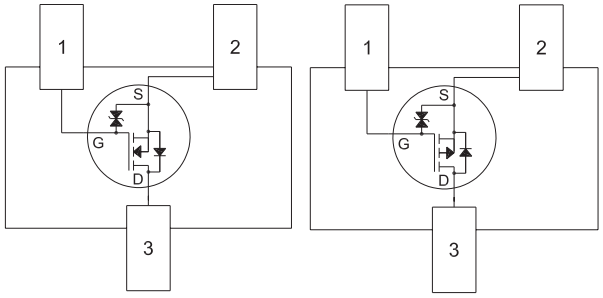
SOT-523 CASE - MECHANICAL OUTLINE



R2

PIN CONFIGURATIONS



(BOTTOM VIEW)

CMUDM3590

LEAD CODE:
1) GATE
2) SOURCE
3) DRAIN

MARKING CODE: C39

(BOTTOM VIEW)

CMUDM7590

LEAD CODE:
1) GATE
2) SOURCE
3) DRAIN

MARKING CODE: C79

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.023	0.031	0.58	0.78
B	0.002	0.008	0.04	0.20
C	0.013	0.021	0.34	0.54
D	0.059	0.067	1.50	1.70
E	0.059	0.067	1.50	1.70
F	0.035	0.043	0.90	1.10
G	0.020		0.50	
H	0.031	0.039	0.78	0.98
J	0.010	0.014	0.25	0.35

SOT-523 (REV: R2)

R0 (21-May 2009)