CQD-8M3

SILICON
THREE-QUADRANT TRIAC
8.0 AMP, 600 VOLT

DPAK CASE

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

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

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_{DRM}, I_{RRM}	V_{DRM}, V_{RRM}=600V			5.0	μA
I_{GT}	V_D=12V, R_L=30Ω, QUAD I, II, III			50	mA
I_H	V_D=12V, I_T=100mA			50	mA
V_{GT}	V_D=12V, R_L=30Ω, QUAD I, II, III			1.3	V
V_{TM}	I_{TM}=11A, tp=380μs		1.24	1.55	V
dv/dt	V_D=⅔V_{DRM}, R_{GK}=∞, T_J=125°C			1000	V/μs

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

R1 (7-October 2015)

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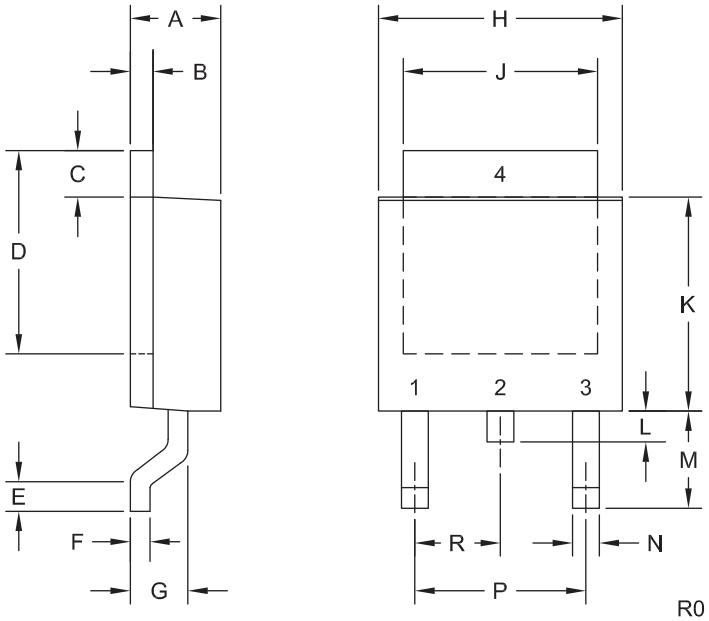
DPAK CASE - MECHANICAL OUTLINE



R0

LEAD CODE:
1) MT1
2) MT2
3) Gate
4) MT2

MARKING:
FULL PART NUMBER

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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)

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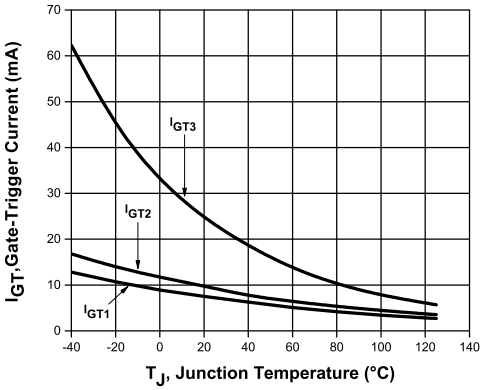
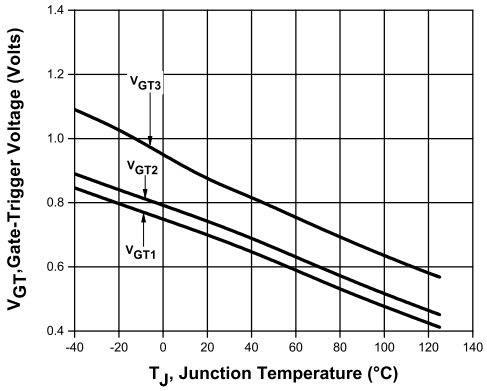
TYPICAL ELECTRICAL CHARACTERISTICS

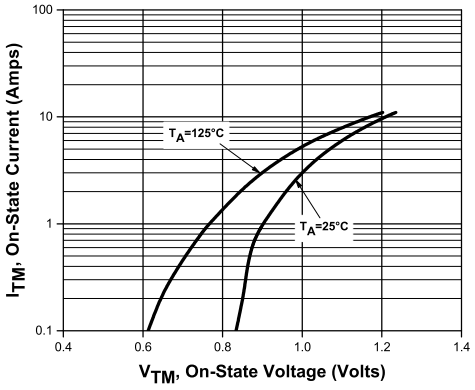
Gate-Trigger Current



Gate-Trigger Voltage



On-State Voltage



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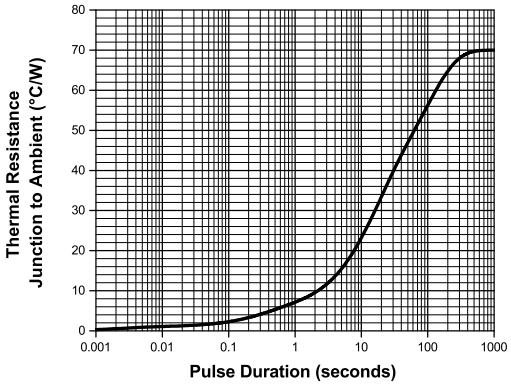
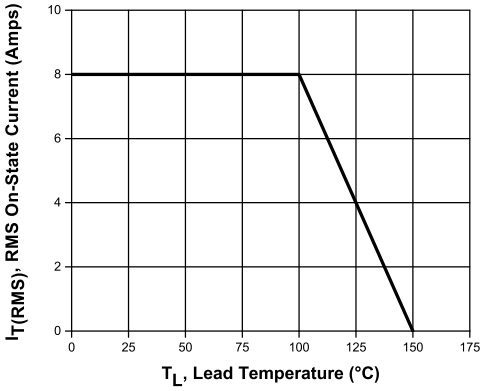
TYPICAL ELECTRICAL CHARACTERISTICS

Thermal Resistance versus Pulse Width



RMS On-State Current Derating



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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