



**CMBDM3590 N-CH**  
**CMBDM7590 P-CH**

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

**FEMTOmini™**



**SOT-923 CASE**

• Devices are **Halogen Free** by design

**APPLICATIONS:**

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

**MAXIMUM RATINGS:** (T<sub>A</sub>=25°C)

Drain-Source Voltage	V <sub>DS</sub>	20	V
Gate-Source Voltage	V <sub>GS</sub>	8.0	V
Continuous Drain Current (Steady State)	I <sub>D</sub>	160	140
Continuous Drain Current (t <sub>p</sub> ≤ 5s)	I <sub>D</sub>	200	180
Power Dissipation	P <sub>D</sub>	125	mW
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +150	°C
Thermal Resistance	θ <sub>JA</sub>	1000	°C/W

**ELECTRICAL CHARACTERISTICS:** (T<sub>A</sub>=25°C)

SYMBOL	TEST CONDITIONS	CMBDM3590			CMBDM7590			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
I <sub>GSSF</sub> , I <sub>GSSR</sub>	V <sub>GS</sub> =5.0V, V <sub>DS</sub> =0V	-	-	100	-	-	100	nA
I <sub>DSS</sub>	V <sub>DS</sub> =5.0V, V <sub>GS</sub> =0V	-	-	50	-	-	50	nA
I <sub>DSS</sub>	V <sub>DS</sub> =16V, V <sub>GS</sub> =0V	-	-	100	-	-	100	nA
BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	20	-	-	20	-	-	V
V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	0.4	-	1.0	0.4	-	1.0	V
r <sub>DS(ON)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =100mA	-	1.5	3.0	-	4.0	5.0	Ω
r <sub>DS(ON)</sub>	V <sub>GS</sub> =2.5V, I <sub>D</sub> =50mA	-	2.0	4.0	-	5.5	7.0	Ω
r <sub>DS(ON)</sub>	V <sub>GS</sub> =1.8V, I <sub>D</sub> =20mA	-	3.0	6.0	-	8.0	10	Ω
r <sub>DS(ON)</sub>	V <sub>GS</sub> =1.5V, I <sub>D</sub> =10mA	-	4.0	10	-	11	17	Ω
r <sub>DS(ON)</sub>	V <sub>GS</sub> =1.2V, I <sub>D</sub> =1.0mA	-	7.0	-	-	20	-	Ω
g <sub>FS</sub>	V <sub>DS</sub> =5.0V, I <sub>D</sub> =125mA	-	1.3	-	-	1.3	-	S
C <sub>rss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1.0MHz	-	2.2	-	-	1.0	-	pF
C <sub>iss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1.0MHz	-	9.0	-	-	12	-	pF
C <sub>oss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1.0MHz	-	3.0	-	-	2.7	-	pF
t <sub>on</sub>	V <sub>DD</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =200mA	-	40	-	-	60	-	ns
t <sub>off</sub>	V <sub>DD</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =200mA	-	150	-	-	210	-	ns

# Central™

**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMBDM3590 and CMBDM7590 are complementary N-Channel and P-Channel Enhancement-mode silicon MOSFETs designed for high speed pulsed amplifier and driver applications. These MOSFETs offer Low r<sub>DS(ON)</sub> and Low Threshold Voltage.

**MARKING CODES: CMBDM3590: R**  
**CMBDM7590: W**

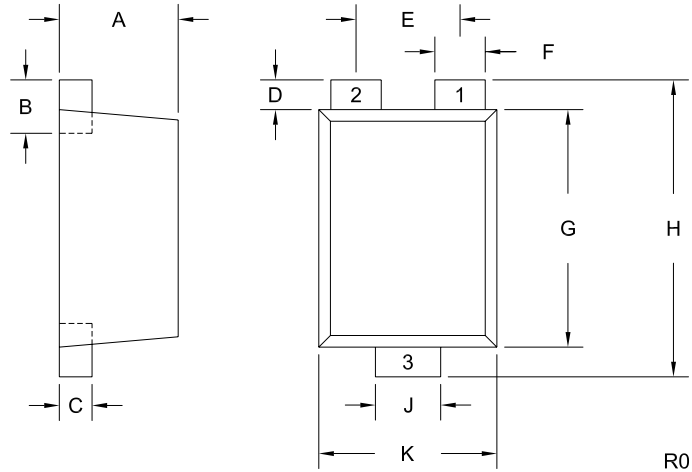
**FEATURES:**

- Power Dissipation: 125mW
- Low Package Profile: 0.4mm
- Low r<sub>DS(ON)</sub>
- Low Threshold Voltage
- Logic Level Compatibility
- Small SOT-923 Surface Mount Package

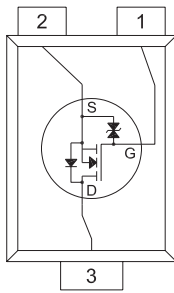
SYMBOL	CMBDM3590	CMBDM7590	UNITS
V <sub>DS</sub>		20	V
V <sub>GS</sub>		8.0	V
I <sub>D</sub>	160	140	mA
I <sub>D</sub>	200	180	mA
P <sub>D</sub>		125	mW
T <sub>J</sub> , T <sub>stg</sub>		-65 to +150	°C
θ <sub>JA</sub>		1000	°C/W

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

**SOT-923 CASE - MECHANICAL OUTLINE**



**PIN CONFIGURATIONS**

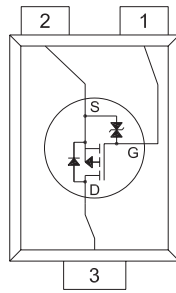


**CMBDM3590**

**LEAD CODE:**

- 1) GATE
- 2) SOURCE
- 3) DRAIN

**MARKING CODE: R**



**CMBDM7590**

**LEAD CODE:**

- 1) GATE
- 2) SOURCE
- 3) DRAIN

**MARKING CODE: W**

SYMBOL	DIMENSIONS		DIMENSIONS	
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.015	0.016	0.39	0.41
B	0.004	0.010	0.10	0.26
C	0.003	0.006	0.08	0.14
D	0.002	0.006	0.05	0.15
E	0.014		0.35	
F	0.005	0.009	0.12	0.22
G	0.030	0.033	0.75	0.85
H	0.035	0.043	0.90	1.10
J	0.007	0.011	0.17	0.27
K	0.022	0.026	0.55	0.65

SOT-923 (REV: R0)