

# EGP20A - EGP20K

## 2.0 Ampere Glass Passivated High Efficiency Rectifiers

### Features

- Glass passivated cavity-free junction
- High surge current capability
- Low leakage current
- Superfast recovery time for high efficiency
- Low forward voltage, high current capability



**DO-15 Glass case**  
COLOR BAND DENOTES CATHODE

### Absolute Maximum Ratings\* $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$I_O$	Average Rectified Current .375" lead length @ $T_L = 55^\circ\text{C}$	2.0	A
$I_{f(\text{surge})}$	Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method)	75	A
$P_D$	Total Device Dissipation Derate above $25^\circ\text{C}$	3.13 25	W mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	40	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction to Lead	15	°C/W
$T_J, T_{STG}$	Junction and Storage Temperature Range	-65 ~ 150	°C

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

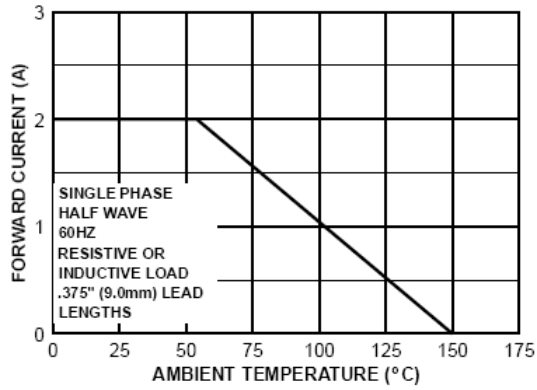
### Electrical Characteristics\* $T_a = 25^\circ\text{C}$ unless otherwise noted

Parameter	Device								Units
	20A	20B	20C	20D	20F	20G	20J	20K	
Peak Repetitive Reverse Voltage	50	100	150	200	300	400	600	800	V
Maximum RMS Voltage	35	70	105	140	210	280	420	560	V
DC Reverse Voltage (Rated $V_R$ )	50	100	150	200	300	400	600	800	V
Maximum Reverse Current @ rated $V_R$ $T_A = 25^\circ\text{C}$ $T_A = 125^\circ\text{C}$	5.0 100								$\mu\text{A}$ $\mu\text{A}$
Maximum Reverse Recovery Time $I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$	50						75		nS
Maximum Forward Voltage @ 2.0 A	0.95			1.25		1.7			V
Typical Junction Capacitance $V_R = 4.0 \text{ V}, f = 1.0 \text{ MHz}$	70			45					pF

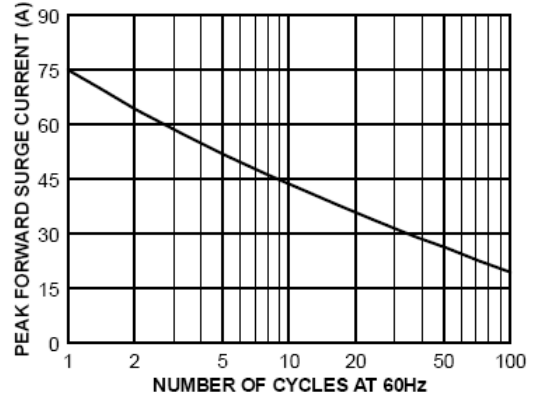
\* Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Performance Characteristics

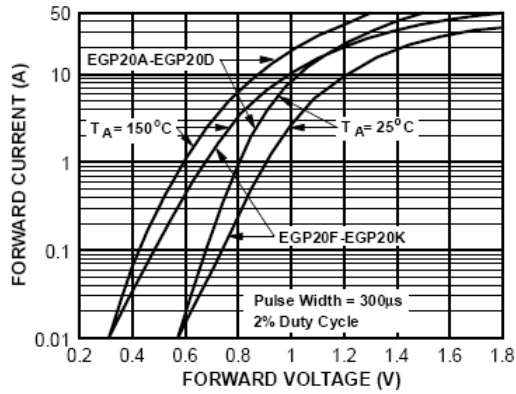
### Forward Current Derating Curve



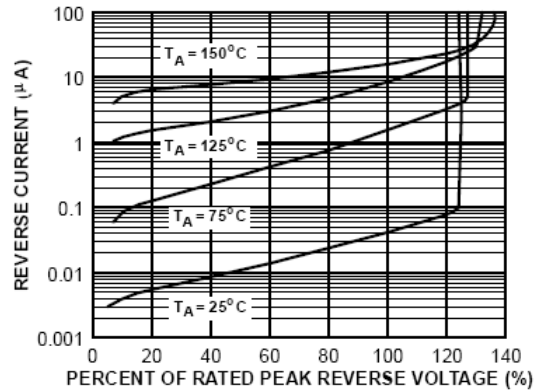
### Non-Repetitive Surge Current



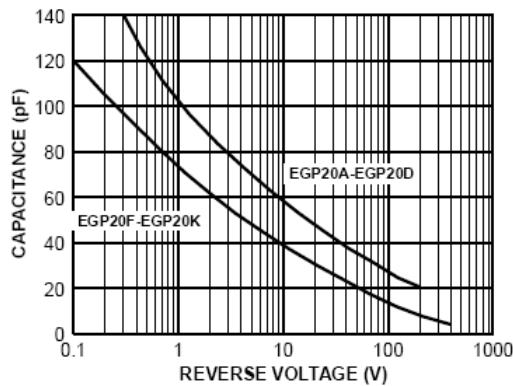
### Forward Characteristics



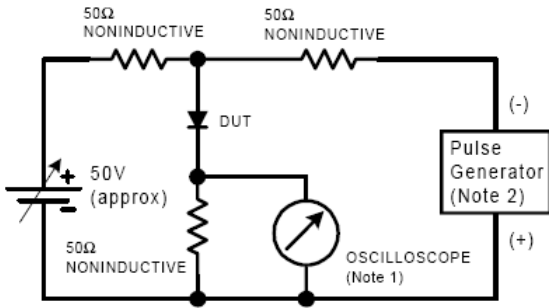
### Reverse Characteristics



### Junction Capacitance

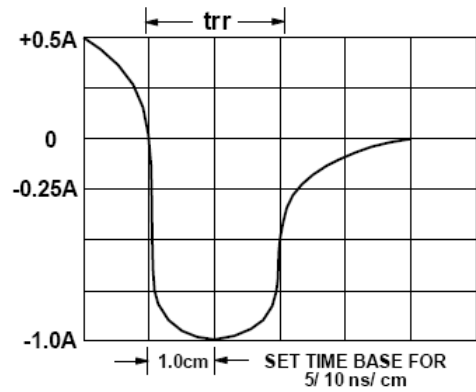


### Reverse Recovery Time Characteristic and Test Circuit Diagram



**NOTES:**


1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.





## TRADEMARKS

The following are registered and unregistered trademarks and service marks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx®	Green FPS™	Power247®	SuperSOT™-8
Build it Now™	Green FPS™ e-Series™	POWEREDGE®	SyncFET™
CorePLUS™	GTO™	Power-SPM™	The Power Franchise®
CROSSVOLT™	<i>i-Lo</i> ™	PowerTrench®	the <b>power</b> franchise
CTL™	IntelliMAX™	Programmable Active Droop™	QFET™
Current Transfer Logic™	ISOPLANAR™	QS™	TinyBoost™
EcoSPARK®	MegaBuck™	QT Optoelectronics™	TinyBuck™
<b>F</b> ®	MICROCOUPLER™	Quiet Series™	TinyLogic®
Fairchild®	MicroFET™	RapidConfigure™	TINYOPTO™
Fairchild Semiconductor®	MicroPak™	SMART START™	TinyPower™
FACT Quiet Series™	Motion-SPM™	SPM®	TinyPWM™
FACT®	OPTOLOGIC®	STEALTH™	TinyWire™
FAST®	OPTOPLANAR®	SuperFET™	µSerDes™
FastvCore™	 ®	SuperSOT™-3	UHC®
FPS™	PDP-SPM™	SuperSOT™-6	UniFET™
FRFET®	Power220®		VCX™
Global Power Resource <sup>SM</sup>			

## DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

## LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

## PRODUCT STATUS DEFINITIONS

### Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.