Super Fast Rectifiers Reverse Voltage 50V~600V, Forward Current 3.0Amp

Features

◆ Low forward voltage drop
◆ High current capability
◆ High reliability
◆ High surge current capability

DO-201AD

.220(5.6)
.197(5.0)
DIA.

1.0(25.4) MIN.

.375(9.5)
.335(8.5)

1.0(25.4) MIN.

.052(1.3)
.048(1.2)
DIA.

Dimensions in inches and (millimeters)

Mechanical Data

● Cases:Molded plastic
● Epoxy:UL 94V-O rate flame retardant
● Lead:Axial leads,solderable per MIL-
　　　STD-202,Method 208 guaranteed
● Polarity:Color band denotes cathode end
● High temperature soldering guaranteed:
　250^{0}C/10 seconds/.375",(9.5mm) lead
　lengths at 5 lbs.,(2.3kg) tension
● Weight:1.2 gramS
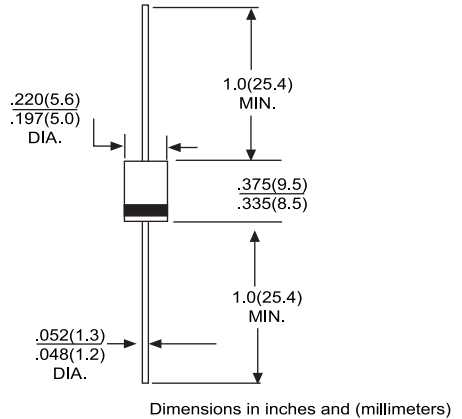
Maximum Ratings and Electrical Characteristics

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

Type Number		SF31	SF32	SF33	SF34	SF35	SF36	SF37	SF38	UNITS
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current .375"(9.5mm) Lead Length @T_A = 55°C	$I_{F(AV)}$	3.0								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	125								A
Maximum Instantaneous Forward Voltage @3.0A	V_F	0.95				1.3		1.7		V
Maximun DC Reverse Current @ T_A = 25°C at Rated DC Blocking Voltage @ T_A = 100°C	I_R	5.0 100								uA uA
Maximum Reverse Recovery Time (Note 1)	T_{RR}	35								nS
Typical Junction Capacitance (Note 2)	C_J	100				80				pF
Operating Temperature Range	T_J	-55 to +150								^{o}C
Storage Temperature Range	T_{STG}	-55 to +150								^{o}C

NOTES: 1. Reverse Recovery Test Conditions: I_F=0.5A,I_R=1.0A,I_{RR}=0.25A
　　　　2.Measured at 1 MHz and Applied Reverse Voltage of 4.0 Volts D.C.

RATINGS AND CHARACTERISTIC CURVES

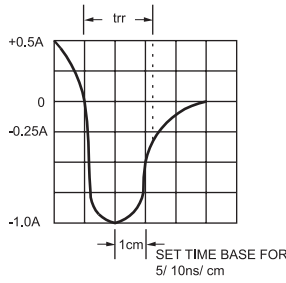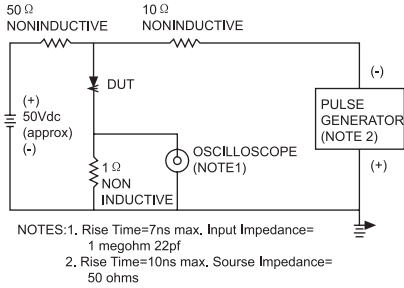FIG.1- REVERSE RECOVER TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

50 Ω NONINDUCTIVE 10 Ω NONINDUCTIVE

(+) 50Vdc (approx) (-)

DUT

1 Ω NON INDUCTIVE

OSCILLOSCOPE (NOTE1)

(-)

PULSE GENERATOR (NOTE 2)

(+)

NOTES:1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf
2. Rise Time=10ns max. Sourse Impedance= 50 ohms

trr

+0.5A

0

-0.25A

-1.0A

1cm   SET TIME BASE FOR 5/ 10ns/ cm

FIG.2- MAXIMUM AVERAGE FORWARD CURRENT DERATING

AVERAGE FORWARD CURRENT,(A)

Single Phase Half Wave 60Hz Resistive or Inductive Load 0.375" (9.5mm) Lead Length

AMBIENT TEMPERATURE,(^{0}C)
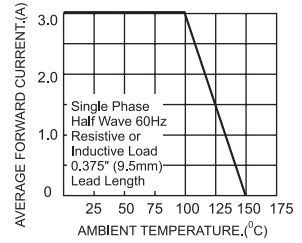
FIG.3- TYPICAL REVERSE CHARACTERISTICS

INSTANTANEOUS REVERSE CURRENT,(uA)

Tj=100^{0}C

Tj=25^{0}C

PERCENT OF RATED PEAK REVERSE VOLTAGE.(%)
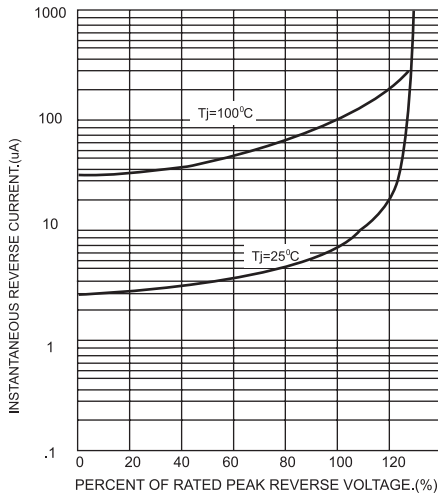
FIG.4-TYPICAL FORWARD CHARACTERISTICS

INSTANTANEOUS FORWARD CURRENT.(A)

SF31~SF34
SF35~SF36
SF37~SF38

Tj=25°C
Pulse Width=300μs
1% Duty Cycle

FORWARD VOLTAGE.(V)
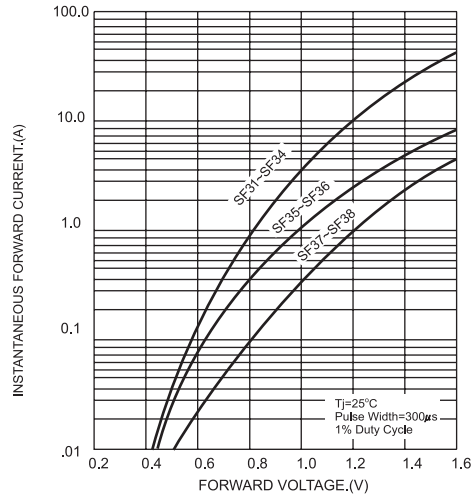
FIG.5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT
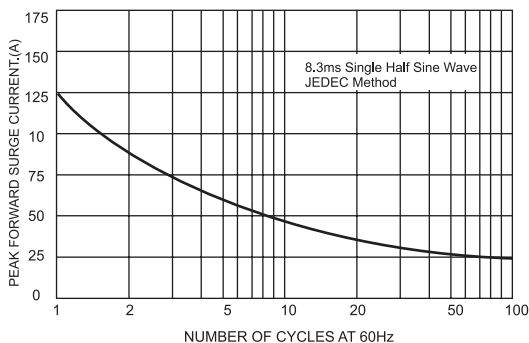
PEAK FORWARD SURGE CURRENT,(A)

8.3ms Single Half Sine Wave JEDEC Method

NUMBER OF CYCLES AT 60Hz

FIG.6- TYPICAL JUNCTION CAPACITANCE

JUNCTION CAPACITANCE,(pF)

SF31~SF34
SF35~SF38

REVERSE VOLTAGE.(V)