

**Pb Free Plating Product**

## F12C20C thru F12C60C



### 12.0 Ampere Common Cathode Fast Recovery Rectifier Diode

**Feature**

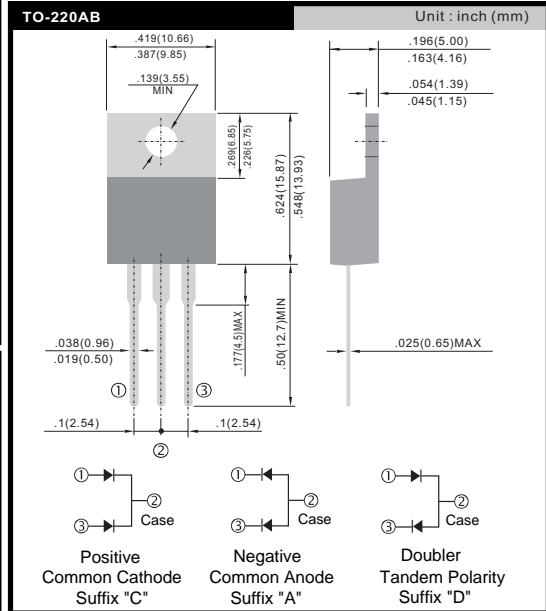
- ★ Fast switching for high efficiency
- ★ Low forward voltage drop
- ★ High current capability
- ★ Low reverse leakage current
- ★ High surge current capability

**Application**

- ★ Automotive Environment(Inverters/Converters)
- ★ Plating Power Supply,Adaptor,SMPS and UPS
- ★ Car Audio Amplifiers and Sound Device System

**Mechanical Data**

- ★ Case:TO-220AB Heatsink
- ★ Epoxy: UL 94V-0 rate flame retardant
- ★ Terminals: Solderable per MIL-STD-202 method 208
- ★ Polarity: As marked on diode body
- ★ Mounting position: Any
- ★ Weight: 2.2 gram approximately



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

	SYMBOL	F12C20C F12C20A F12C20D	F12C40C F12C40A F12C40D	F12C60C F12C60A F12C60D	UNIT
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	200	400	600	V
Maximum RMS Voltage	V <sub>RMS</sub>	140	280	420	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	200	400	600	V
Maximum Average Forward Rectified Current T <sub>c</sub> =100°C	I <sub>F(AV)</sub>	12.0			A
Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	100			A
Maximum Instantaneous Forward Voltage @ 6.0 A	V <sub>F</sub>	0.98	1.3	1.7	V
Maximum DC Reverse Current @T <sub>J</sub> =25°C At Rated DC Blocking Voltage @T <sub>J</sub> =125°C	I <sub>R</sub>	10.0 250			uA uA
Maximum Reverse Recovery Time (Note 1)	T <sub>rr</sub>	35			nS
Typical junction Capacitance (Note 2)	C <sub>J</sub>	65			pF
Typical Thermal Resistance (Note 3)	R <sub>θJC</sub>	2.2			°CW
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150			°C

NOTES : (1) Reverse recovery test conditions I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.25A.  
 (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.  
 (3) Thermal Resistance junction to case.

FIG.1 - FORWARD CURRENT DERATING CURVE

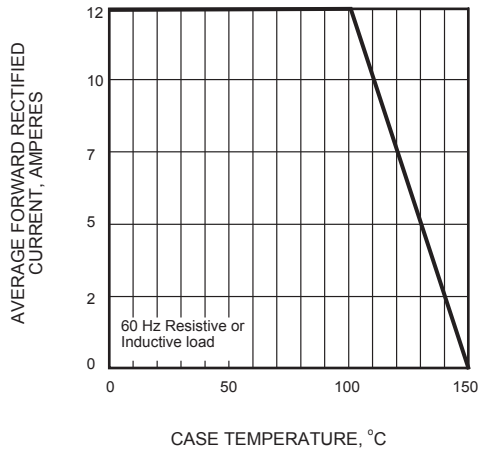


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

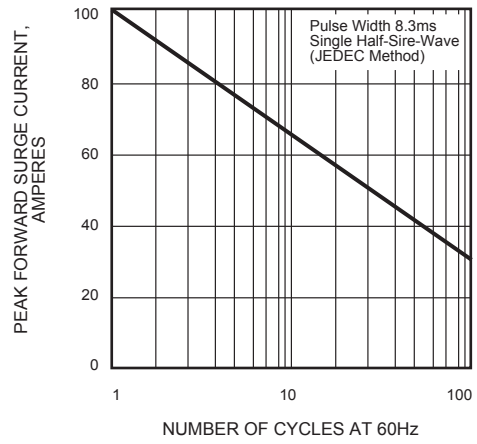


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

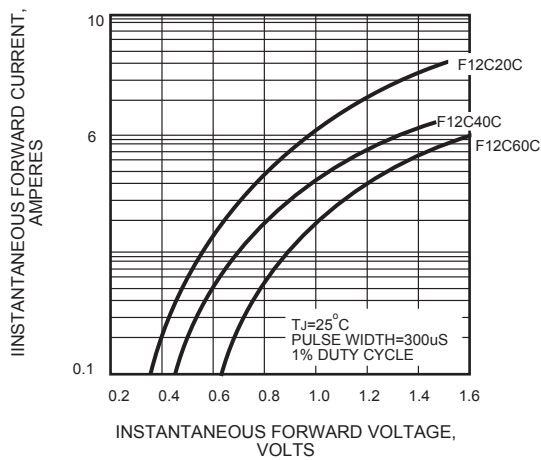


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

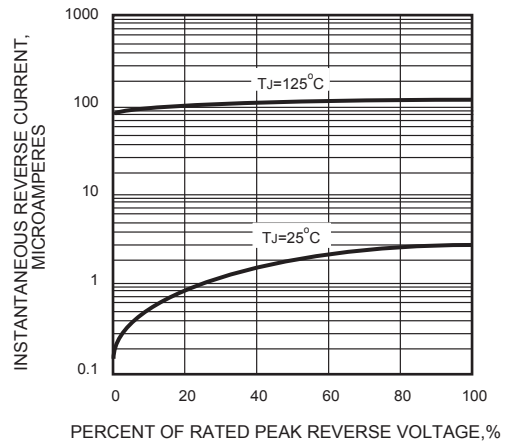


FIG.5 - TYPICAL JUNCTION CAPACITANCE

