

CQD-8M3
SILICON
THREE-QUADRANT TRIAC
8.0 AMP, 600 VOLT



DPAK CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CQD-8M3 is an epoxy molded silicon TRIAC designed for full wave AC control applications featuring gate triggering in three quadrants.

MARKING: FULL PART NUMBER

APPLICATIONS:

- Motor controls
- General purpose AC switching
- High power inductive load switching

FEATURES:

- 3Q technology for noise immunity
- High commutation capability
- Triggering in three quadrants only

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

Peak Repetitive Off-State Voltage	V_{DRM}	600	V
RMS On-State Current ($T_L=100^\circ\text{C}$)	$I_{\text{T(RMS)}}$	8.0	A
Peak One Cycle Surge Current, 50Hz	I_{TSM}	70	A
I^2t Value for Fusing, $t=10\text{ms}$	I^2t	32	A^2s
Average Gate Power Dissipation ($T_J=125^\circ\text{C}$)	$P_{\text{G(AV)}}$	1.0	W
Peak Gate Current, $t_p=20\mu\text{s}$ ($T_J=125^\circ\text{C}$)	I_{GM}	4.0	A
Critical Rate of Rise of On-State Current Repetitive, $f=100\text{Hz}$ ($T_J=125^\circ\text{C}$)	di/dt	50	$\text{A}/\mu\text{s}$
Operating Junction Temperature	T_J	-40 to +125	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to +150	$^\circ\text{C}$
Thermal Resistance (Note 1)	θ_{JA}	75	$^\circ\text{C}/\text{W}$
Thermal Resistance	θ_{JL}	1.6	$^\circ\text{C}/\text{W}$

SYMBOL

V_{DRM}	600	
$I_{\text{T(RMS)}}$	8.0	
I_{TSM}	70	
I^2t	32	
$P_{\text{G(AV)}}$	1.0	
I_{GM}	4.0	
di/dt	50	
T_J	-40 to +125	
T_{stg}	-40 to +150	
θ_{JA}	75	
θ_{JL}	1.6	

UNITS

V
A
A
A^2s
W
A
$\text{A}/\mu\text{s}$
$^\circ\text{C}$
$^\circ\text{C}$
$^\circ\text{C}/\text{W}$
$^\circ\text{C}/\text{W}$

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

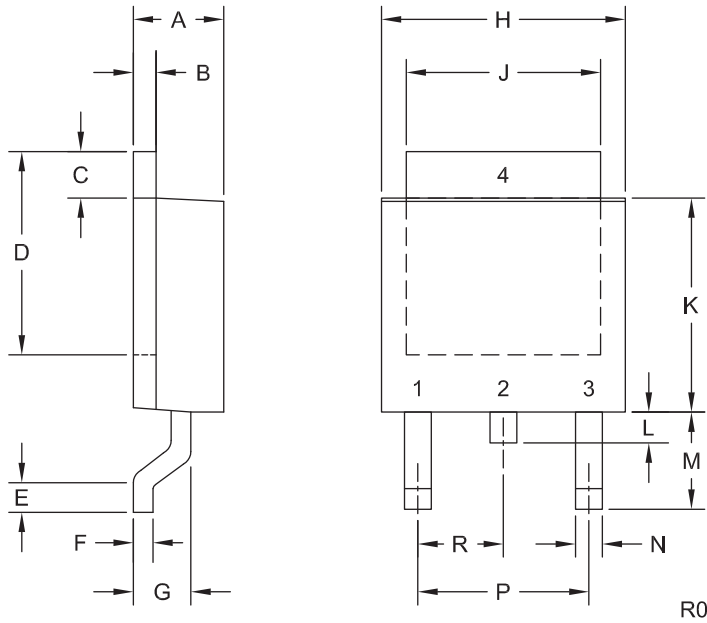
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{\text{DRM}}, I_{\text{RRM}}$	$V_{\text{DRM}}, V_{\text{RRM}}=600\text{V}$			5.0	μA
I_{GT}	$V_{\text{D}}=12\text{V}, R_{\text{L}}=30\Omega, \text{QUAD I, II, III}$			50	mA
I_{H}	$V_{\text{D}}=12\text{V}, I_{\text{T}}=100\text{mA}$			50	mA
V_{GT}	$V_{\text{D}}=12\text{V}, R_{\text{L}}=30\Omega, \text{QUAD I, II, III}$			1.3	V
V_{TM}	$I_{\text{TM}}=11\text{A}, t_p=380\mu\text{s}$		1.24	1.55	V
dv/dt	$V_{\text{D}}=2/3 V_{\text{DRM}}, R_{\text{GK}}=\infty, T_J=125^\circ\text{C}$			1000	$\text{V}/\mu\text{s}$

Note 1) Mounted on PC board with 8mm^2 (0.013mm thick) copper pad area.

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DPAK CASE - MECHANICAL OUTLINE



LEAD CODE:

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

**MARKING:
 FULL PART NUMBER**

SYMBOL	DIMENSIONS		DIMENSIONS	
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.083	0.108	2.10	2.75
B	0.016	0.032	0.40	0.81
C	0.035	0.063	0.89	1.60
D	0.203	0.228	5.15	5.79
E	0.020	-	0.51	-
F	0.018	0.024	0.45	0.60
G	0.051	0.071	1.30	1.80
H	0.248	0.268	6.30	6.81
J	0.197	0.217	5.00	5.50
K	0.209	0.245	5.30	6.22
L	0.025	0.040	0.64	1.02
M	0.090	0.115	2.30	2.91
N	0.012	0.045	0.30	1.14
P	0.180		4.60	
R	0.090		2.30	

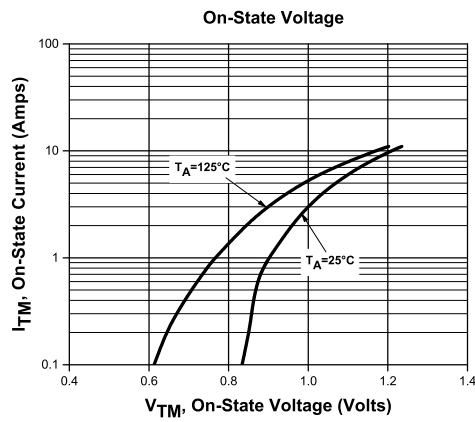
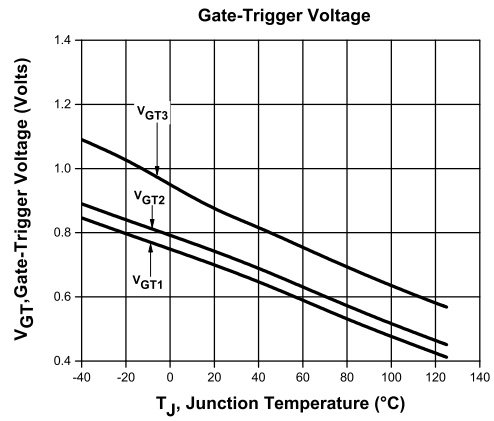
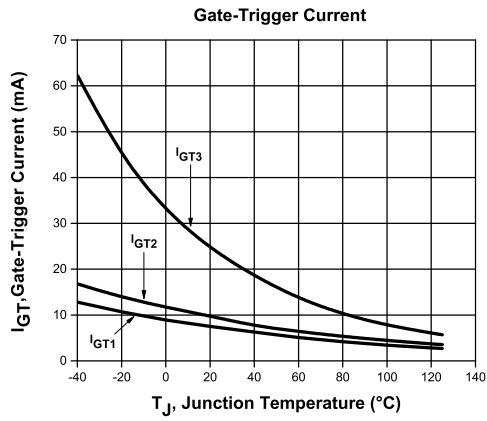
DPAK (REV: R0)

R1 (7-October 2015)

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TYPICAL ELECTRICAL CHARACTERISTICS

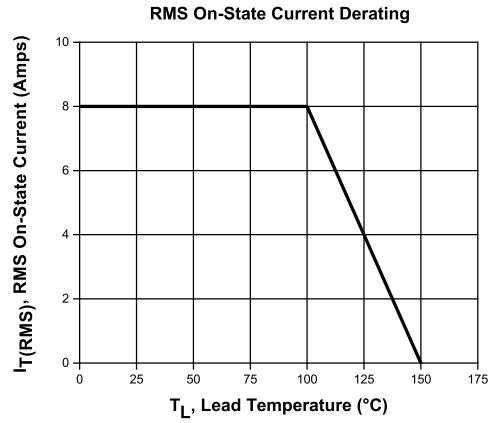
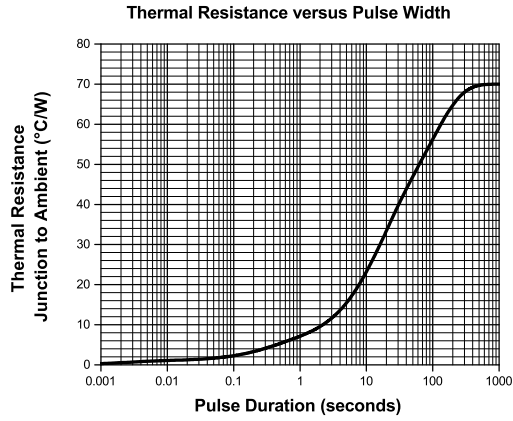


R1 (7-October 2015)

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TYPICAL ELECTRICAL CHARACTERISTICS



R1 (7-October 2015)

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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

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