

CMRDM3590**SURFACE MOUNT SILICON
DUAL N-CHANNEL
ENHANCEMENT-MODE
MOSFET****SOT-963 CASE**

- Device is **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
Gate-Source Voltage
Continuous Drain Current (Steady State)
Continuous Drain Current, $t_p \leq 5.0\text{s}$
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance


www.centrasemi.com
DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMRDM3590 is an enhancement-mode dual N-Channel MOSFET, 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.

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

SYMBOL		UNITS
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_{GSS}, I_{GSSR}	$V_{GS}=5.0\text{V}, V_{DS}=0$			100	nA
I_{DSS}	$V_{DS}=5.0\text{V}, V_{GS}=0$			50	nA
I_{DSS}	$V_{DS}=16\text{V}, V_{GS}=0$			100	nA
BV_{DSS}	$V_{GS}=0, I_D=250\mu\text{A}$	20			V
$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.4		1.0	V
$r_{DS(ON)}$	$V_{GS}=4.5\text{V}, I_D=100\text{mA}$		1.5	3.0	Ω
$r_{DS(ON)}$	$V_{GS}=2.5\text{V}, I_D=50\text{mA}$		2.0	4.0	Ω
$r_{DS(ON)}$	$V_{GS}=1.8\text{V}, I_D=20\text{mA}$		3.0	6.0	Ω
$r_{DS(ON)}$	$V_{GS}=1.5\text{V}, I_D=10\text{mA}$		4.0	10	Ω
$r_{DS(ON)}$	$V_{GS}=1.2\text{V}, I_D=1.0\text{mA}$		7.0		Ω
g_{FS}	$V_{DS}=5.0\text{V}, I_D=125\text{mA}$		1.3		S
C_{rss}	$V_{DS}=15\text{V}, V_{GS}=0, f=1.0\text{MHz}$		2.2		pF
C_{iss}	$V_{DS}=15\text{V}, V_{GS}=0, f=1.0\text{MHz}$		9.0		pF
C_{oss}	$V_{DS}=15\text{V}, V_{GS}=0, f=1.0\text{MHz}$		3.0		pF
$Q_g(\text{tot})$	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.458		nC
Q_{gs}	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.176		nC
Q_{gd}	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=100\text{mA}$		0.138		nC
t_{on}	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}$		25		ns
t_{off}	$V_{DD}=10\text{V}, V_{GS}=4.5\text{V}, I_D=200\text{mA}$		85		ns

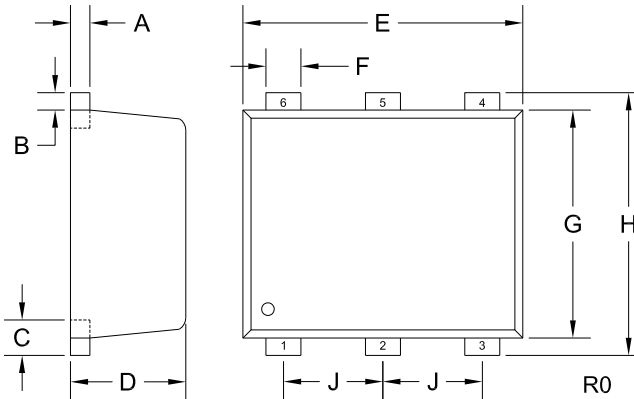
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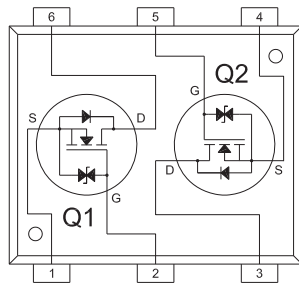
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SOT-963 CASE - MECHANICAL OUTLINE



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)

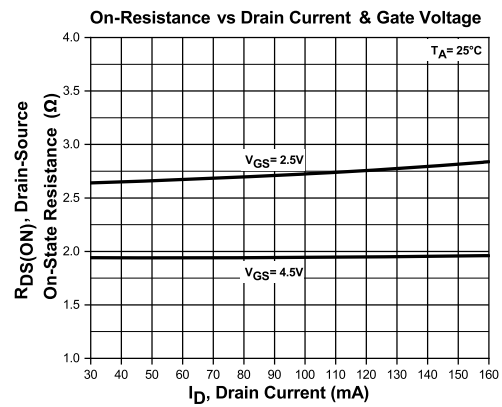
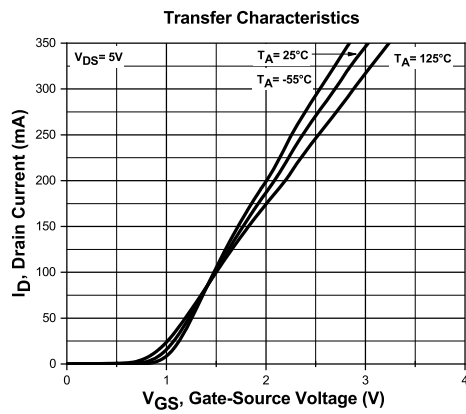
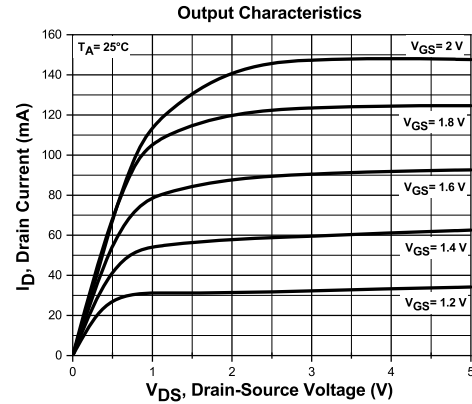
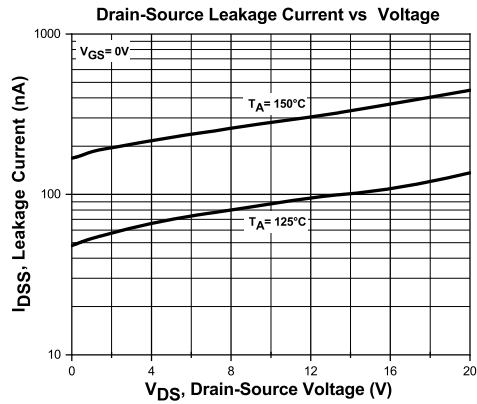
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TYPICAL ELECTRICAL CHARACTERISTICS



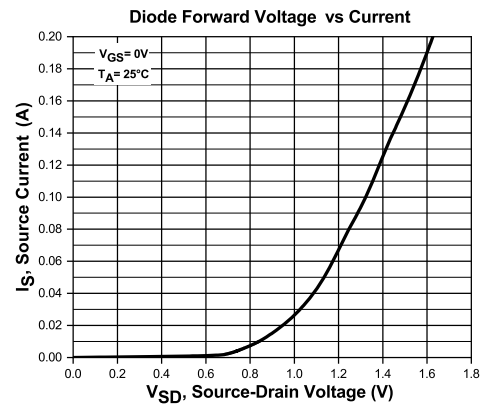
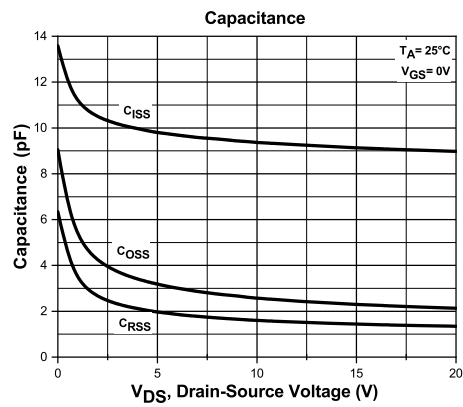
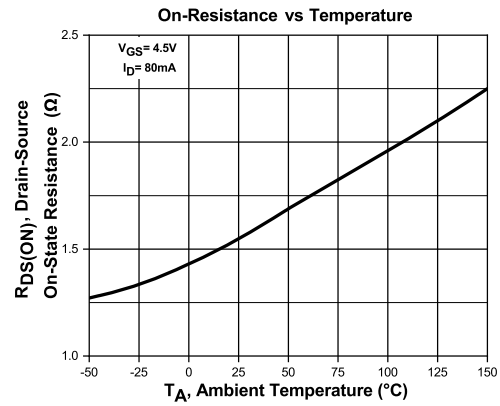
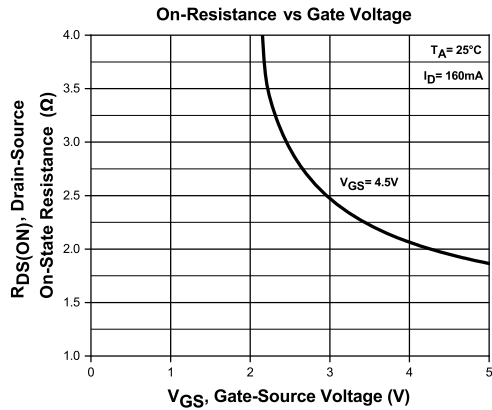
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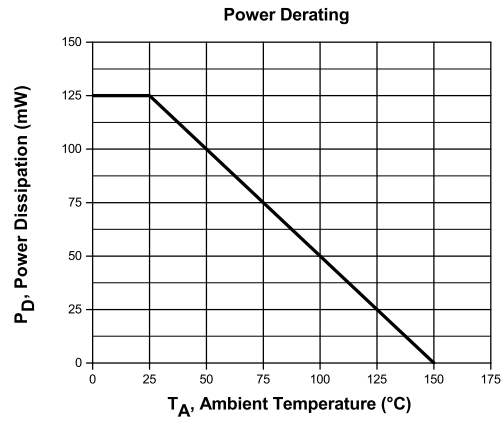
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TYPICAL ELECTRICAL CHARACTERISTICS



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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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