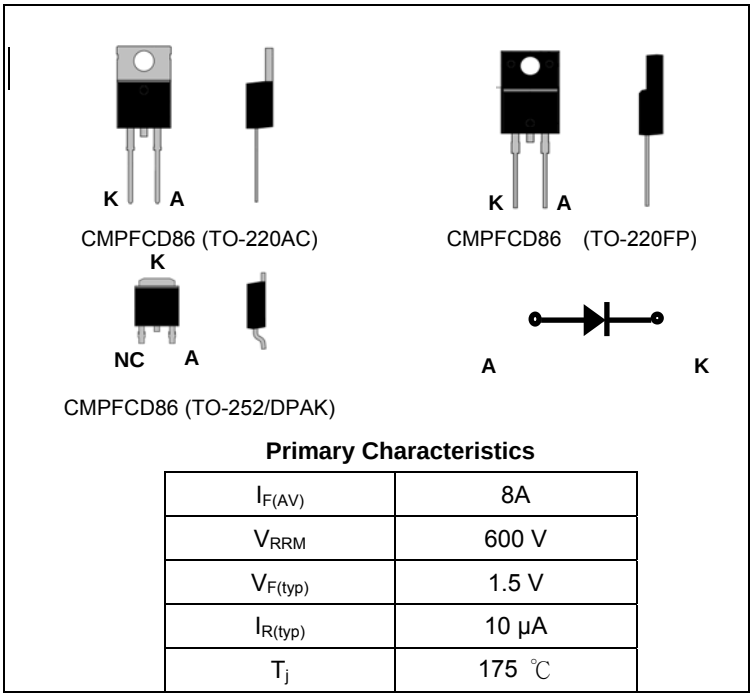
CMPFCD86
PFC Diode (8A/600V)

FEATURES

- Fast switching for high efficiency
- Low noise
- Trr ~ 25ns
- Ultra low reverse leakage current
- High voltage ultra faster diode PFC application
- High inrush current



Primary Characteristics

$I_{F(AV)}$	8A
V_{RRM}	600 V
$V_{F(typ)}$	1.5 V
$I_{R(typ)}$	10 μA
T_j	175 ℃

MECHANICAL DATA

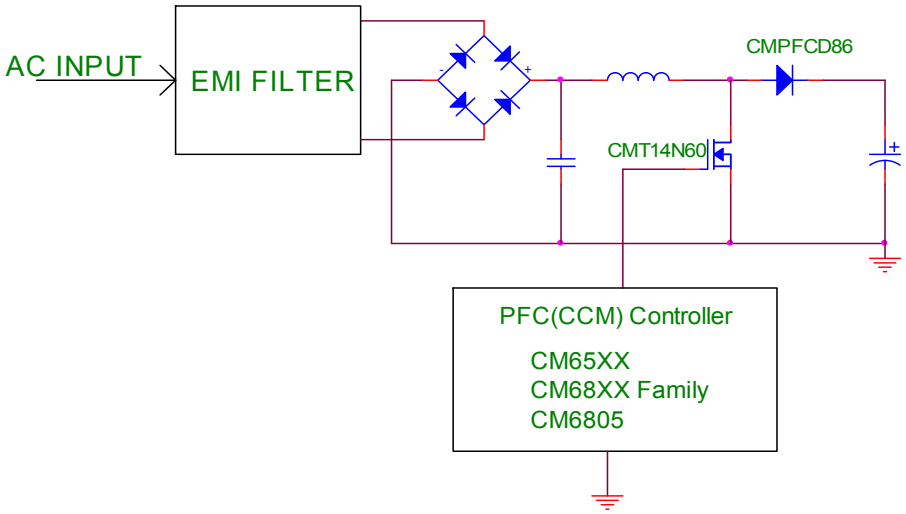
- Case : Molded plastic TO-220AC / TO-220FP
- Epoxy : UL94V-0 rate flame retardant
- Terminals : Solder able per MIL-STD-202 method 208
- 265℃ Max. for 10 Seconds
- Maximum Mounting Torque 6 (5) Kg-cm(lbf-in)

ORDERING INFORMATION

Part Number	Temperature Range	Package
CMPFCD86XN220*	-55℃ to 175℃	TO-220AC
CMPFCD86GN220*	-55℃ to 175℃	TO-220AC
CMPFCD86XN220FP*	-55℃ to 175℃	TO-220FP
CMPFCD86GN220FP*	-55℃ to 175℃	TO-220FP
CMPFCD86XN252*	-55℃ to 175℃	TO-252

*Note : G : Suffix for Pb Free Product
X : Suffix for Halogen Free
*Note : N : TO

APPLICATION CIRCUIT



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified. Single phase, half wave , 60Hz , resistive or inductive load.
For capacitive load , derate current by 20%

Symbol	Characteristics		CMPFCD86 Rating	Unit
V_{RRM}	Recurrent Peak Reverse Voltage		600	V
V_{DC}	DC Blocking Voltage		600	V
$IF_{(AV)}$	Average Forward Rectified Current @Tc=140℃		8	A
I_{FSM}	Peak Forward Surge Current 8.3ms single half sine-wave Super imposed on rated load (JEDEC Method)		90	A
I_{FSM}	Peak Forward Surge Current 4ms single half sine-wave		110	A
I_{FSM}	Peak Forward Surge Current 1ms single half sine-wave		200	A
I_{FSM}	Peak Forward Surge Current 4ms single Square-wave superimposed on rated load		90	A
I_{FSM}	Peak Forward Surge Current 1.0ms single Square-wave superimposed on rated load (JEDEC Method)		150	A
I^2t	I^2t Value For Fusing	Tp=10ms	91	A^2s
V_F	Instantaneous Forward Voltage (Typical) @8A	T_J=25℃	1.5	V
		T_J=125℃	1.25	
I_R	DC Reverse Current	T_J=25℃	10	uA
	At Rated DC Blocking Voltage	T_J=150℃	45	
Trr	Maximum Reverse Recovery Time			
	Test Conditions : I_F=0.5A , Ir=1.0A , Irr=0.25A		25	nS
	Test Conditions : I_F=1A, dI_F/dt = -50A/uS, V_R=30V		35	
C_J	Typical Junction Capacitance (note1)		36	pF
$R_{\theta JC}$	Typical Thermal Resistance (note2)	TO-220AC TO-252	2.2	℃/ W
		TO-220FP	4.6	
T_J	Operating Temperature Range		-55~+175	℃
T_{STG}	Storage Temperature Range		-55~+175	℃
$R_{\theta JA}$	Typical Thermal Resistance	TO-220AC	60	℃
		TO-220FP	50	
		TO-252	80	

Notes : 1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts DC.
2. Thermal Resistance junction to case.

TYPICAL CHARACTERISTICS

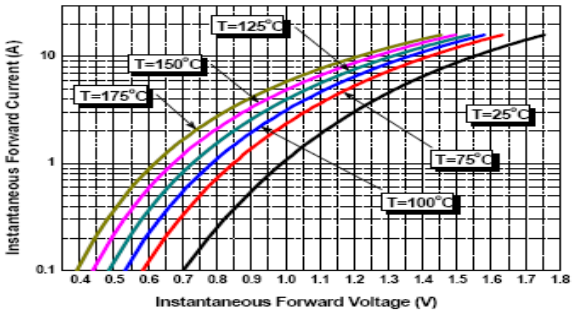


Figure 1. Typical Forward voltage V.S current

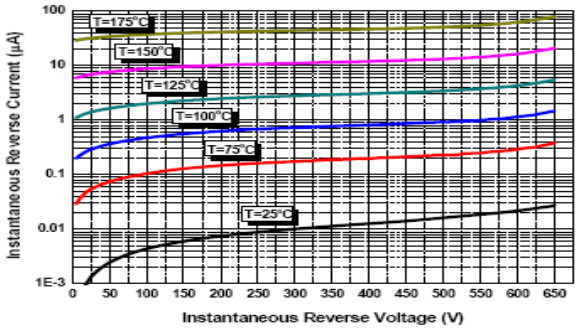


Figure 2. Typical Reverse Characteristics per Diode

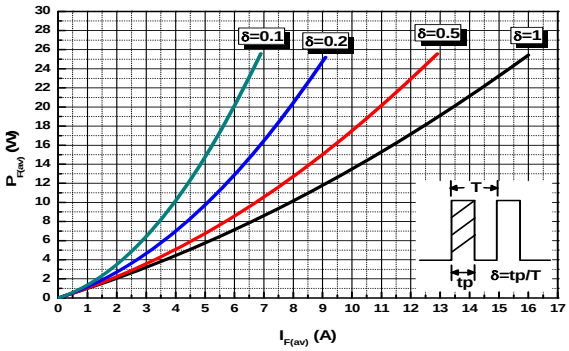


Figure 3. Average Forward Power Dissipation per Diode

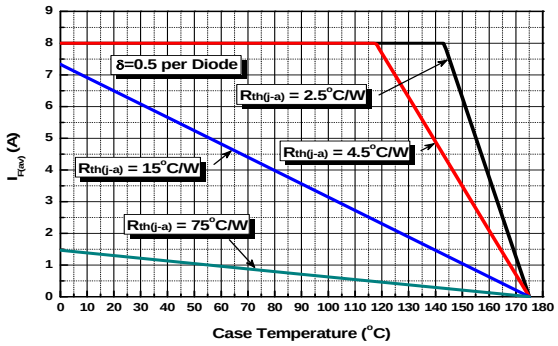


Figure 4. Current derating Curves

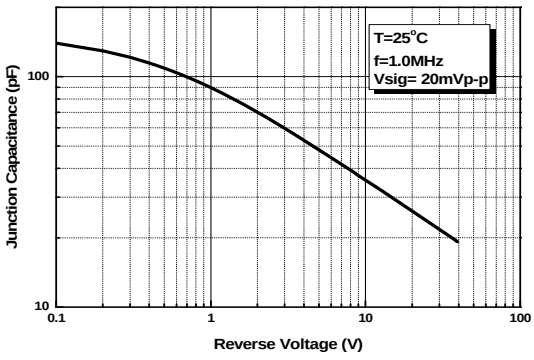


Figure 5. Typical Junction Capacitance

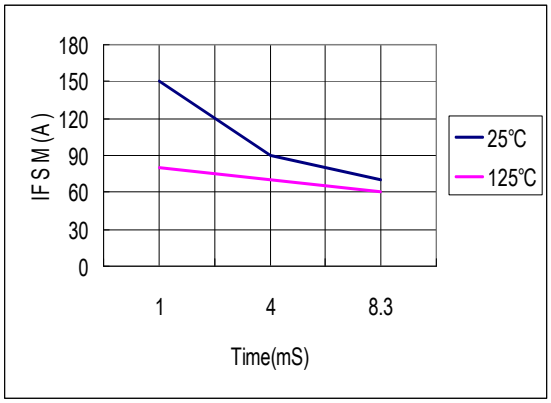


Figure 6. Peak forward surge current (square-wave)

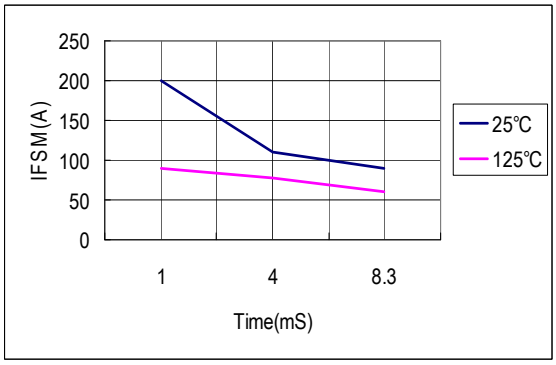
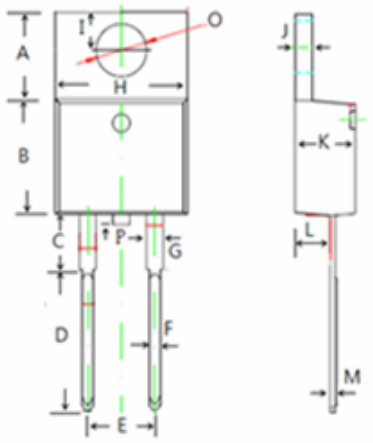


Figure 7. Peak forward surge current (single half sine wave)

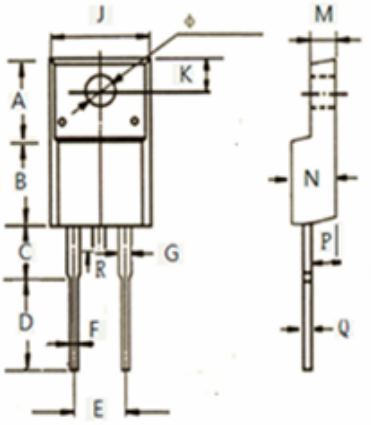
PACKAGE DIMENSION

TO-220AC



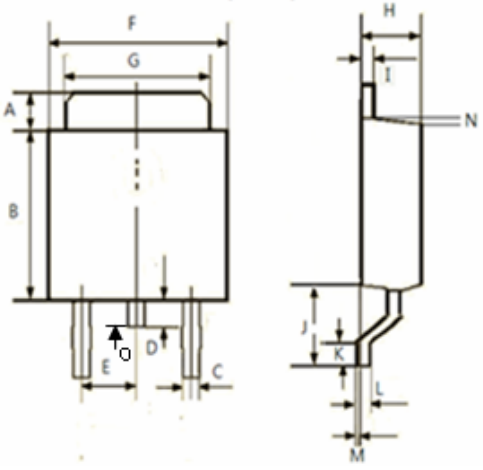
Dimension	Millimeters		Dimension	Millimeters	
	Min.	Max.		Min.	Max.
A	6.17	7.00	H	9.80	10.50
B	8.50	9.45	I	2.59	2.95
C	2.56	4.43	J	1.14	1.40
D	8.98	10.80	K	4.20	4.80
E	4.60	5.60	L	2.20	2.82
F	0.70	0.91	M	0.28	0.60
G	1.17	1.55	O	3.56	3.94
			P		1.00

TO-220FP



Dimension	Millimeters		Dimension	Millimeters	
	Min.	Max.		Min.	Max.
A	5.84	6.98	J	9.90	10.50
B	8.05	9.97	K	2.50	3.80
C	2.79	4.10	M	2.34	3.30
D	8.94	10.65	N	4.20	4.90
E	4.60	5.60	O	2.08	3.56
F	0.30	0.90	P	2.45	2.92
G	1.08	1.48	Q	0.35	0.80
			R		1.00

T0-252(DPAK)



Dimension	Millimeters		Dimension	Millimeters	
	Min.	Max.		Min.	Max.
A	0.89	1.65	H	2.19	2.40
B	5.95	6.25	I	0.43	0.58
C	0.50	0.86	J	2.43	2.90
D	0.60	1.02	K	1.25	1.78
E	2.18	2.39	L	0.43	0.60
F	6.35	6.75	M	0.00	10°
G	5.10	5.46	N	0.00	15°
			O		1.55

IMPORTANT NOTICE

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