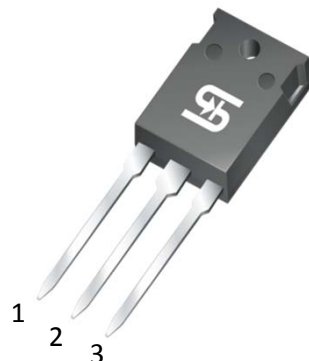


## 20A, 50V - 600V Glass Passivated Super Fast Rectifiers

### FEATURES

- Dual rectifier construction, positive center-tap
- Glass passivated chip junctions
- Superfast recovery time, high voltage
- Low forward voltage, high current capability
- Low thermal resistance
- Low power loss, high efficiency
- UL Recognized File # E-326243
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



### MECHANICAL DATA

**Case:** TO-247AD (TO-3P)

Molding compound, UL flammability classification rating 94V-0

Part no. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

**Polarity:** As marked

**Mounting torque:** 1.13 Nm max.

**Weight:** 5.6g (approximately)

### TO-247AD (TO-3P)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)										
PARAMETER	SYMBOL	SF 2001 PT	SF 2002 PT	SF 2003 PT	SF 2004 PT	SF 2005 PT	SF 2006 PT	SF 2007 PT	SF 2008 PT	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	300	400	500	600	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	210	280	350	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	150	200	300	400	500	600	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	20								A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	180								A
Maximum instantaneous forward voltage (Note 1) I <sub>F</sub> = 10 A I <sub>F</sub> = 20 A	V <sub>F</sub>	0.975 1.100			1.3 1.5		1.7 1.9		V	
Maximum reverse current @ rated V <sub>R</sub> T <sub>J</sub> =25°C T <sub>J</sub> =125°C	I <sub>R</sub>	10 400				μA				
Maximum reverse recovery time (Note 2)	t <sub>rr</sub>	35				ns				
Typical junction capacitance (Note 3)	C <sub>J</sub>	175				pF				
Typical thermal resistance	R <sub>θJC</sub>	2.5				°C/W				
Operating junction temperature range	T <sub>J</sub>	- 55 to +150				°C				
Storage temperature range	T <sub>STG</sub>	- 55 to +150				°C				

Note 1: Pulse test with PW=300 μs, 1% duty cycle

Note 2: Test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, recover to 0.25A.

Note 3: Measured at 1 MHz and applied reverse voltage of 4.0V DC.

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX (*)	PACKAGE	PACKING
SF20xxPT (Note 1)	H	C0	G	TO-3P	50 / Tube

Note 1: "xx" defines voltage from 50V (SF2001PT) to 600V (SF2008PT)

\*: Optional available

EXAMPLE					
EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SF2006PTHCG	SF2006PT	H	C0	G	AEC-Q101 qualified Green compound

**RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub>=25°C unless otherwise noted)

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

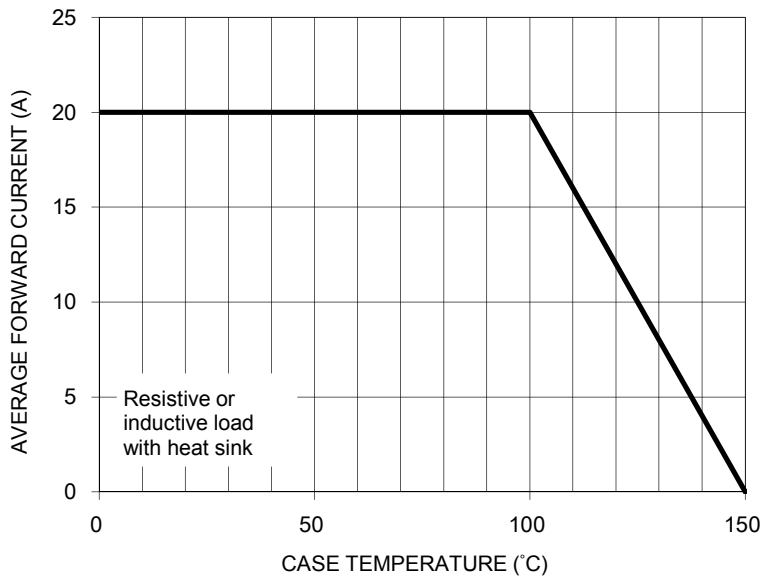


FIG. 2 TYPICAL REVERSE CHARACTERISTICS PER LEG

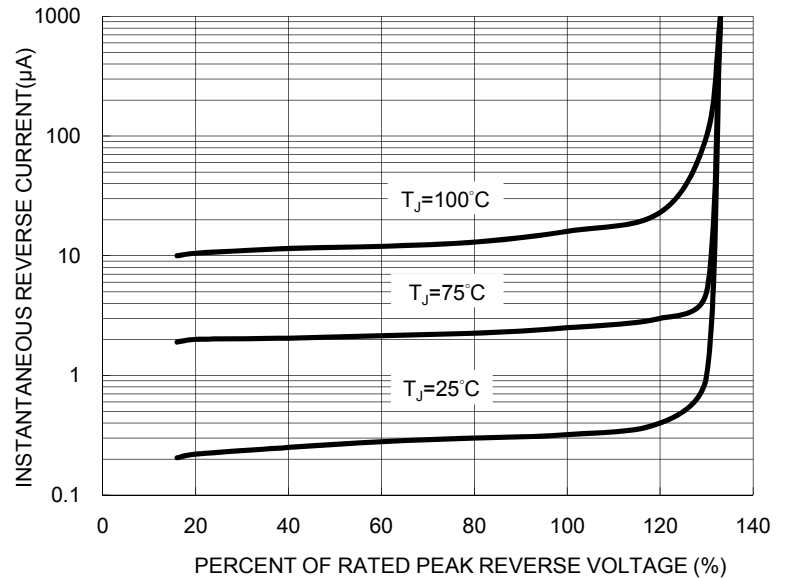


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

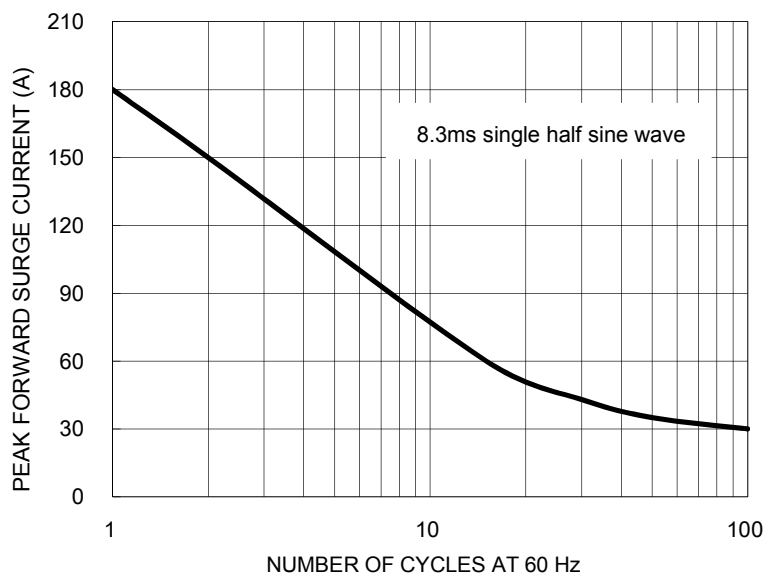


FIG. 4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

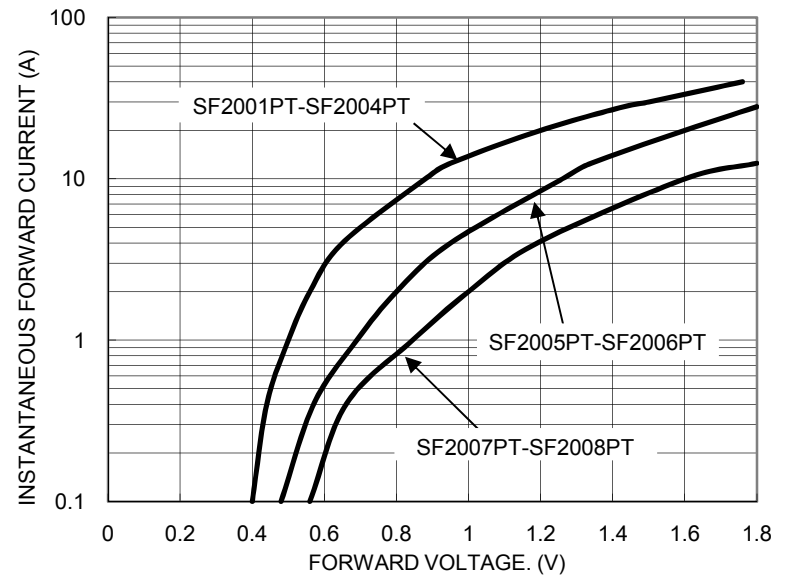


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

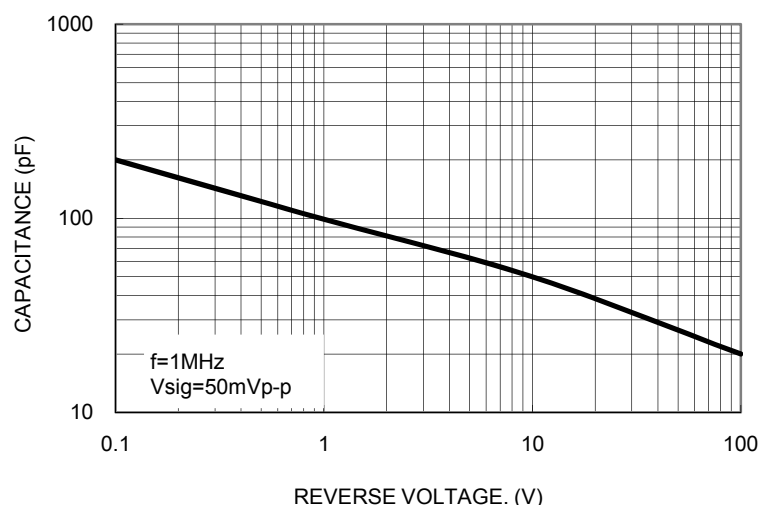
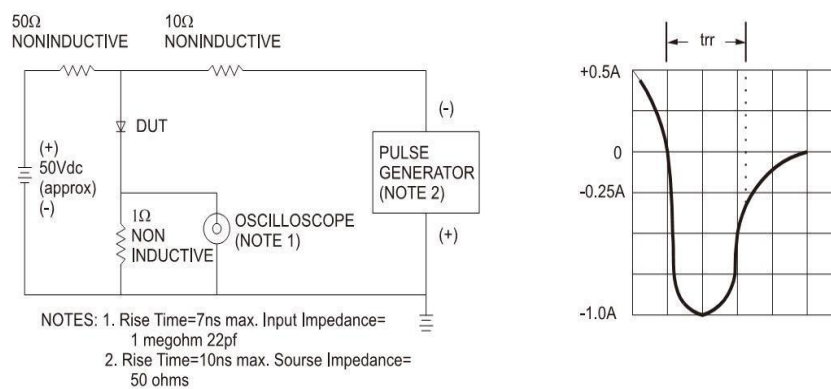
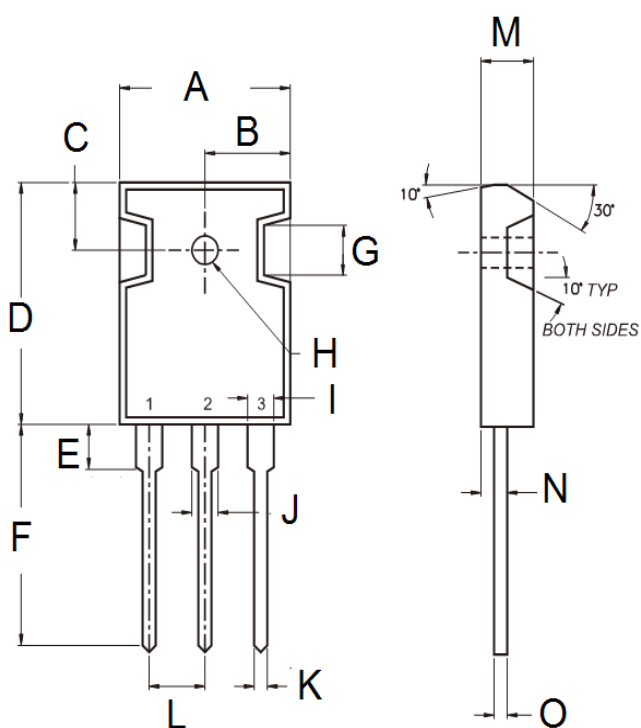


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

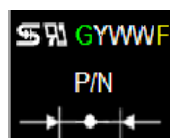


PACKAGE OUTLINE DIMENSIONS  
**TO-247AD (TO-3P)**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	15.90	16.40	0.626	0.646
B	7.90	8.20	0.311	0.323
C	5.70	6.20	0.224	0.244
D	20.80	21.30	0.819	0.839
E	3.50	4.10	0.138	0.161
F	19.70	20.20	0.776	0.795
G	-	4.30	-	0.169
H	2.90	3.40	0.114	0.134
I	1.93	2.18	0.076	0.086
J	2.97	3.22	0.117	0.127
K	1.12	1.22	0.044	0.048
L	5.20	5.70	0.205	0.224
M	4.90	5.16	0.193	0.203
N	2.70	3.00	0.106	0.118
O	0.51	0.76	0.020	0.030

MARKING DIAGRAM



P/N = Marking Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code

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