

CMR3U-01 CMR3U-06
 CMR3U-02 CMR3U-10
 CMR3U-04

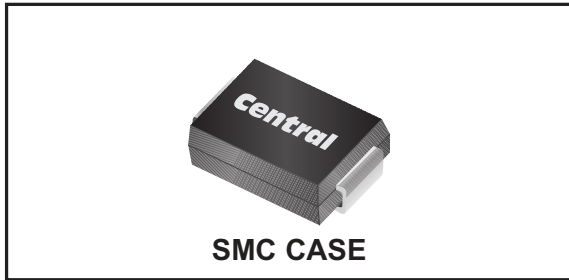


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**SURFACE MOUNT SILICON
 ULTRA FAST RECOVERY RECTIFIERS
 3.0 AMP, 100 THRU 1000 VOLT**

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMR3U-01 series 3.0 Amp surface mount silicon Ultra Fast Recovery rectifiers are highly reliable components designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 16mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.



MARKING CODE: SEE MARKING CODE TABLE ON FOLLOWING PAGE

FEATURES:

- High reliability
- Glass passivated chip
- Special selections available
- "C" bend construction provides strain relief when mounted on PC board

MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

	SYMBOL	CMR3U-01	CMR3U-02	CMR3U-04	CMR3U-06	CMR3U-10	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	400	600	1000	V
DC Blocking Voltage	V_R	100	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	280	420	700	V
Average Forward Current ($T_A=75^\circ\text{C}$)	I_O			3.0			A
Peak Forward Surge Current, $t_p=8.3\text{ms}$	I_{FSM}			100			A
Operating and Storage Junction Temperature	T_J, T_{stg}			-65 to +175			$^\circ\text{C}$
Thermal Resistance	Θ_{JL}			10			$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

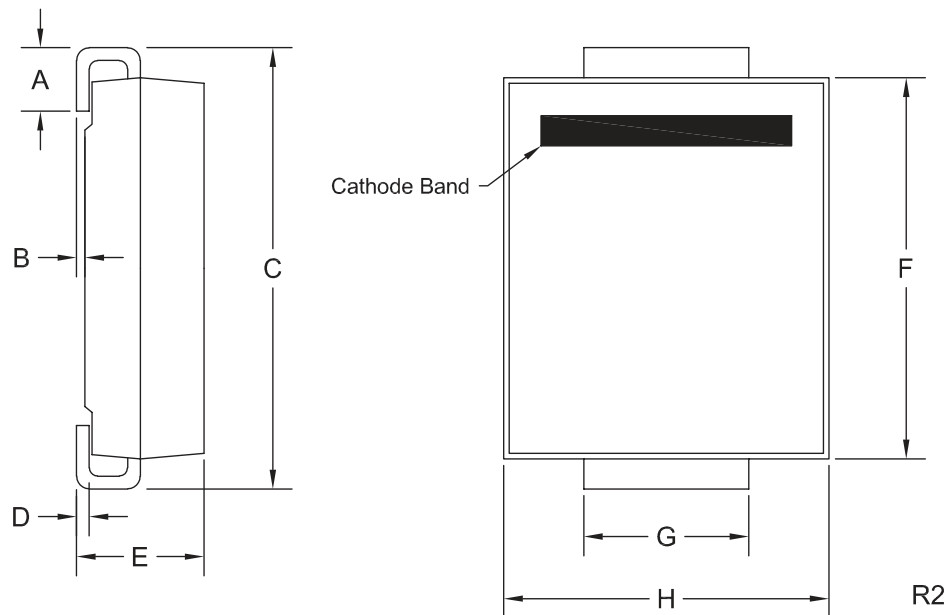
SYMBOL	TEST CONDITIONS	MAX	UNITS
I_R	$V_R=\text{Rated } V_{RRM}$	5.0	μA
I_R	$V_R=\text{Rated } V_{RRM}, T_A=100^\circ\text{C}$	500	μA
V_F	$I_F=3.0\text{A}$ (CMR3U-01, -02)	1.00	V
V_F	$I_F=3.0\text{A}$ (CMR3U-04)	1.25	V
V_F	$I_F=3.0\text{A}$ (CMR3U-06)	1.60	V
V_F	$I_F=3.0\text{A}$ (CMR3U-10)	1.70	V
t_{rr}	$I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$ (CMR3U-01, -02, -04)	50	ns
t_{rr}	$I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$ (CMR3U-06, -10)	100	ns

CMR3U-01 CMR3U-06
 CMR3U-02 CMR3U-10
 CMR3U-04



**SURFACE MOUNT SILICON
 ULTRA FAST RECOVERY RECTIFIERS
 3.0 AMP, 100 THRU 1000 VOLT**

SMC CASE - MECHANICAL OUTLINE



DEVICE	MARKING CODE
CMR3U-01	CU301
CMR3U-02	CU302
CMR3U-04	CU304
CMR3U-06	CU306
CMR3U-10	CU310

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.002	0.008	0.05	0.20
C	0.305	0.320	7.75	8.13
D	0.006	0.012	0.15	0.31
E	0.079	0.103	2.00	2.62
F	0.260	0.280	6.60	7.11
G	0.108	0.128	2.75	3.25
H	0.220	0.245	5.59	6.22

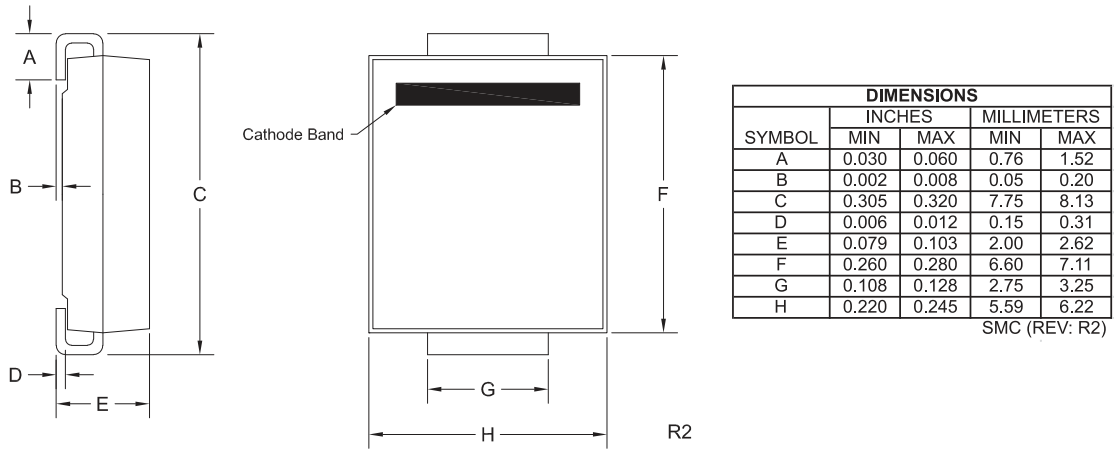
SMC (REV: R2)

Package Details

SMC Case



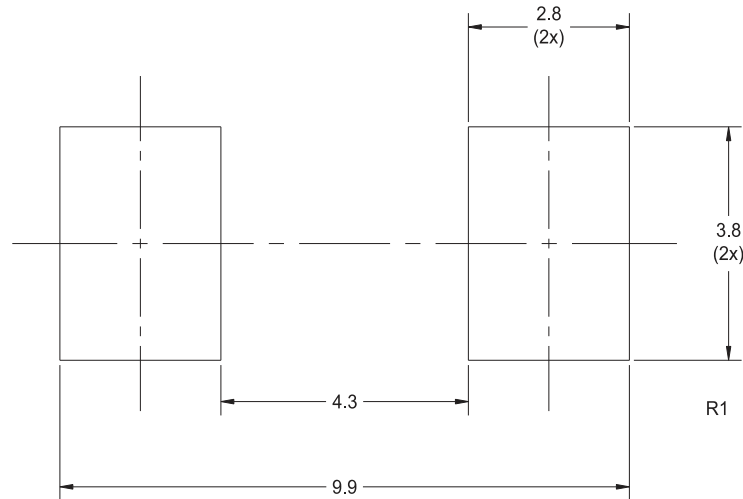
Mechanical Drawing



Lead Code:
Reference individual device datasheet.

Part Marking: 3-6 Character Alpha/Numeric Code

Mounting Pad Geometry (Dimensions in mm)



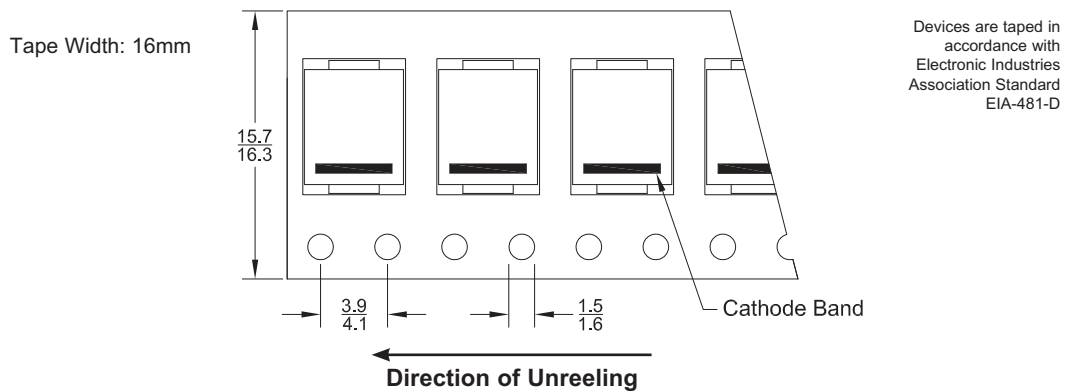
R4 (18-February 2021)

Package Details

SMC Case



Tape Dimensions and Orientation (Dimensions in mm)



Packaging Base

13" 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 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
13"	4	12,000	15x4x15	38x10x38	12	6
	11	33,000	15x15x9	38x38x23	30	14
	24	72,000	15x15x18	38x38x46	64	29

Ordering Information

- 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 (18-February 2021)

Material Composition Specification

SMC Case



Device average mass 232.5 mg
 Fluctuation margin +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	1.63%	3.8	Si	7440-21-3	1.63%	3.8	16,344
leadframe	copper	39.11%	90.92	Cu	7440-50-8	39.11%	90.92	391,054
die attach	high temperature solder paste	1.88%	4.36	Pb	7439-92-1	1.73%	4.033	17,346
				Sn	7440-31-5	0.09%	0.218	938
				Ag	7440-22-4	0.05%	0.109	469
encapsulation*	EMC	56.77%	132	silica	7631-86-9	38.61%	89.76	386,065
				epoxy resin	29690-82-2	11.35%	26.4	113,548
				phenol resin	9003-35-4	5.68%	13.2	56,774
				Sb ₂ O ₃	1309-64-4	0.57%	1.32	5,677
				Br	7726-95-6	0.57%	1.32	5,677
	EMC GREEN	56.77%	132	silica (fused)	60676-86-0	43.72%	101.64	437,161
				epoxy resin	29690-82-2	5.68%	13.2	56,774
				phenol resin	9003-35-4	5.51%	12.804	55,071
				carbon black	1333-86-4	0.17%	0.396	1,703
				metal hydroxide	1309-42-8	1.7%	3.96	17,032
plating**	tin/lead process	0.61%	1.42	Sn	7440-31-5	0.49%	1.136	4,886
				Pb	7439-92-1	0.12%	0.284	1,222
	matte tin	0.61%	1.42	Sn	7440-31-5	0.61%	1.42	6,108

*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.

R6 (16-July 2018)

Material Composition Specification

SMC Case



Device average mass 232.5 mg
 Fluctuation margin +/-10%

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	1.63%	3.8	Si	7440-21-3	1.63%	3.8	16,344
leadframe	copper	39.11%	90.92	Cu	7440-50-8	39.11%	90.92	391,054
die attach	high temperature solder paste	1.88%	4.36	Pb	7439-92-1	1.73%	4.033	17,346
				Sn	7440-31-5	0.09%	0.218	938
				Ag	7440-22-4	0.05%	0.109	469
encapsulation*	EMC	56.77%	132	silica	7631-86-9	38.61%	89.76	386,065
				epoxy resin	29690-82-2	11.35%	26.4	113,548
				phenol resin	9003-35-4	5.68%	13.2	56,774
				Sb ₂ O ₃	1309-64-4	0.57%	1.32	5,677
				Br	7726-95-6	0.57%	1.32	5,677
	EMC GREEN	56.77%	132	silica (fused)	60676-86-0	43.72%	101.64	437,161
				epoxy resin	29690-82-2	5.68%	13.2	56,774
				phenol resin	9003-35-4	5.51%	12.804	55,071
				carbon black	1333-86-4	0.17%	0.396	1,703
				metal hydroxide	1309-42-8	1.7%	3.96	17,032
plating**	tin/lead process	0.61%	1.42	Sn	7440-31-5	0.49%	1.136	4,886
				Pb	7439-92-1	0.12%	0.284	1,222
	matte tin	0.61%	1.42	Sn	7440-31-5	0.61%	1.42	6,108

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R6 (16-July 2018)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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