



CMLD3003DOG-RZ

**SURFACE MOUNT SILICON
DUAL, ISOLATED, OPPOSING
LOW LEAKAGE
SWITCHING DIODES
RUGGEDIZED PACKAGING**



DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLD3003DOG-RZ device contains two (2) isolated opposing configuration, silicon switching diodes, manufactured by the epitaxial planar process, epoxy molded in an SOT-563 surface mount package. These devices are designed for switching applications requiring extremely low leakage. It features a robust design manufactured specifically for operation in harsh environments where temperature and moisture may contribute to degraded performance and reliability.

UNIQUE DEVICE CONSTRUCTION FEATURES:

- Alloy 42 or pure copper lead frame
- Eutectic die attach
- Gold wire bond
- Pb/Sn lead plating available

MARKING CODE: 3CG

MAXIMUM RATINGS: (T_A=25°C)

Continuous Reverse Voltage
Average Rectified Current
Continuous Forward Current
Peak Repetitive Forward Current
Peak Forward Surge Current, tp=1.0μs
Peak Forward Surge Current, tp=1.0s
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL		UNITS
V _R	180	V
I _O	200	mA
I _F	600	mA
I _{FRM}	700	mA
I _{FSM}	2.0	A
I _{FSM}	1.0	A
P _D	250	mW
T _J , T _{stg}	-65 to +150	°C
θ _{JA}	500	°C/W

ELECTRICAL CHARACTERISTICS PER DIODE: (T_A=25°C unless otherwise noted)

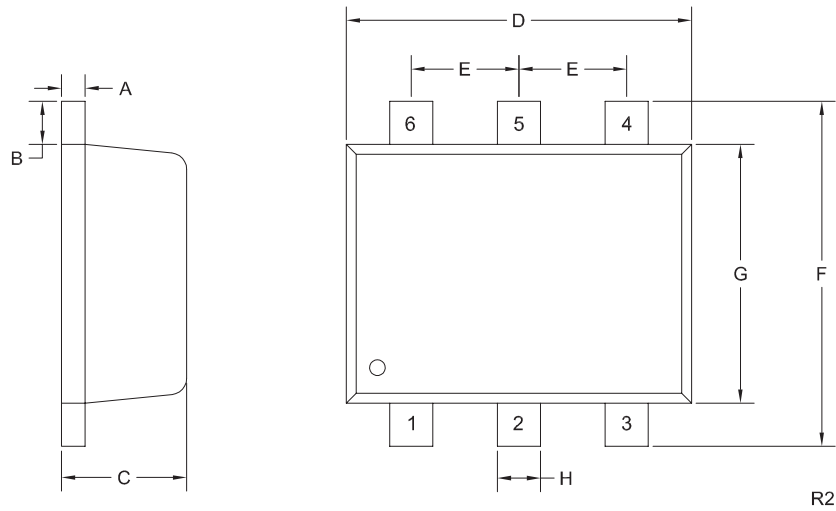
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I _R	V _R =125V		1.0	nA
I _R	V _R =125V, T _A =150°C		3.0	μA
I _R	V _R =180V		10	nA
I _R	V _R =180V, T _A =150°C		5.0	μA
BV _R	I _R =5.0μA	200		V
V _F	I _F =1.0mA	0.62	0.72	V
V _F	I _F =10mA	0.72	0.83	V
V _F	I _F =50mA	0.80	0.89	V
V _F	I _F =100mA	0.83	0.93	V
V _F	I _F =200mA	0.87	1.10	V
V _F	I _F =300mA	0.90	1.15	V
C _J	V _R =0, f=1.0MHz		4.0	pF

R0 (16-April 2026)

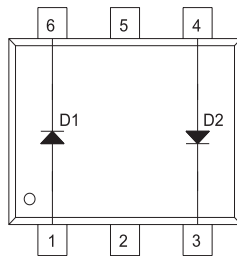
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SOT-563 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



LEAD CODE:

- 1) Anode D1
- 2) NC
- 3) Cathode D2
- 4) Anode D2
- 5) NC
- 6) Cathode D1

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.0027	0.007	0.07	0.18
B	0.008		0.20	
C	0.017	0.024	0.45	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.059	0.067	1.50	1.70
G	0.043	0.051	1.10	1.30
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R2)

MARKING CODE: 3CG

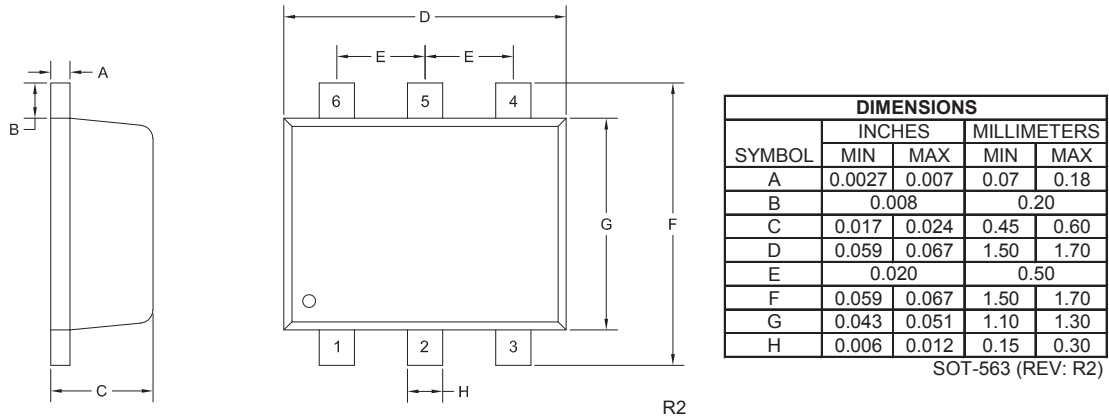
R0 (16-April 2026)

Package Details

SOT-563 Case



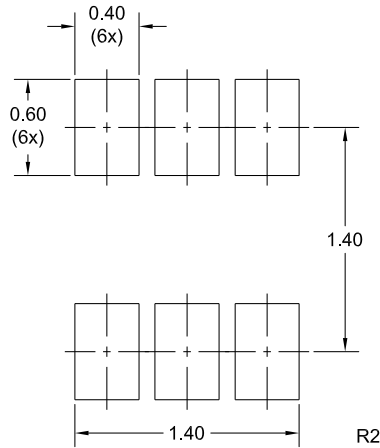
Mechanical Drawing



Lead Code:
Reference individual
device datasheet.

Part Marking: 2-4 Character Alpha/Numeric Code

Mounting Pad Geometry (Dimensions in mm)



R7 (22-May 2015)

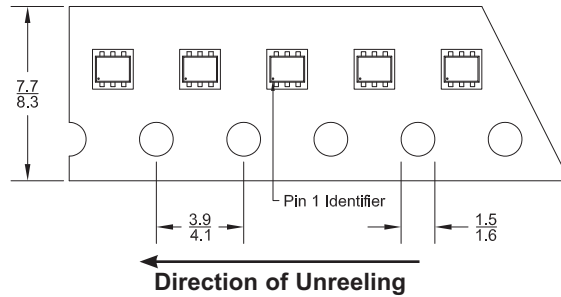
Package Details

SOT-563 Case



Tape Dimensions and Orientation (Dimensions in mm)

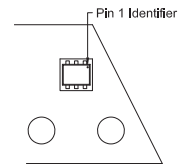
Tape Width: 8mm



Devices are taped in accordance with Electronic Industries Association Standard EIA-481-D

Optional Orientation

For special orders with devices taped with Pin 1 oriented away from sprocket holes add TRR suffix to part number. Contact Central Semiconductor sales representative for additional information and availability.



Packaging Base

7" Reel = 3,000 pcs.

Reel Labeling Information

Each reel is labeled with the following information:

Central Part Number, Customer Part Number, Purchase Order Number, Quantity, Lot Number, Date Code, Ship Date and Marking Code.

Reel Packing Information

Reel Size	Reels per Box (Maximum)	Parts per Box (Maximum)	Box Dimensions		Shipping Weight (Max.)	
			INCH	CM	LB	KG
7"	9	27,000	9x9x5	23x23x13	3	2
	18	54,000	9x9x9	23x23x23	6	3
	40	120,000	21x9x9	53x23x23	13	6
	108	324,000	27x9x17	69x23x43	34	16

Ordering Information

- For devices taped and reeled on 7" reels, add TR suffix to part number.
- All SMDs are available in small quantities for prototype and manual placement applications.

R7 (22-May 2015)

Material Composition Specification

SOT-563 Case



Device average mass 2.92 mg
 Fluctuation margin +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	2.74%	0.08	Si	7440-21-3	2.74%	0.08	27,397
bond wire	gold or copper	0.68%	0.02	Au	7440-57-5	0.68%	0.02	6,849
				Cu	7440-50-8			
leadframe	Cu alloy w/ silver plating	40.41%	1.18	Cu	7440-50-8	34.93%	1.02	349,315
				Ni	7440-02-0	3.42%	0.10	34,247
				Sn	7440-31-5	1.03%	0.03	10,274
				Ag	7440-22-4	1.03%	0.03	10,274
	Alloy 42 w/ silver plating	40.41%	1.18	Fe	7439-89-6	20.89%	0.61	208,904
				Ni	7440-02-0	18.49%	0.54	184,932
Ag				7440-22-4	1.03%	0.03	10,274	
encapsulation*	EMC	54.11%	1.58	silica	7631-86-9	39.04%	1.14	390,411
				epoxy resin	Proprietary	13.36%	0.39	133,562
				Sb ₂ O ₃	1309-64-4	1.03%	0.03	10,274
				TBBA	79-94-7	0.34%	0.01	3,425
				carbon black	1333-86-4	0.34%	0.01	3,425
	EMC GREEN	54.11%	1.58	silica	60676-86-0	35.96%	1.05	359,589
				epoxy resin	29690-82-2	6.16%	0.18	61,644
				phenol resin	9003-35-4	6.16%	0.18	61,644
				carbon black	1333-86-4	0.34%	0.01	3,425
				metal hydroxide	1309-42-8	5.48%	0.16	54,795
plating**	tin/lead process	2.05%	0.06	Sn	7440-31-5	1.71%	0.05	17,123
				Pb	7439-92-1	0.34%	0.01	3,425
	matte tin	2.05%	0.06	Sn	7440-31-5	2.05%	0.06	20,548

*EMC GREEN molding compound is Halogen-Free.

**For Lead Free plating, add suffix "PB FREE" to part number.

For Tin/Lead plating, add suffix "TIN/LEAD" to part number.

No suffix designation allows for the supply of either lead-free or tin/lead plated product depending on availability.

Disclaimer

The information provided in this Material Composition data sheet is, to the best of our knowledge, correct. However, there is no guarantee to completeness or accuracy, as some information is derived from data sources outside the company.

R9 (16-July 2018)

Material Composition Specification

SOT-563 Case



Device average mass 2.92 mg
 Fluctuation margin +/-10%

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		(%wt)	(mg)			(%wt)	(mg)	(ppm)
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				epoxy resin	Proprietary	13.36%	0.39	133,562
				Sb ₂ O ₃	1309-64-4	1.03%	0.03	10,274
				TBBA	79-94-7	0.34%	0.01	3,425
				carbon black	1333-86-4	0.34%	0.01	3,425
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