RUGGEDIZED

CMOD4448-RZ

SURFACE MOUNT
HIGH SPEED
SILICON SWITCHING DIODE
RUGGEDIZED PACKAGING

ULTRAmini™

SOD-523 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMOD4448-RZ type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, epoxy molded in an ULTRAmini™ surface mount package, designed for high speed switching applications. 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: 48

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	500	mA
Peak Forward Surge Current, tp=1.0μs	I_{FSM}	4.0	A
Peak Forward Surge Current, tp=1.0s	I_{FSM}	1.0	A
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

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

SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
I_R	V_R=20V		25	nA
BV_R	I_R=5.0μA	75		V
BV_R	I_R=100μA	100		V
V_F	I_F=5.0mA	0.62	0.72	V
V_F	I_F=100mA		1.0	V
C_T	V_R=0, f=1.0MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, I_{rr}=1.0mA, R_L=100Ω		4.0	ns

R0 (16-April 2026)

CMOD4448-RZ

SURFACE MOUNT
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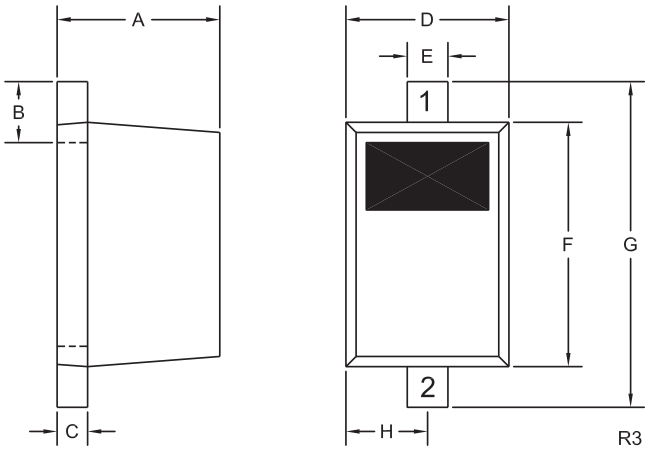
SOD-523 CASE - MECHANICAL OUTLINE



LEAD CODE:
1) Cathode
2) Anode

MARKING CODE: 48

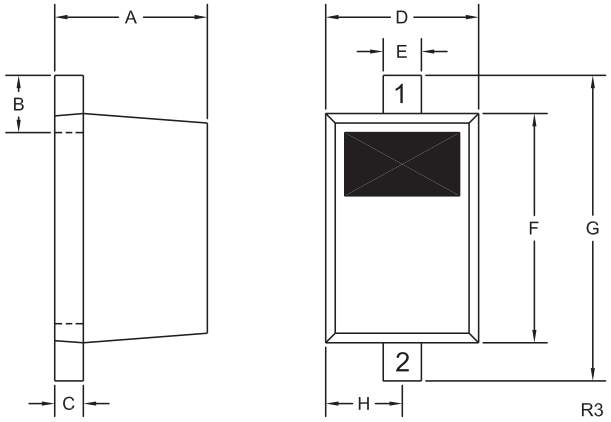
DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.020	0.031	0.50	0.80
B	0.008	0.016	0.20	0.40
C	0.002	0.008	0.05	0.20
D	0.028	0.035	0.70	0.90
E	0.008	0.014	0.20	0.35
F	0.039	0.055	1.00	1.40
G	0.055	0.071	1.40	1.80
H	0.016		0.40	

SOD-523 (REV: R3)

R0 (16-April 2026)

Package Details
SOD-523 Case

Mechanical Drawing



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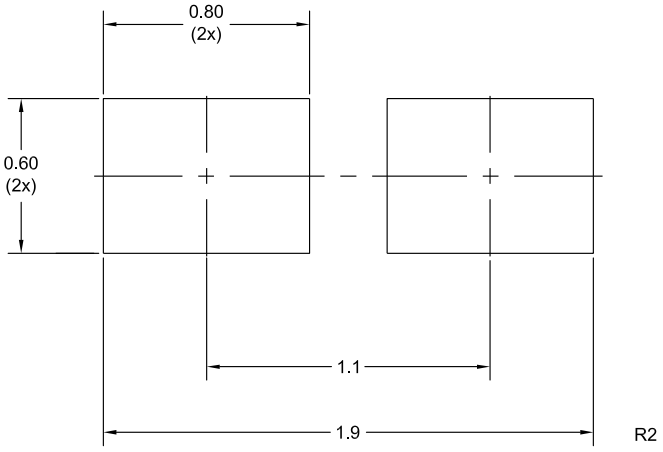
G	0.055	0.071	1.40	1.80
H	0.016		0.40	

SOD-523 (REV: R3)

Lead Code:
1) Cathode
2) Anode

Part Marking: 2-3 Character Alpha/Numeric Code

Mounting Pad Geometry (Dimensions in mm)

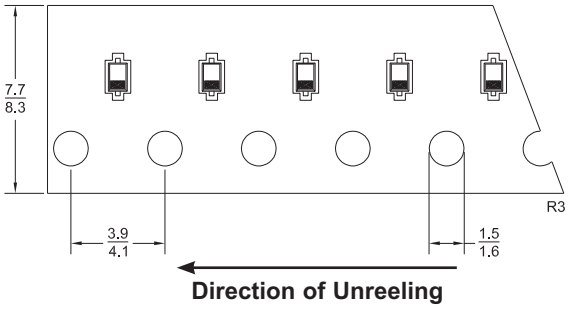


R6 (11-April 2011)

Package Details
SOD-523 Case

Tape Dimensions and Orientation (Dimensions in mm)

Tape Width: 8mm



Devices are taped in accordance with Electronic Industries Association Standard EIA-481-1-A

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	5	3
	40	120,000	21x9x9	53x23x23	11	5
	108	324,000	27x9x17	69x23x43	30	14

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.

Material Composition Specification

SOD-523 Case

Device average mass . . . . . **1.37 mg**

Fluctuation margin . . . . . **+/-10%**

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	5.11%	0.07	Si	7440-21-3	5.11%	0.07	51,095
bond wire	gold or copper	0.44%	0.01	Au	7440-57-5	0.44%	0.006	4,380
				Cu	7440-50-8			
leadframe	alloy 42 w/ silver plating	32.26%	0.44	Fe	7439-89-6	18.69%	0.256	186,861
				Ni	7440-02-0	12.99%	0.178	129,927
				Ag	7440-22-4	0.58%	0.008	5,839
encapsulation*	EMC	60.74%	0.83	silica	7631-86-9	43.8%	0.6	437,956
				epoxy resin	Proprietary	15.26%	0.209	152,555
				Sb_2O_3	1309-64-4	1.24%	0.017	12,409
				TBBA	79-94-7	0.29%	0.004	2,920
				carbon	1333-86-4	0.15%	0.002	1,460
	EMC GREEN	60.74%	0.83	silica	60676-86-0	40.59%	0.556	405,915
				epoxy resin	29690-82-2	9.22%	0.126	92,196
				phenol resin	9003-35-4	4.63%	0.063	46,255
				carbon black	1333-86-4	0.31%	0.004	3,147
				metal hydroxide	1309-42-8	5.98%	0.082	59,786
plating**	tin/lead process	1.46%	0.02	Sn	7440-31-5	1.17%	0.016	11,679
				Pb	7439-92-1	0.29%	0.004	2,920
	matte tin	1.46%	0.02	Sn	7440-31-5	1.46%	0.02	14,599

*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.

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