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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD SEMICONDUCTOR®

July 2007

EGP30A - EGP30K

3.0 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-201AD Glass case
COLOR BAND DENOTES CATHODE

Absolute Maximum Ratings*

T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
I_O	Average Rectified Current .375 " lead length @ T_L = 55°C	3.0	A
$i_{f(surge)}$	Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method)	125	A
P_D	Total Device Dissipation Derate above 25°C	6.25 50	W mW°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	20	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction to Lead	8.5	°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*

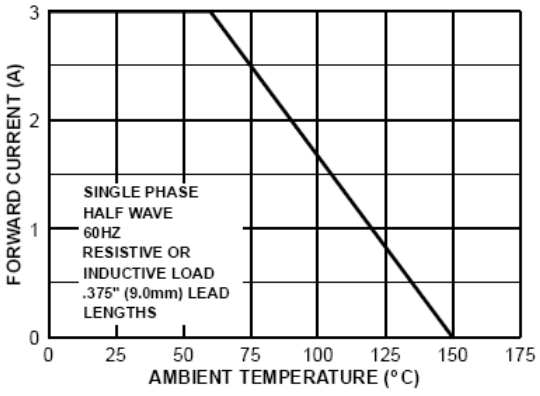
T_a = 25°C unless otherwise noted

Parameter	Device								Units
	30A	30B	30C	30D	30F	30G	30J	30K	
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°C T_A = 125°C	5.0 100								 µA µA
Maximum Reverse Recovery Time I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	50						75		nS
Maximum Forward Voltage @ 3.0 A	0.95				1.25		1.7		V
Typical Junction Capacitance V_R = 4.0 V, f = 1.0 MHz	95				75				pF

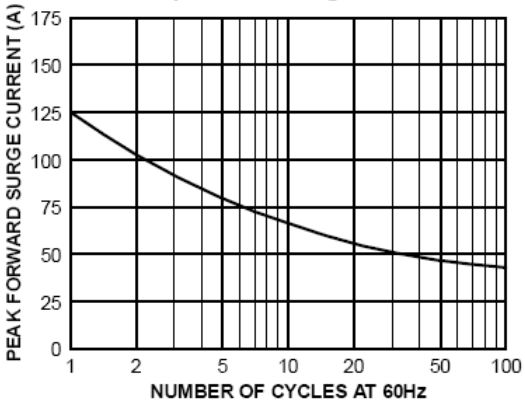
* Pulse Test: Pulse Width≤300µs, Duty Cycle≤2%

Typical Performance Characteristics

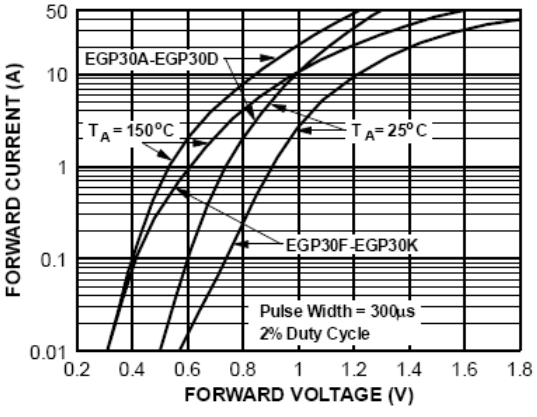
Forward Current Derating Curve



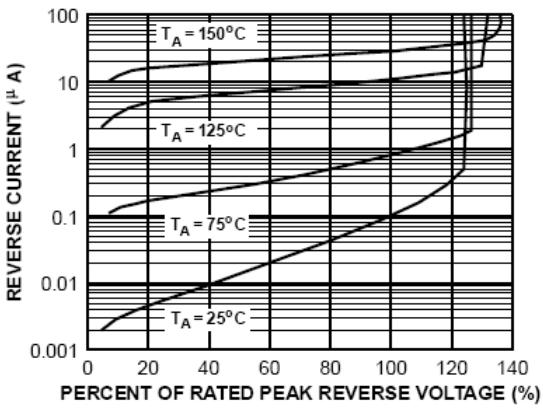
Non-Repetitive Surge Current



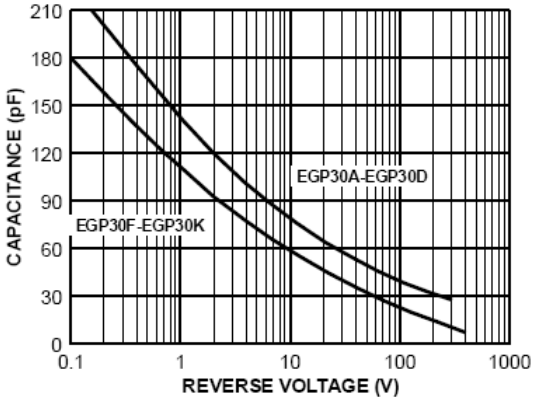
Forward Characteristics



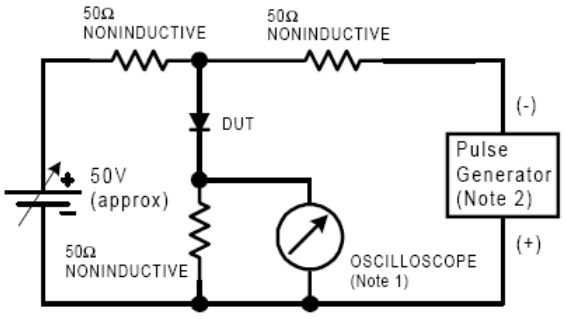
Reverse Characteristics



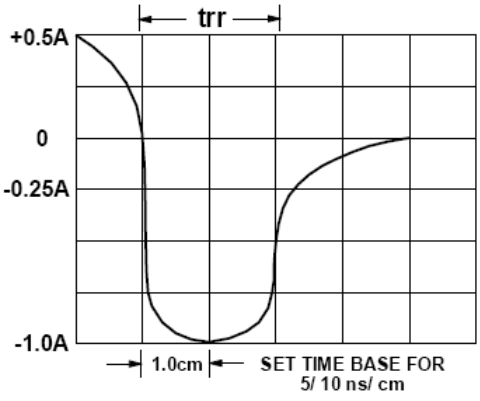
Junction Capacitance



Reverse Recovery Time Characterstic 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.



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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.
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