RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

1N4933G THRU 1N4937G

FAST RECOVERY GLASS PASSIVATED RECTIFIER

VOLTAGE RANGE 50 to 600 Volts   CURRENT 1.0 Ampere

FEATURES
* High reliability
* Low leakage
* Low forward voltage drop
* Glass passivated junction
* High switch capability

MECHANICAL DATA
* Case: Molded plastic
* Epoxy: Device has UL flammability classification 94V-O
* Lead: MIL-STD-202E method 208C guaranteed
* Mounting position: Any
* Weight: 0.35 gram

DO-41

.034 (0.9) / .028 (0.7) DIA.

1.0 (25.4) MIN.

.205 (5.2) / .166 (4.2)

.107 (2.7) / .080 (2.0) DIA.

1.0 (25.4) MIN.

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
Ratings at 25 ^{o}C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%.
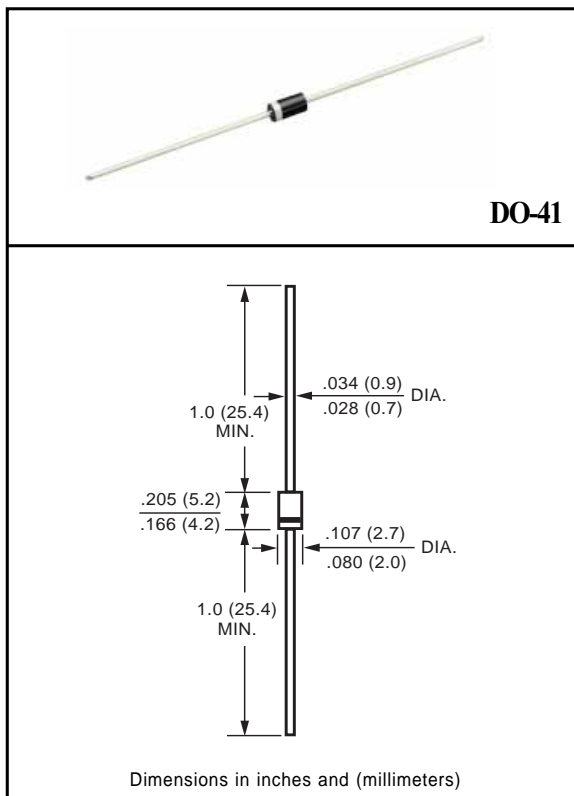
MAXIMUM RATINGS (At T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	1N4933G	1N4934G	1N4935G	1N4936G	1N4937G	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	Volts
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	Volts
Maximum Average Forward Rectified Current at T_A = 55°C	I_O	1.0					Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30					Amps
Typical Junction Capacitance (Note 2)	C_J	15					pF
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150					^{o}C

ELECTRICAL CHARACTERISTICS (At T_A = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	1N4933G	1N4934G	1N4935G	1N4936G	1N4937G	UNITS
Maximum Instantaneous Forward Voltage at 1.0A DC	V_F	1.2					Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C	I_R	5.0					uAmps
Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at T_L = 55°C		100					uAmps
Maximum Reverse Recovery Time (Note 1)	trr	200					nSec

NOTES : 1. Test Conditions: I_F = 1.0A, V_R = 30V

2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

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RATING AND CHARACTERISTIC CURVES (1N4933G THRU 1N4937G)
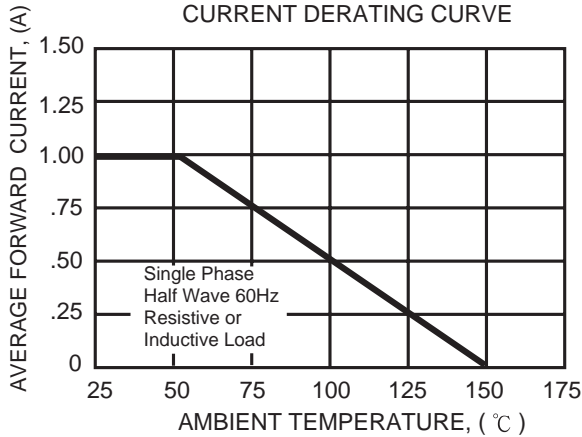
FIG. 1 - TYPICAL FORWARD
CURRENT DERATING CURVE

Single Phase
Half Wave 60Hz
Resistive or
Inductive Load

AMBIENT TEMPERATURE, (℃)

AVERAGE FORWARD CURRENT, (A)

FIG. 2 - MAXIMUM NON-REPETITIVE
FORWARD SURGE CURRENT

8.3ms Single Half Sine-Wave
(JEDED Method)

NUMBER OF CYCLES AT 60Hz

PEAK FORWARD SURGE CURRENT, (A)

FIG. 3 - TYPICAL JUNCTION CAPACITANCE

$T_J = 25℃$

REVERSE VOLTAGE, (V)
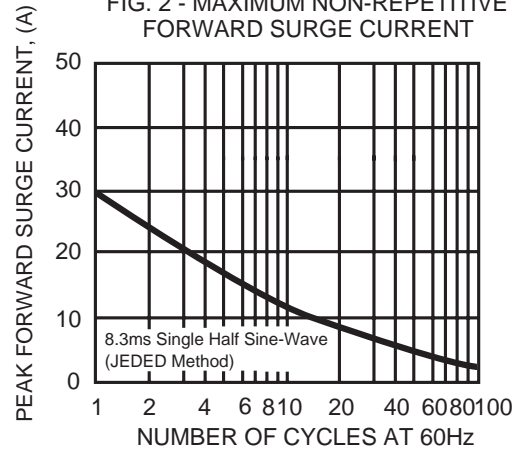
JUNCTION CAPACITANCE, (pF)
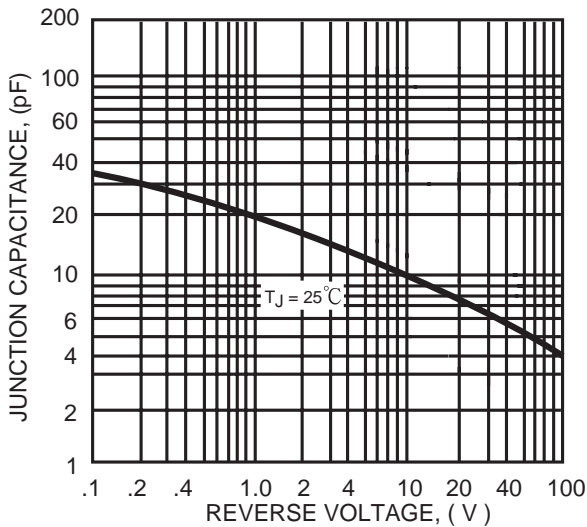
FIG. 4 - TYPICAL INSTANTANEOUS FORWARD
CHARACTERISTICS

$T_J = 25℃$
Pulse Width = 300us
1% Duty Cycle

INSTANTANEOUS FORWARD VOLTAGE, (V)
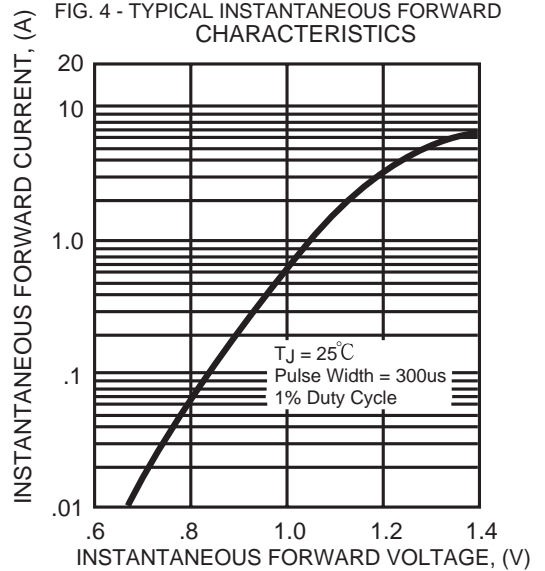
INSTANTANEOUS FORWARD CURRENT, (A)

FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY
TIME CHARACTERISTIC

115Va 10K
60Hz 2W

8 1
7 2
6 3
5 4

3.8uH/1.4Ω

30 Ω
50W
NON-INDUCTIVE
UNIT
UNDER TEST

C.P.CLARE
HPG 1002

1 AMP
SLO-BLO
FUSE

30 Vdc
CONSTANT VOLTAGE
SUPPLY

C1
1.0uF
300V

R2
1Ω
10W
NON-
INDUCTIVE

C1
1.0uF
300V

1.0 Adc FROM
CONSTANT
VOLTAGE SUPPLY
RIPPLE = 3mVrms MAX

MINIMIZE ALL LEAD LENGTHS

Zout $1^1/_2$ Ω MAX
DC to 2kHz

A-TEKTRONIX 545A. K PLUG IN
PRE AMP P6000 PROBE OR EQUIVALENT
R1-ADJUSTED FOR 1.4Ω BETWEEN
POINT 2 OF RELAY AND RECTIFIER
INDUCTIVE = 3.8uH

R2-TEN-1W 10Ω% CARBON CORE
IN PARALLEL

$T_A = 25 {+10 \atop -0} ℃$ FOR RECTIFIER

trr

i(t) di/dt = 50A/uS

IFM 1.0

0

IRM (REC)

SET TIME BASE FOR
50/100 ns/cm

RECTRON