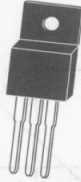


CQ220-12MFP  
CQ220-12NFP

12 AMP TRIAC  
600 THRU 800 VOLTS

**FULL  
PAK**



TO-220FP CASE

# Central<sup>TM</sup> Semiconductor Corp.

## DESCRIPTION:

The CENTRAL SEMICONDUCTOR CQ220-12MFP series type is an Epoxy Molded Silicon Triac designed for full wave AC control applications featuring gate triggering in all four (4) quadrants.

## FULL PAK:

- Fully insulated plastic case.
- Suitable for automatic insertion.
- No mica insulator required.
- Does not require non-conductive nylon hardware.
- Can be easily mounted with metal screw or rivet.

## MARKING CODE: FULL PART NUMBER

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

	SYMBOL	CQ220 -12MFP	CQ220 -12NFP	UNITS
Peak Repetitive Off-State Voltage	$V_{DRM}$	600	800	V
RMS On-State Current ( $T_C=90^\circ\text{C}$ )	$I_T(\text{RMS})$		12	A
Peak One Cycle Surge ( $t=8.3\text{ms}$ )	$I_{TSM}$		80	A
$I^2t$ Value for Fusing ( $t=8.3\text{ms}$ )	$I^2t$		27	$\text{A}^2\text{s}$
Peak Gate Power ( $t_p=10\mu\text{s}$ )	$P_{GM}$		40	W
Average Gate Power Dissipation	$P_G(\text{AV})$		1.0	W
Peak Gate Current ( $t_p=10\mu\text{s}$ )	$I_{GM}$		4.0	A
Peak Gate Voltage ( $t_p=10\mu\text{s}$ )	$V_{GM}$		16	V
Critical Rate of Rise of On-State Current				
Repetitive ( $f=60\text{Hz}$ )	$di/dt$		10	$\text{A}/\mu\text{s}$
Storage Temperature	$T_{stg}$	-40 to +150		$^\circ\text{C}$
Junction Temperature	$T_J$	-40 to +125		$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$		60	$^\circ\text{C}/\text{W}$
Thermal Resistance	$\theta_{JC}$		2.7	$^\circ\text{C}/\text{W}$

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

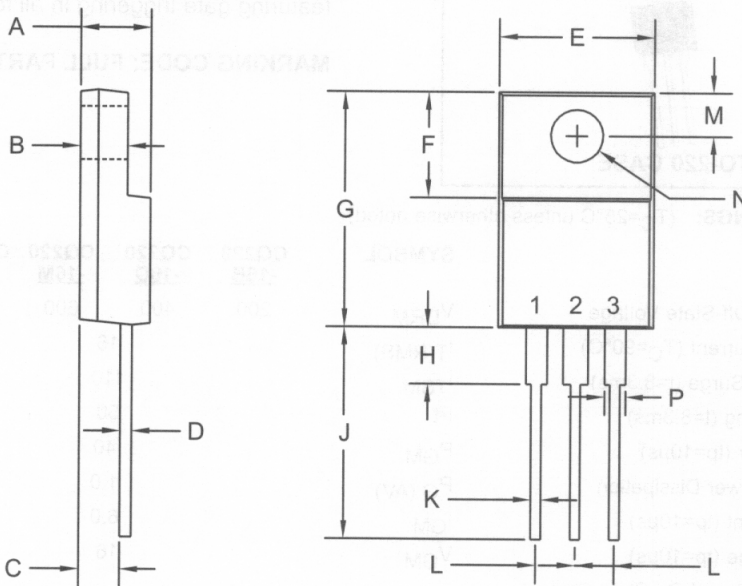
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{DRM}$	Rated $V_{DRM}$			10	$\mu\text{A}$
$I_{DRM}$	Rated $V_{DRM}$ , $T_C=125^\circ\text{C}$			500	$\mu\text{A}$
$I_{GT}$	$V_D=12\text{V}$ , $R_L=10\Omega$ , QUAD I, II, III		9.9	20	$\text{mA}$
$I_{GT}$	$V_D=12\text{V}$ , $R_L=10\Omega$ , QUAD IV		24.3	50	$\text{mA}$
$I_H$	$I_T=100\text{mA}$		14.1	25	$\text{mA}$
$V_{GT}$	$V_D=12\text{V}$ , $R_L=10\Omega$ , QUAD I, II, III		1.10	1.50	V
$V_{GT}$	$V_D=12\text{V}$ , $R_L=10\Omega$ , QUAD IV		2.10	2.50	V
$V_{TM}$	$I_{TM}=17\text{A}$ , $t_p=380\mu\text{s}$		1.33	1.50	V
$dv/dt$	$V_D=2/3 V_{DRM}$ , $R_{GK}=\infty$ , $T_C=125^\circ\text{C}$	10			$\text{V}/\mu\text{s}$

R1 (14-September 2004)

CQ220-12MFP  
CQ220-12NFP

12 AMP TRIAC  
600 THRU 800 VOLTS

### TO-220FP CASE - MECHANICAL OUTLINE



DATA SHEETS

R2

#### LEAD CODE:

- 1) MT1
- 2) MT2
- 3) GATE

#### MARKING CODE: FULL PART NUMBER

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.180	0.190	4.57	4.83
B	0.101	0.111	2.57	2.83
C	0.099	0.103	2.51	2.62
D	0.018	0.025	0.45	0.63
E	0.408	0.418	10.37	10.63
F	0.238	0.258	6.06	6.56
G	0.625	0.635	15.86	16.12
H	0.125	0.135	3.18	3.43
J	0.530	0.540	13.46	13.72
K	0.026	0.031	0.65	0.79
L	0.100		2.54	
M	0.124	0.128	3.15	3.25
N (DIA)	0.116	0.119	2.95	3.03
P	0.048	0.053	1.23	1.36

TO-220FP (REV: R2)