CMPD914

SURFACE MOUNT SILICON HIGH SPEED SWITCHING DIODE



SOT-23 CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD914 is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package, designed for high speed switching applications.

MARKING CODE: C5D

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}	250	mA
Peak Forward Surge Current, tp=1.0μs	I_{FSM}	4.0	A
Peak Forward Surge Current, tp=1.0ms	I_{FSM}	2.0	A
Peak Forward Surge Current, tp=1.0s	I_{FSM}	1.0	A
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

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

SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
I_R	V_R=20V		25	nA
I_R	V_R=75V		5.0	μA
BV_R	I_R=100μA	100		V
V_F	I_F=10mA		1.0	V
C_J	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

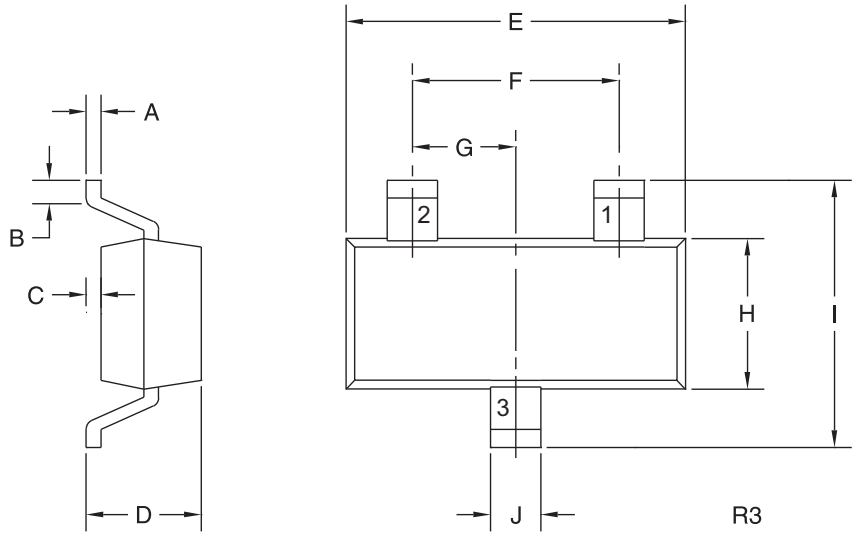
R7 (12-January 2016)

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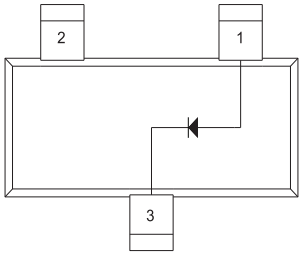
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SWITCHING DIODE

SOT-23 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



LEAD CODE:
1) Anode
2) No Connection
3) Cathode

MARKING CODE: C5D

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.098	2.10	2.49
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R3)

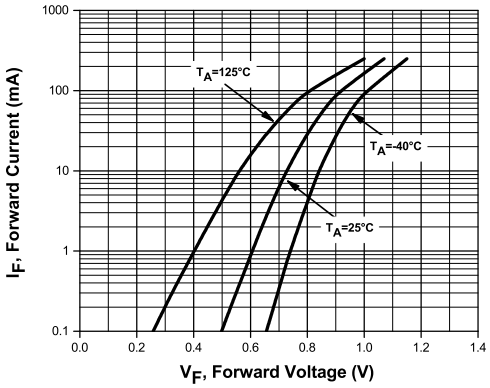
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CMPD914

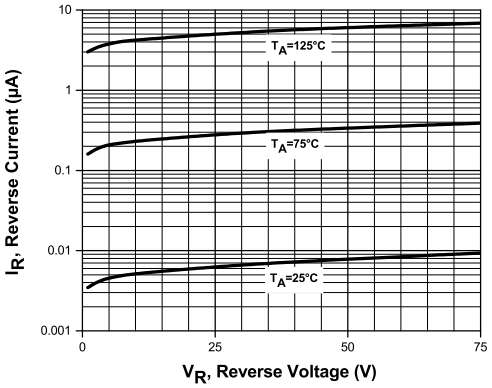
SURFACE MOUNT SILICON
HIGH SPEED
SWITCHING DIODE

TYPICAL ELECTRICAL CHARACTERISTICS

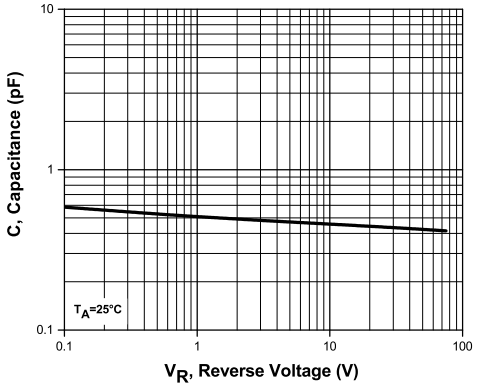
Forward Voltage



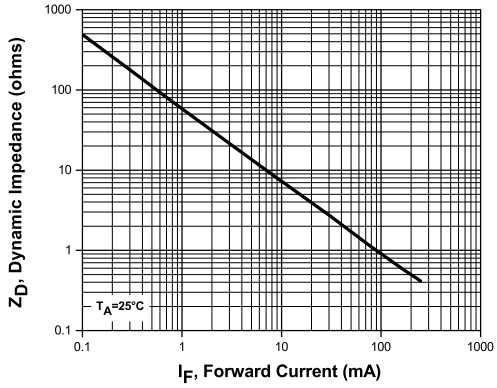
Leakage Current



Capacitance



Forward Dynamic Impedance

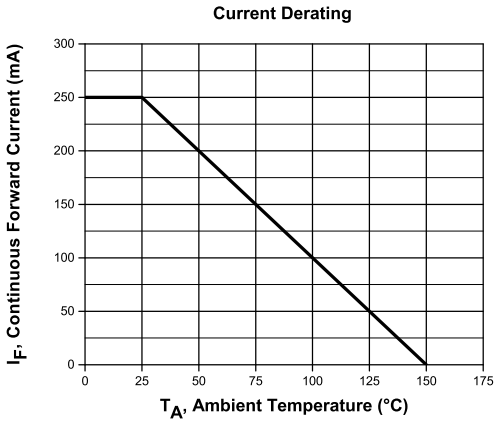


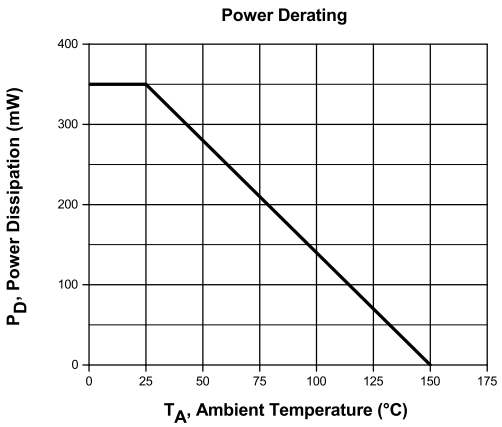
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TYPICAL ELECTRICAL CHARACTERISTICS

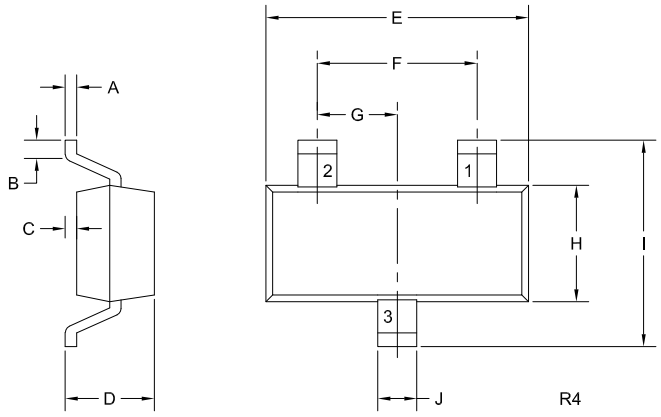




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Package Details
SOT-23 Case

Mechanical Drawing



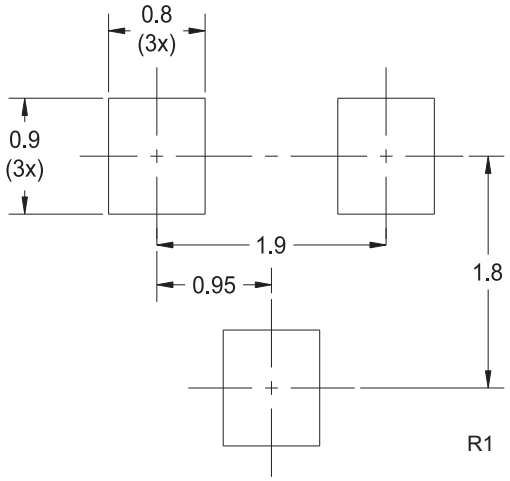
DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
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I	0.083	0.104	2.10	2.64
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R4)

Lead Code:
Reference individual device datasheet.

Part Marking: 2-4 Character Alpha/Numeric Code

Mounting Pad Geometry (Dimensions in mm)



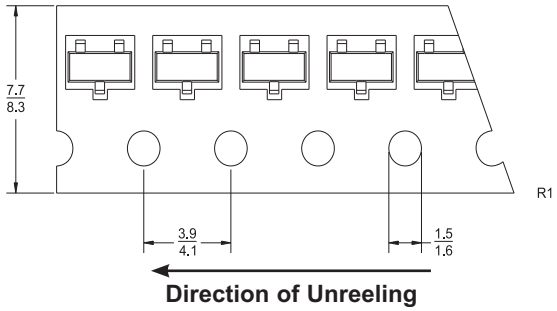
R4 (27-August 2021)

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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.

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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_2O_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.

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