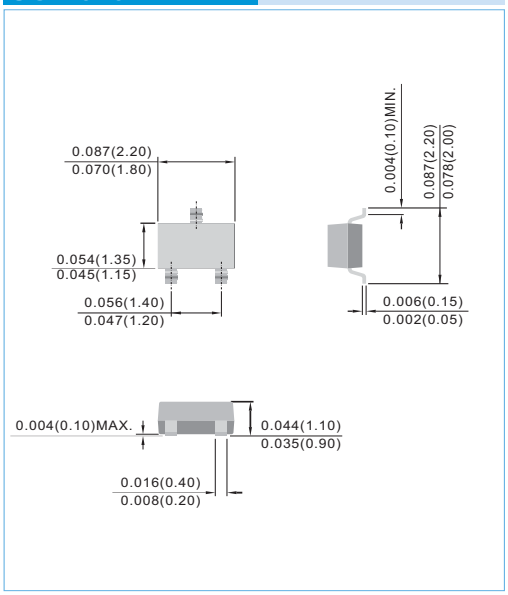
PANJIT SEMI CONDUCTOR

# 1SS397

## HIGH VOLTAGE, HIGH SPEED SWITCHING APPLICATIONS

**VOLTAGE** 420 Volts **CURRENT** 100mA

**SOT-323** Unit : inch(mm)




### FEATURES

- Fast switching speed.
- Surface mount package Ideally Suited for Automatic insertion
- Electrically Identical to Standard JEDEC
- High Conductance
- In compliance with EU RoHS 2002/95/EC directives

### MECHANICAL DATA

- Case: SOT-323, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00018 ounces, 0.005 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

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

For capacitive load, derate current by 20%.

| PARAMETER | SYMBOL | 1SS397 | UNITS |
|---|---|---|---|
| Marking Code | | B9 | |
| Maximum (peak) reverse Voltage | $V_{RRM}$ | 420 | V |
| Reverse Voltage | $V_R$ | 400 | V |
| Maximum (peak) forward current | $I_{FM}$ | 300 | mA |
| Average Forward current | $I_O$ | 100 | mA |
| Surge Current $I_{FSM}$@tp=0.001ms | $I_{FSM}$ | 4 | A |
| Power Dissipation | $P_{TOT}$ | 100 | mW |
| Junction and Storage Temperature Range | $T_J$,$T_{STG}$ | -55 to +125 | °C |

NOTE:

1. CJ at $V_R$=0, f=1MHZ

2.From $I_F$=10mA to $I_R$=1mA, $V_R$=6Volts, $R_L$=100Ω

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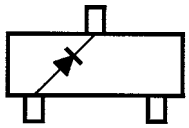
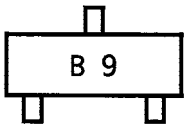
## ELECTRICAL CHARACTERISTICS $T_A$=25°C

| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | $V_F$ | -<br>- | $I_F$=10mA<br>$I_F$=100mA | -<br>- | <br>1.0 | 0.9<br>1.3 | V |
| Reverse current | $I_R$ | -<br>- | $V_R$=300V<br>$V_R$=400V | -<br>- | -<br>- | 0.1<br>1.0 | μA |
| Total capacitance | $C_T$ | - | $V_R$=0,f=1MHz | - | 2.5 | 5.0 | pF |
| Reverse recovery time | $t_{rr}$ | - | $I_F$=10mA | - | | 500 | nS |

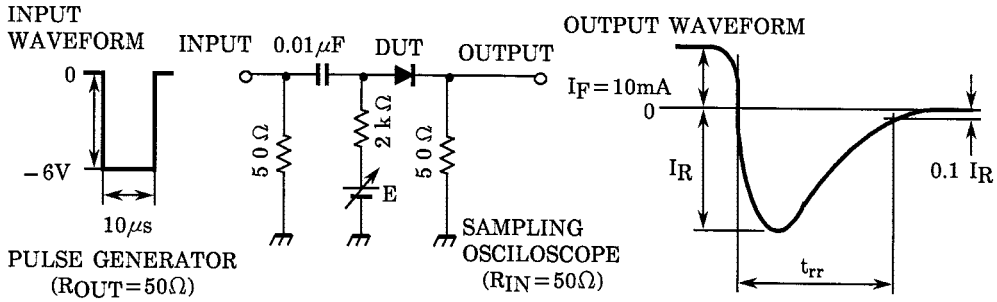
## Equivalent Circuit



## Marking




## Fig.1 Reverse Recovery Time ($t_{rr}$) Test Circuit(Top View)



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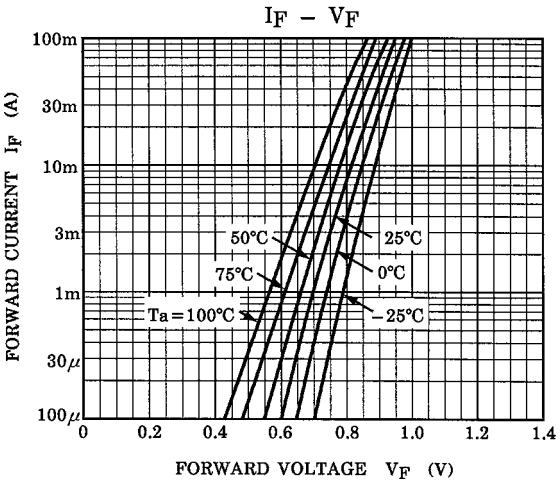
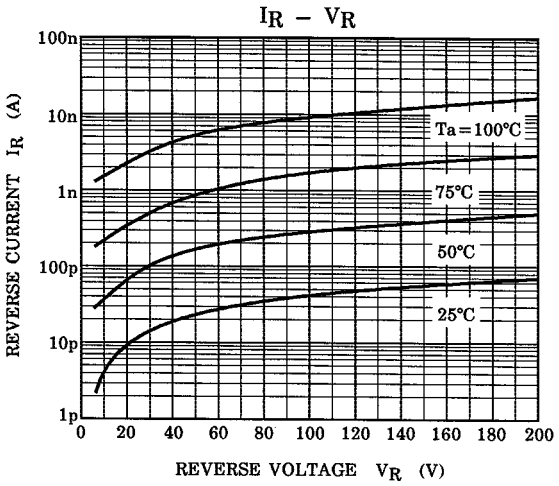
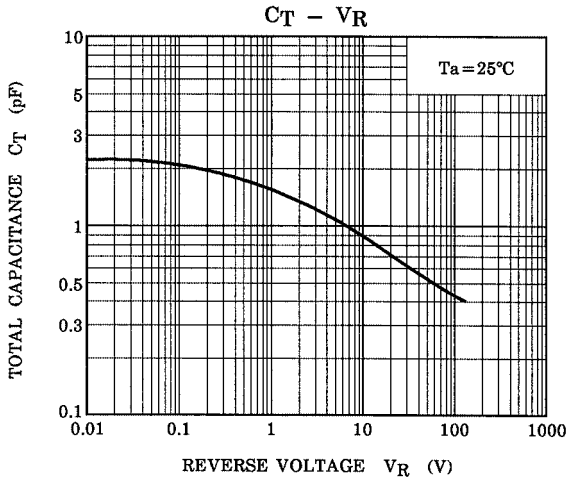
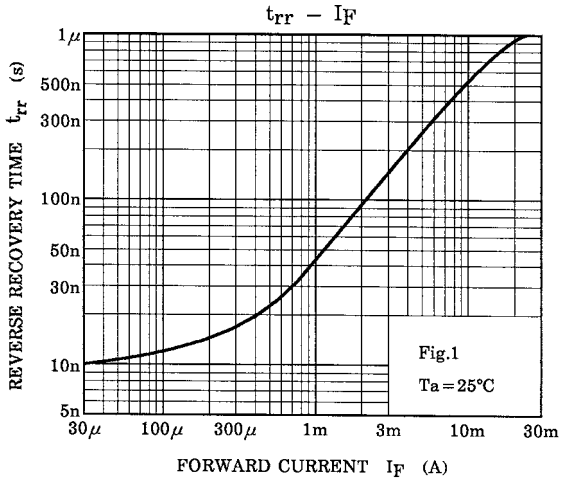
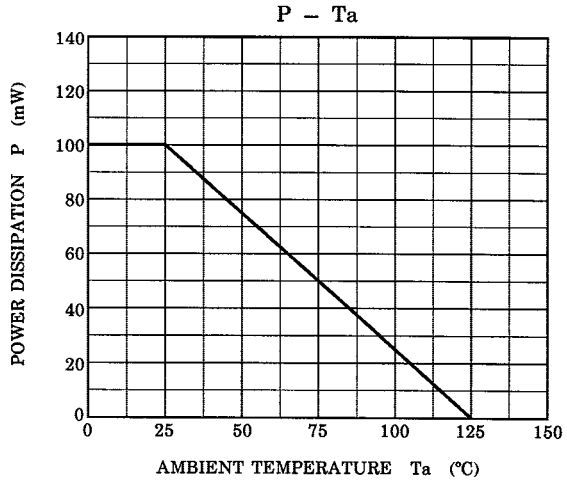

IF – VF
FORWARD CURRENT IF (A)
100m
30m
10m
3m
1m
30μ
100μ
0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
FORWARD VOLTAGE VF (V)
50°C
25°C
75°C
0°C
Ta=100°C
–25°C


IR – VR
REVERSE CURRENT IR (A)
100n
10n
1n
100p
10p
1p
0
20
40
60
80
100
120
140
160
180
200
REVERSE VOLTAGE VR (V)
Ta=100°C
75°C
50°C
25°C


CT – VR
TOTAL CAPACITANCE CT (pF)
10
5
3
1
0.5
0.3
0.1
0.01
0.1
1
10
100
1000
REVERSE VOLTAGE VR (V)
Ta=25°C


trr – IF
REVERSE RECOVERY TIME trr (s)
1μ
500n
300n
100n
50n
30n
10n
5n
30μ
100μ
300μ
1m
3m
10m
30m
FORWARD CURRENT IF (A)
Fig.1
Ta=25°C


P – Ta
POWER DISSIPATION P (mW)
140
120
100
80
60
40
20
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE Ta (°C)

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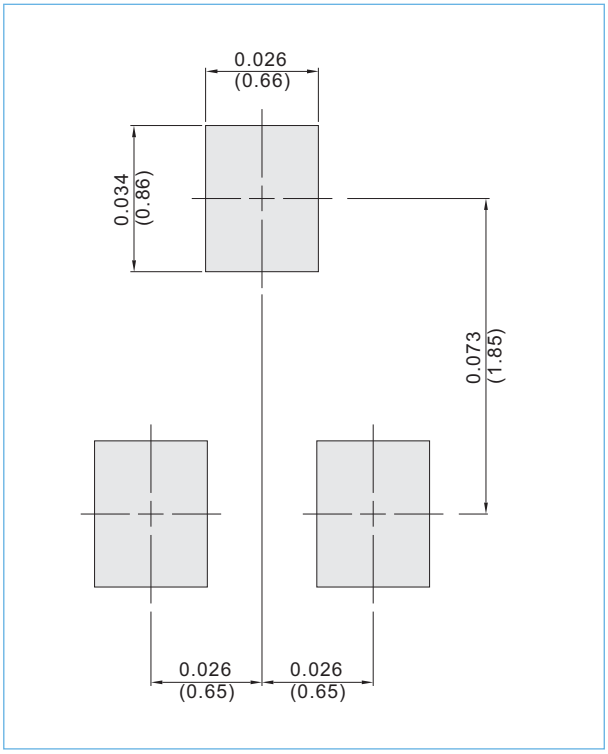
## MOUNTING PAD LAYOUT

SOT-323 Unit : inch(mm)




## ORDER INFORMATION

- Packing information

  T/R - 12K per 13" plastic Reel

  T/R - 3K per 7” plastic Reel

## LEGAL STATEMENT