



CMRDM3590

**SURFACE MOUNT
DUAL N-CHANNEL
ENHANCEMENT-MODE
SILICON MOSFET**

FEMTOmini™



SOT-963 CASE

Central™

Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMRDM3590 is an Enhancement-mode Dual N-Channel Field Effect Transistor, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications. This MOSFET offers Low $r_{DS(ON)}$ and Low Threshold Voltage.

- Device is **Halogen Free** by design

MARKING CODE: CR

FEATURES:

- Power Dissipation: 125mW
- Low Package Profile: 0.5mm (MAX)
- Low $r_{DS(ON)}$
- Low Threshold Voltage
- Logic Level Compatible
- Small SOT-963 Surface Mount Package

APPLICATIONS:

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

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

Drain-Source Voltage
Gate-Source Voltage
Continuous Drain Current (Steady State)
Continuous Drain Current ($t_p \leq 5s$)
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL

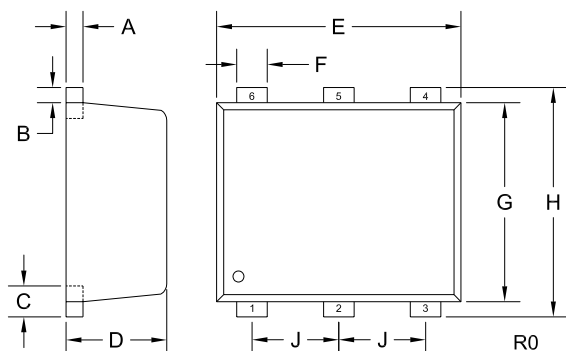
V_{DS}	20	V
V_{GS}	8.0	V
I_D	160	mA
I_D	200	mA
P_D	125	mW
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
θ_{JA}	1000	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS PER TRANSISTOR: ($T_A=25^\circ\text{C}$ unless otherwise noted)

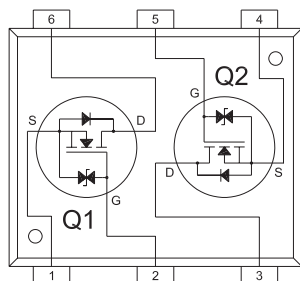
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}	$V_{GS}=5.0V, V_{DS}=0V$			100	nA
I_{GSSR}	$V_{GS}=5.0V, V_{DS}=0V$			100	nA
I_{DSS}	$V_{DS}=5.0V, V_{GS}=0V$			50	nA
I_{DSS}	$V_{DS}=16V, V_{GS}=0V$			100	nA
BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20			V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.4		1.0	V
$r_{DS(ON)}$	$V_{GS}=4.5V, I_D=100mA$		1.5	3.0	Ω
$r_{DS(ON)}$	$V_{GS}=2.5V, I_D=50mA$		2.0	4.0	Ω
$r_{DS(ON)}$	$V_{GS}=1.8V, I_D=20mA$		3.0	6.0	Ω
$r_{DS(ON)}$	$V_{GS}=1.5V, I_D=10mA$		4.0	10	Ω
$r_{DS(ON)}$	$V_{GS}=1.2V, I_D=1mA$		7.0		Ω
g_{FS}	$V_{DS}=5.0V, I_D=125mA$		1.3		S
C_{rss}	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$		2.2		pF
C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$		9.0		pF
C_{oss}	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$		3.0		pF
t_{on}	$V_{DD}=10V, V_{GS}=4.5V, I_D=200mA$		40		ns
t_{off}	$V_{DD}=10V, V_{GS}=4.5V, I_D=200mA$		150		ns

R2 (25-February 2009)

SOT-963 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



LEAD CODE:

- 1) SOURCE Q1
- 2) GATE Q1
- 3) DRAIN Q2
- 4) SOURCE Q2
- 5) GATE Q2
- 6) DRAIN Q1

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DIMENSIONS

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.002	0.006	0.050	0.150
B	0.002	0.006	0.050	0.150
C	0.005	0.007	0.125	0.175
D	0.016	0.020	0.400	0.500
E	0.037	0.041	0.950	1.050
F	0.004	0.008	0.100	0.200
G	0.030	0.033	0.750	0.850
H	0.037	0.041	0.950	1.050
J	0.014		0.350	

SOT-963 (REV: R0)