



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: ($T_A=25^\circ\text{C}$)

Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	8.0	V
Continuous Drain Current (Steady State)	I_D	160	140
Continuous Drain Current ($t_p \leq 5s$)	I_D	200	180
Power Dissipation	P_D	125	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
Thermal Resistance	θ_{JA}	1000	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$)

SYMBOL	TEST CONDITIONS	CMBDM3590			CMBDM7590			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
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}	$V_{GS}=0V, I_D=250\mu A$	20	-	-	20	-	-	V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	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

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 $r_{DS(ON)}$ and Low Threshold Voltage.

MARKING CODES: CMBDM3590: R
CMBDM7590: W

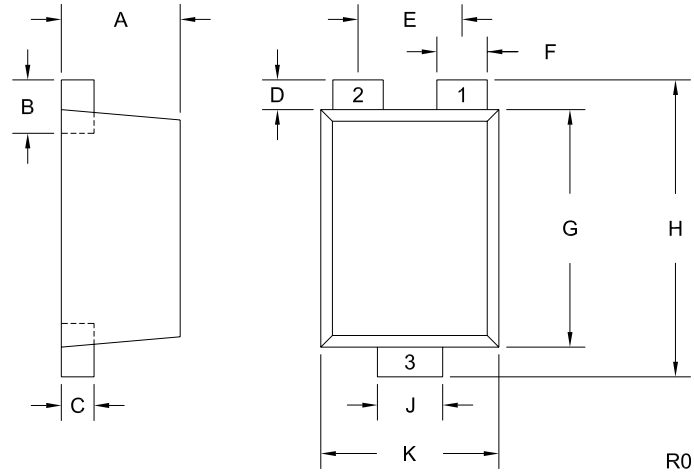
FEATURES:

- Power Dissipation: 125mW
- Low Package Profile: 0.4mm
- Low $r_{DS(ON)}$
- Low Threshold Voltage
- Logic Level Compatibility
- Small SOT-923 Surface Mount Package

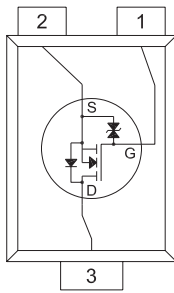
SYMBOL	CMBDM3590	CMBDM7590	UNITS
V_{DS}		20	V
V_{GS}		8.0	V
I_D	160	140	mA
I_D	200	180	mA
P_D		125	mW
T_J, T_{stg}		-65 to +150	$^\circ\text{C}$
θ_{JA}		1000	$^\circ\text{C/W}$

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

SOT-923 CASE - MECHANICAL OUTLINE



PIN CONFIGURATIONS

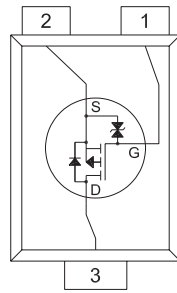


CMBDM3590

LEAD CODE:

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

MARKING CODE: R



CMBDM7590

LEAD CODE:

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

MARKING CODE: W

SYMBOL	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)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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