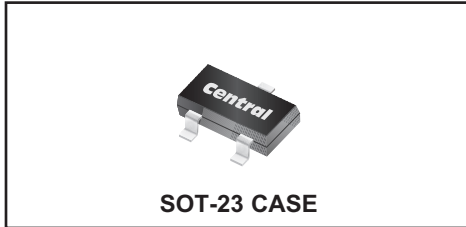




CMPD5001S-RZ
SURFACE MOUNT
HIGH CURRENT
INDUCTIVE LOAD
SILICON SWITCHING DIODE
RUGGEDIZED PACKAGING



DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD5001S-RZ features series silicon switching diodes manufactured by the epitaxial planar process, designed for switching applications requiring extremely high current capability. 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: D49

MAXIMUM RATINGS: (T_A=25°C)

Continuous Reverse Voltage
Continuous Forward Current
Peak Repetitive Forward Current
Peak Repetitive Reverse 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	120	V
I _F	400	mA
I _{FRM}	800	mA
I _R	600	mA
I _{FSM}	6.0	A
I _{FSM}	1.5	A
P _D	350	mW
T _J , T _{stg}	-65 to +150	°C
θ _{JA}	357	°C/W

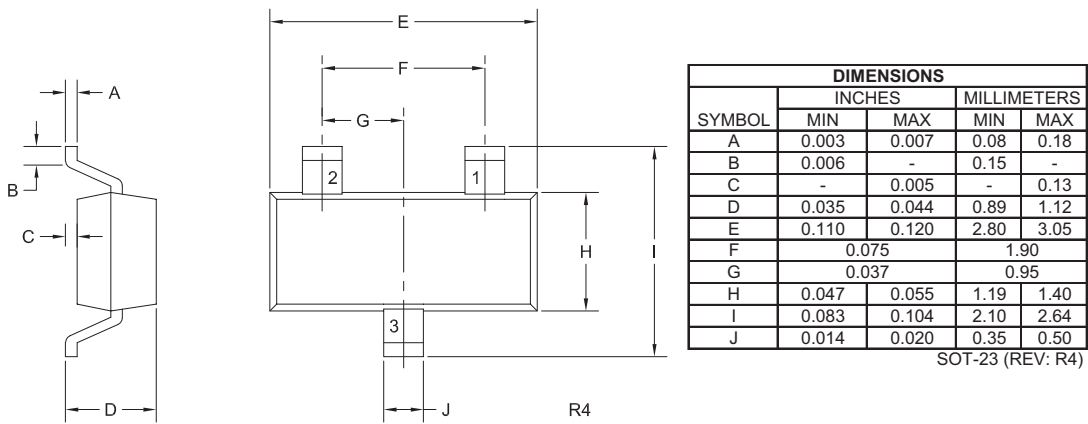
ELECTRICAL CHARACTERISTICS PER DIODE: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I _R	V _R =90V		100	nA
I _R	V _R =90V, T _A =150°C		100	µA
BV _R	I _R =50µA	120	325	V
V _F	I _F =10mA		0.75	V
V _F	I _F =50mA		0.84	V
V _F	I _F =100mA		0.90	V
V _F	I _F =200mA		1.00	V
V _F	I _F =400mA		1.25	V
C _T	V _R =0, f=1.0MHz		35	pF
t _{rr}	I _R =I _F =30mA, I _{rr} =3.0mA, R _L =100Ω		60	ns
t _{rr}	I _R =I _F =10mA, I _{rr} =3.0mA, R _L =100Ω		50	ns

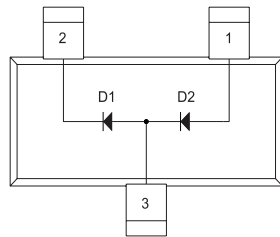
R0 (16-April 2026)

CMPD5001S-RZ
SURFACE MOUNT
HIGH CURRENT
INDUCTIVE LOAD
SILICON SWITCHING DIODE
RUGGEDIZED PACKAGING

SOT-23 CASE - MECHANICAL OUTLINE



PIN CONFIGURATIONS



LEAD CODE:

- 1) Anode D2
- 2) Cathode D1
- 3) Anode D1, Cathode D2

MARKING CODE: D49

R0 (16-April 2026)

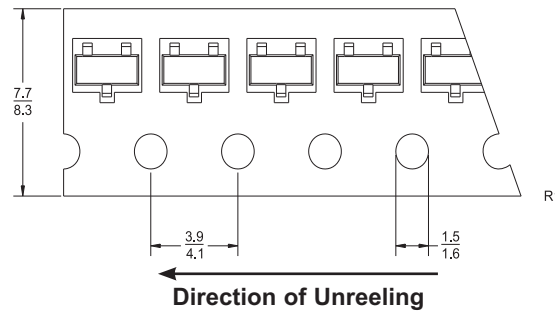
Package Details

SOT-23 Case



Tape Dimensions and Orientation (Dimensions in mm)

Tape Width: 8mm



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

Packaging Base

7" Reel = 3,000 pcs.
13" Reel = 10,000 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
13"	6	60,000	15x4x15	38x10x38	6	3
	14	140,000	15x15x9	38x38x23	15	7
	26	260,000	15x15x18	38x38x46	28	13

Ordering Information

- For devices taped and reeled on 7" reels, add TR suffix to part number.
- For devices taped and reeled on 13" reels, add TR13 suffix to part number.
- All SMDs are available in small quantities for prototype and manual placement applications.

R4 (27-August 2021)

Material Composition Specification

SOT-23 Case



Device average mass 8.5 mg
 Fluctuation margin +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	2.71%	0.23	Si	7440-21-3	2.71%	0.23	27,059
bond wire	gold or copper	0.25%	0.021	Au	7440-57-5	0.25%	0.021	2,471
				Cu	7440-50-8			
leadframe	alloy 42	25.4%	2.159	Fe	7439-89-6	14.99%	1.274	149,882
				Ni	7440-02-0	10.41%	0.885	104,118
leadframe plating	silver	0.71%	0.06	Ag	7440-22-4	0.71%	0.06	7,059
encapsulation*	EMC	68.94%	5.86	silica	7631-86-9	46.87%	3.984	468,706
				epoxy resin	29690-82-2	13.79%	1.172	137,882
				phenol resin	9003-35-4	6.89%	0.586	68,941
				Sb ₂ O ₃	1309-64-4	0.69%	0.059	6,941
				Br	7726-95-6	0.69%	0.059	6,941
	EMC GREEN	68.94%	5.86	silica (fused)	60676-86-0	53.08%	4.512	530,824
				epoxy resin	29690-82-2	6.89%	0.586	68,941
				phenol resin	9003-35-4	6.68%	0.568	66,824
				carbon black	1333-86-4	0.21%	0.018	2,118
				metal hydroxide	1309-42-8	2.07%	0.176	20,706
plating**	tin/lead process	2.0%	0.17	Sn	7440-31-5	1.59%	0.135	15,882
				Pb	7439-92-1	0.41%	0.035	4,118
	matte tin	2.0%	0.17	Sn	7440-31-5	2.0%	0.17	20,000

*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.

R11 (16-July 2018)