CMSSH-3CE-RZ

ENHANCED SPECIFICATION
SURFACE MOUNT SILICON SCHOTTKY DIODES RUGGEDIZED PACKAGING

SOT-323 CASE

MARKING CODE: 3CE

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CMSSH-3CE-RZ features opposing polarity enhanced silicon Schottky diodes in an SOT-323 surface mount package. 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

FEATURED ENHANCED SPECIFICATIONS:
- ♦ I_F from 100mA MAX to 200mA MAX
- ♦ BV_R from 30V MIN to 40V MIN
- ♦ V_F from 1.0V MAX to 0.8V MAX

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
♦ **Peak Repetitive Reverse Voltage**	V_{RRM}	**40**	**V**
♦ **Continuous Forward Current**	I_F	**200**	**mA**
Peak Repetitive Forward Current	I_{FRM}	350	mA
Peak Forward Surge Current, tp=10ms	I_{FSM}	750	mA
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 PER DIODE: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_R	V_R=25V		90	500	nA
I_R	V_R=25V, T_A=100°C		25	100	µA
♦ **BV_R**	**I_R=100µA**	**40**	**50**		**V**
V_F	I_F=2.0mA		0.29	0.33	V
♦ **V_F**	**I_F=15mA**		**0.37**	**0.42**	**V**
♦ **V_F**	**I_F=100mA**		**0.51**	**0.80**	**V**
♦♦ **V_F**	**I_F=200mA**		**0.65**	**1.0**	**V**
C_J	V_R=1.0V, f=1.0MHz		7.0		pF
t_{rr}	I_F=I_R=10mA, I_{rr}=1.0mA, R_L=100Ω			5.0	ns

♦ Enhanced specification.
♦♦ Additional Enhanced specification.

R0 (16-April 2026)

CMSSH-3CE-RZ

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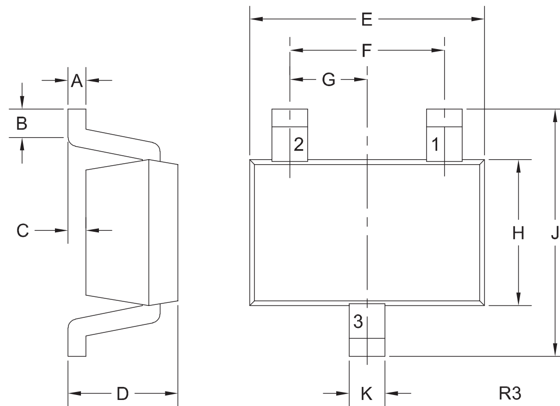
SURFACE MOUNT SILICON
SCHOTTKY DIODES
RUGGEDIZED PACKAGING

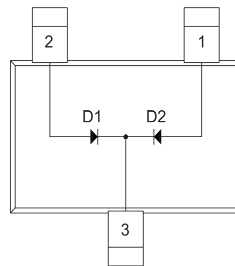
SOT-323 CASE - MECHANICAL OUTLINE



SYMBOL	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	0.002	0.008	0.05	0.20
B	0.004	-	0.10	-
C	-	0.004	-	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.045	0.053	1.15	1.35
J	0.079	0.087	2.00	2.20
K	0.008	0.016	0.20	0.40

SOT-323 (REV: R3)

PIN CONFIGURATIONS



LEAD CODE:
1) Anode D2
2) Anode D1
3) Cathode D1, D2

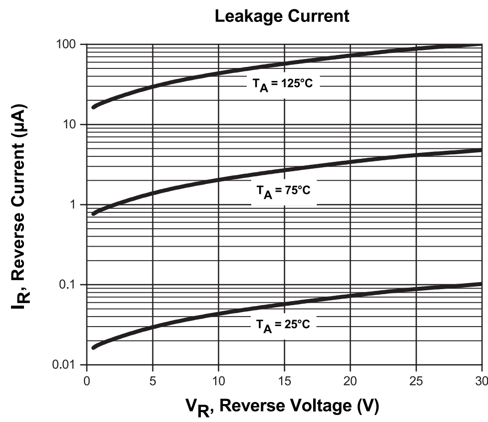
MARKING CODE: 3CE

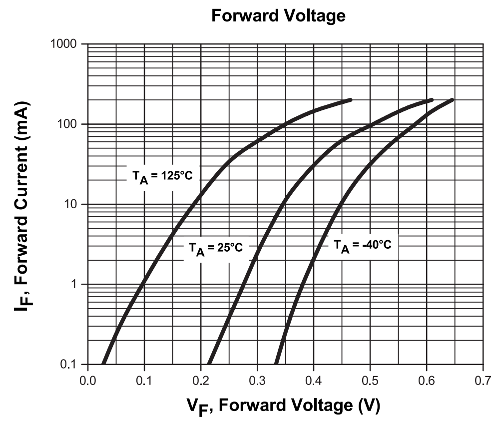
R0 (16-April 2026)

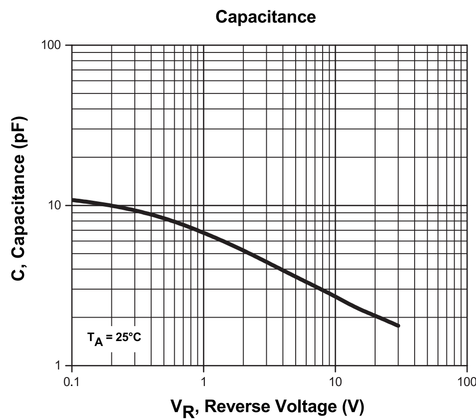
CMSSH-3CE-RZ

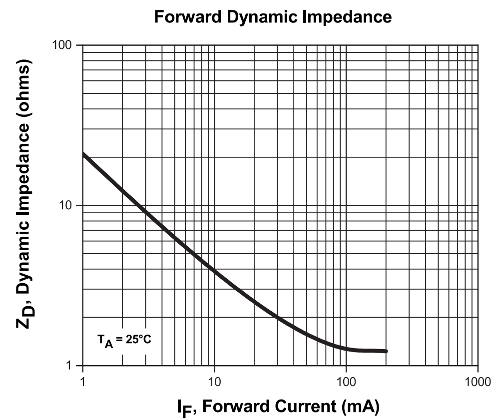
ENHANCED SPECIFICATION
SURFACE MOUNT SILICON
SCHOTTKY DIODES
RUGGEDIZED PACKAGING

TYPICAL ELECTRICAL CHARACTERISTICS









R0 (16-April 2026)

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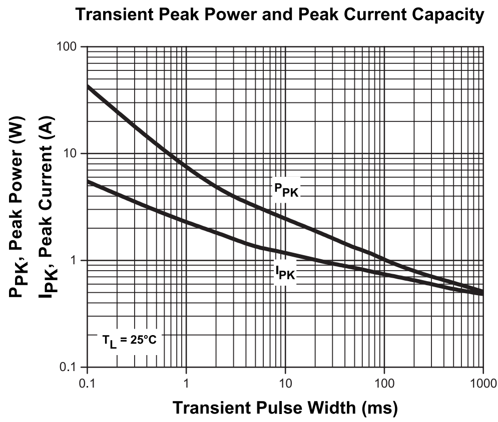
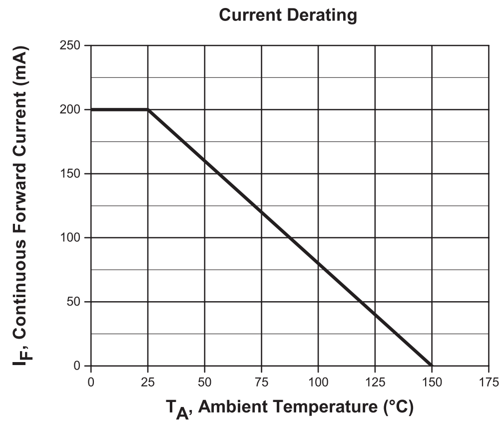
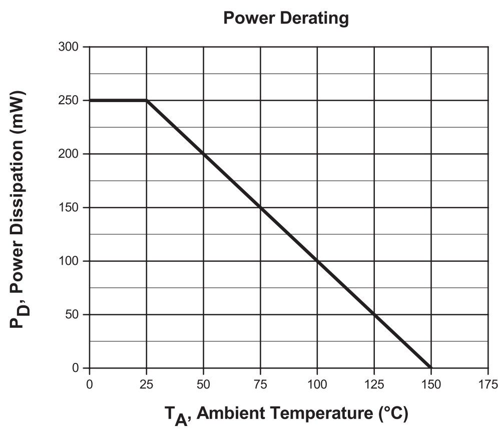
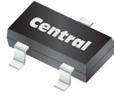




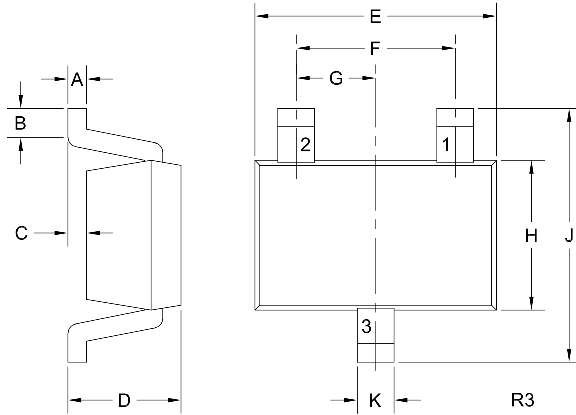


R0 (16-April 2026)

Package Details
SOT-323 Case



Mechanical Drawing



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.002	0.008	0.05	0.20
B	0.004	-	0.10	-
C	-	0.004	-	0.10
D	0.031	0.043	0.80	1.10
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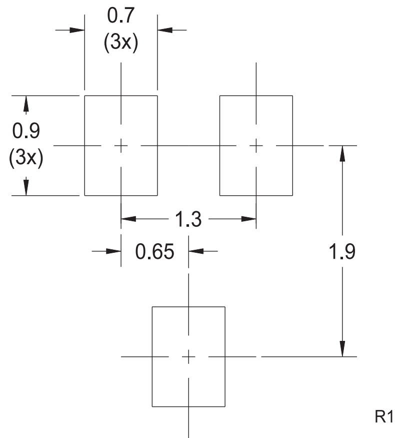
H	0.045	0.053	1.15	1.35
J	0.079	0.087	2.00	2.20
K	0.008	0.016	0.20	0.40

SOT-323 (REV: R3)

Lead Code:
Reference individual device datasheet.

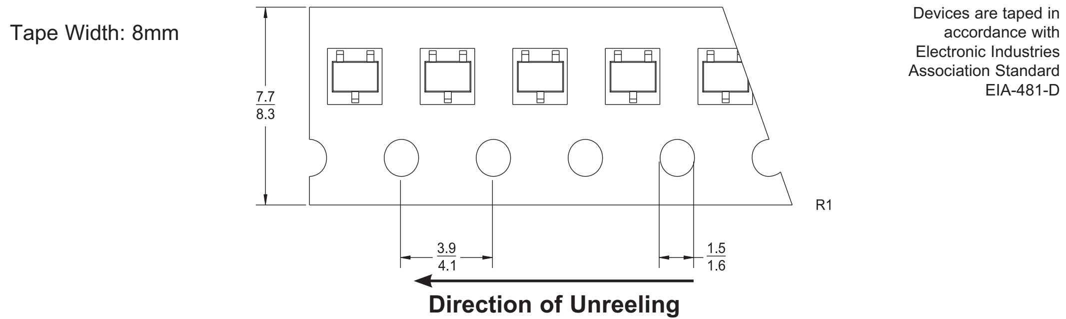
Part Marking: 2-3 Character Alpha/Numeric Code

Mounting Pad Geometry (Dimensions in mm)



R5 (29-April 2020)

Tape Dimensions and Orientation (Dimensions in mm)



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 and Ship Date.

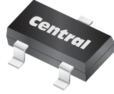
Reel Packing Information

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	12	6
	26	220,000	15x15x18	38x38x46	22	11

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.

Material Composition Specification
SOT-323 Case



Device average mass . . . . 5.47 mg
Fluctuation margin . . . . +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	4.2%	0.23	Si	7440-21-3	4.2%	0.23	42,048
bond wire	gold or copper	0.37%	0.02	Au	7440-57-5	0.37%	0.02	3,656
				Cu	7440-50-8			
leadframe	alloy 42 w/ silver plating	23.77%	1.3	Fe	7439-89-6	13.71%	0.75	137,112
				Ni	7440-02-0	9.51%	0.52	95,064
				Ag	7440-22-4	0.55%	0.03	5,484
encapsulation*	EMC	67.46%	3.69	silica	7631-86-9	49.91%	2.73	499,086
				epoxy resin	Proprietary	15.72%	0.86	157,221
				Sb_2O_3	1309-64-4	1.28%	0.07	12,797
				Br	7726-95-6	0.37%	0.02	3,656
				carbon	1333-86-4	0.18%	0.01	1,828
	EMC GREEN	67.46%	3.69	silica (fused)	60676-86-0	51.94%	2.841	519,442
				epoxy resin	29690-82-2	6.75%	0.369	67,456
				phenol resin	9003-35-4	6.54%	0.358	65,433
				carbon black	1333-86-4	0.2%	0.011	2,023
				metal hydroxide	1309-42-8	2.02%	0.111	20,235
plating**	tin/lead process	4.2%	0.23	Sn	7440-31-5	3.29%	0.18	32,907
				Pb	7439-92-1	0.91%	0.05	9,141
	matte tin	4.2%	0.23	Sn	7440-31-5	4.2%	0.23	42,048

*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
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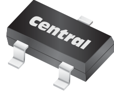
Material Composition Specification

SOT-323 Case



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