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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®

June 2013

EGP20A - EGP20K

2.0 A Glass-Passivated High-Efficiency Rectifiers

Features

- Glass-Passivated Cavity-Free Junction
- High Surge Current Capability
- Low Leakage Current
- Super-Fast Recovery Time for High Efficiency
- Low Forward Voltage, High Current Capability

DO-15 Glass case

COLOR BAND DENOTES CATHODE

Absolute Maximum Ratings(1)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Units
$I_{F(AV)}$	Average Rectified Current .375 inch lead length at T_A = 55°C	2.0	A
I_{FSM}	Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method)	75	A
T_J, T_{STG}	Junction and Storage Temperature Range	-65 to 150	°C

Note:

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

Thermal Characteristics

P_D	Total Device Dissipation	3.13	W
	Derate above 25°C	25	mW°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	40	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction to Lead	15	°C/W

Electrical Characteristics[2]

T_A = 25°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 at Rated V_R	T_A = 25°C	5.0								µA
	T_A = 125°C	100								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 at 2.0 A		0.95				1.25		1.70		V
Typical Junction Capacitance V_R = 4.0 V, f = 1.0 MHz		70				45				pF

Note:

2. Pulse test: pulse width ≤ 300 µs, duty cycle ≤ 2%.

Typical Performance Characteristics

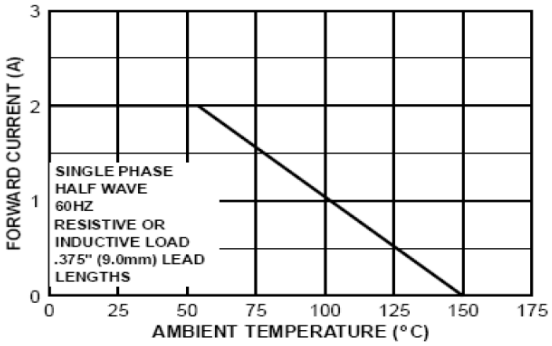


Figure 1. Forward Current Derating Curve

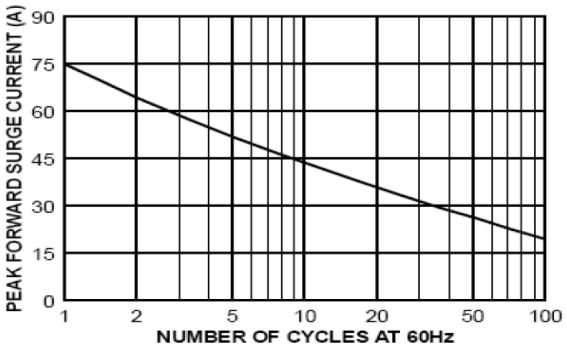


Figure 2. Non-Repetitive Surge Current

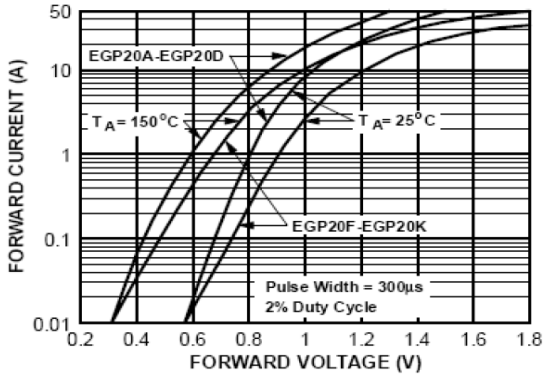


Figure 3. Forward Characteristics

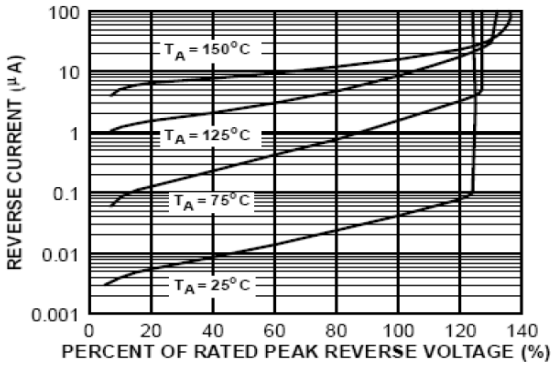


Figure 4. Reserve Characteristics

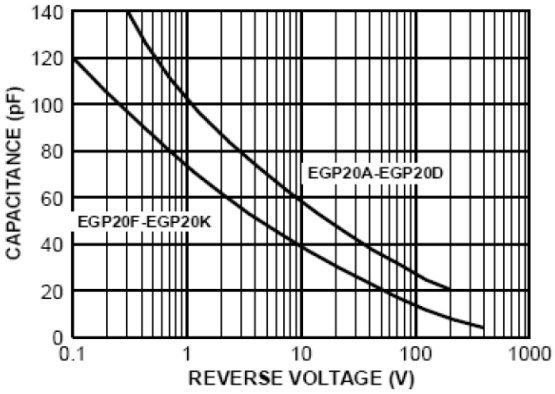
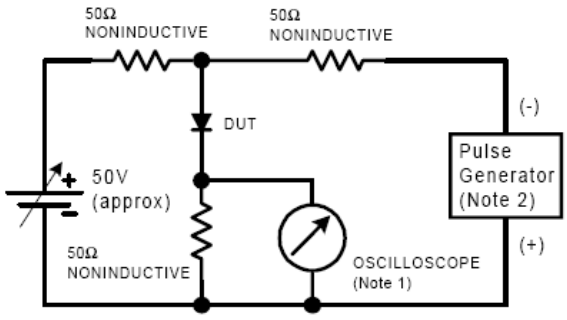


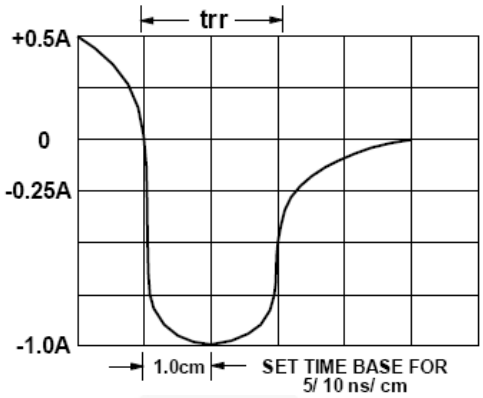
Figure 5. Junction Capacitance

Reverse Recovery Time Characteristic and Test Circuit Diagram



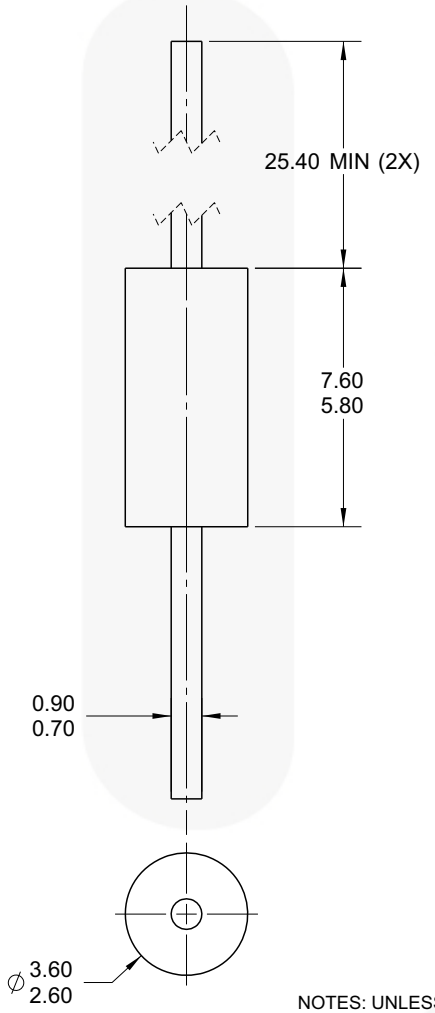
NOTES:

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



Physical Dimensions

DO-15



NOTES: UNLESS OTHERWISE SPECIFIED

A) PACKAGE STANDARD REFERENCE:
JEDEC DO-204 VARIATION AC.
B) PLASTIC PACKAGE BODY.
D) ALL DIMENSIONS ARE IN MILLIMETERS.
E) DRAWING FILE NAME: DO15AREV1

Figure 6. AXIAL LEADED, JEDEC DO204, VARIATION (ACTIVE)

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Rev. I64

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