

CQ223-2M  
CQ223-2N

SURFACE MOUNT SILICON  
TRIACS  
2.0 AMP, 600 THRU 800 VOLT



SOT-223 CASE



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CQ223-2M and CQ223-2N are epoxy molded silicon TRIACs designed for full wave AC control applications featuring gate triggering in all four (4) quadrants.

**MARKING: FULL PART NUMBER**

MAXIMUM RATINGS: ( $T_C=25^\circ\text{C}$ unless otherwise noted)	SYMBOL	CQ223-2M	CQ223-2N	UNITS
Peak Repetitive Off-State Voltage	$V_{DRM}$	600	800	V
RMS On-State Current ( $T_C=80^\circ\text{C}$ )	$I_T(\text{RMS})$		2.0	A
Peak One Cycle Surge, $t=10\text{ms}$	$I_{TSM}$		10	A
$I^2t$ Value for Fusing, $t=10\text{ms}$	$I^2t$		0.5	$\text{A}^2\text{s}$
Peak Gate Power, $t_p=10\mu\text{s}$	$P_{GM}$		3.0	W
Average Gate Power Dissipation	$P_{G(AV)}$		0.2	W
Peak Gate Current, $t_p=10\mu\text{s}$	$I_{GM}$		1.2	A
Operating Junction Temperature	$T_J$	-40 to +125		$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 to +150		$^\circ\text{C}$
Thermal Resistance	$\Theta_{JA}$		62.5	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{DRM}$	Rated $V_{DRM}$ , $R_{GK}=1\text{K}\Omega$			5.0	$\mu\text{A}$
$I_{DRM}$	Rated $V_{DRM}$ , $R_{GK}=1\text{K}\Omega$ , $T_C=125^\circ\text{C}$			200	$\mu\text{A}$
$I_{GT}$	$V_D=12\text{V}$ , QUAD I, II, III		1.35	5.00	mA
$I_{GT}$	$V_D=12\text{V}$ , QUAD IV		3.75	8.00	mA
$I_H$	$R_{GK}=1\text{K}\Omega$		1.2	5.0	mA
$V_{GT}$	$V_D=12\text{V}$ , QUAD I, II, III, IV		1.1	1.8	V
$V_{TM}$	$I_{TM}=2.0\text{A}$ , $t_p=380\mu\text{s}$		1.50	1.75	V
$V_{TM}$	$I_{TM}=3.0\text{A}$ , $t_p=380\mu\text{s}$		1.7	2.0	V
dv/dt	$V_D=2/3 V_{DRM}$ , $T_C=125^\circ\text{C}$	2.5			$\text{V}/\mu\text{s}$

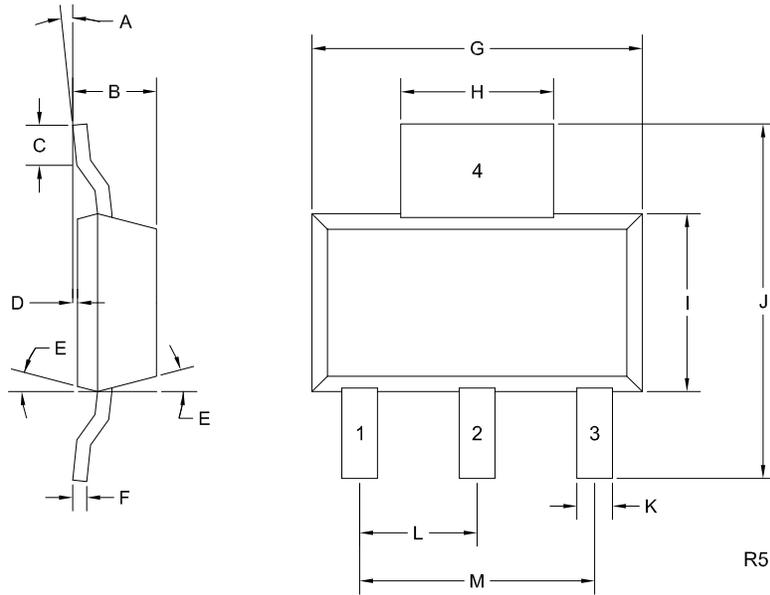
R3 (30-April 2019)

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SOT-223 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) MT1
- 2) MT2
- 3) Gate
- 4) MT2

MARKING:

FULL PART NUMBER

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0°	10°	0°	10°
B	0.059	0.071	1.50	1.80
C	0.018	---	0.45	---
D	0.000	0.004	0.00	0.10
E	10°		10°	
F	0.009	0.014	0.23	0.35
G	0.248	0.270	6.30	6.85
H	0.114	0.122	2.90	3.10
I	0.130	0.146	3.30	3.70
J	0.264	0.287	6.70	7.30
K	0.024	0.033	0.60	0.85
L	0.091		2.30	
M	0.181		4.60	

SOT-223 (REV: R5)

R3 (30-April 2019)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### 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).

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### CONTACT US

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