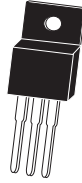


CQ220-12MFP
CQ220-12NFP

12 AMP TRIAC
600 THRU 800 VOLTS

**FULL
PAK**



TO-220FP CASE

CentralTM

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)

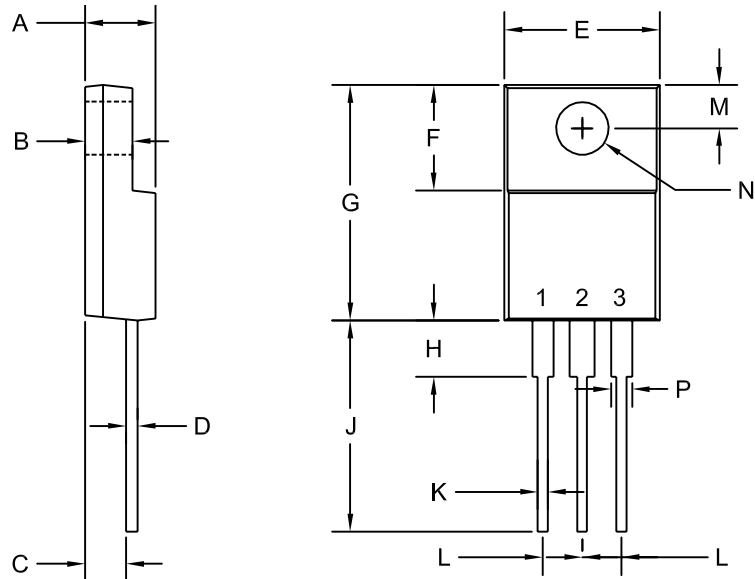
	SYMBOL	CQ220 -12MFP	CQ220 -12NFP	UNITS
Peak Repetitive Off-State Voltage	V_{DRM}	600	800	V
RMS On-State Current ($T_C=90^{\circ}\text{C}$)	$I_{\text{T(RMS)}}$	12		A
Peak One Cycle Surge ($t=8.3\text{ms}$)	I_{TSM}	80		A
I^2t Value for Fusing ($t=8.3\text{ms}$)	I^2t	27		A^2s
Peak Gate Power ($t_p=10\mu\text{s}$)	P_{GM}	40		W
Average Gate Power Dissipation	$P_{\text{G (AV)}}$	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	θ_{JA}	60		$^{\circ}\text{C}/\text{W}$
Thermal Resistance	θ_{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	μA
I_{DRM}	Rated V_{DRM} , $T_C=125^{\circ}\text{C}$			500	μA
I_{GT}	$V_{\text{D}}=12\text{V}$, $R_{\text{L}}=10\Omega$, QUAD I, II, III		9.9	20	mA
I_{GT}	$V_{\text{D}}=12\text{V}$, $R_{\text{L}}=10\Omega$, QUAD IV		24.3	50	mA
I_{H}	$I_{\text{T}}=100\text{mA}$		14.1	25	mA
V_{GT}	$V_{\text{D}}=12\text{V}$, $R_{\text{L}}=10\Omega$, QUAD I, II, III		1.10	1.50	V
V_{GT}	$V_{\text{D}}=12\text{V}$, $R_{\text{L}}=10\Omega$, QUAD IV		2.10	2.50	V
V_{TM}	$I_{\text{TM}}=17\text{A}$, $t_p=380\mu\text{s}$		1.33	1.50	V
dv/dt	$V_{\text{D}}=2/3 V_{\text{DRM}}$, $R_{\text{GK}}=\infty$, $T_C=125^{\circ}\text{C}$	10			$\text{V}/\mu\text{s}$

R1 (14-September 2004)

TO-220FP CASE - MECHANICAL OUTLINE



R2

LEAD CODE:

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

MARKING CODE:

FULL PART NUMBER

SYMBOL	DIMENSIONS			
	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)

R1 (14-September 2004)