

HERMETIC THIN DIODE Fast Recovery Rectifier

DESCRIPTION:

Electrically Equivalent to 1N5418 and may be screened in line with MIL-PRF-19500/411 (see notes)

This low profile, hermetically sealed, fast recovery rectifier diode is manufactured using a JANS qualified wafer fab and is designed for space solar array applications. The silver-plated flat leads are designed for ease in welding to solar array PCBs.

FEATURES / BENEFITS:

- ✓ Silver plated flat leads
- ✓ Hermetic, cavity ceramic package
- ✓ JANS Equivalent screening and QCI available

MAXIMUM RATINGS:

- ✓ Operating & Storage Temperature: -65°C to +175°C
- ✓ Thermal Resistance: 27°C/W (junction to lead)
- ✓ Scope Display on 100% of parts

ELECTRICAL CHARACTERISTICS

MAX. RATINGS / ELECTRICAL CHARACTERISTICS All ratings are at $T_A = 25^\circ\text{C}$ unless otherwise specified.

RATING	CONDITIONS	MIN	TYP	MAX	UNIT
Peak Inverse Voltage (PIV)	$I_R = 50\mu\text{A}$ $I_R = 50\mu\text{A}, T_A = -55^\circ\text{C}$	-	-	400 400	V dc
Average DC Output Current (I_O)*	$T_A = +55^\circ\text{C}$ $T_A = +100^\circ\text{C}$	-	-	3 2	A
Peak Single Cycle Surge Current (I_{FSM})	$t_p = 8.3$ ms Single Half Cycle Sine Wave, superimposed on 2A dc, 400V DC	-	-	80	A (pk.)
Operating and Storage Temp. (T_{OP} & T_{STG})	-	-65	-	+175	°C
Maximum Forward Voltage (V_F)	$I_F = 1.5\text{A}$ $I_F = 9\text{A}$ $I_F = 0.5\text{A}, T_A = -55^\circ\text{C}$	0.5 0.6 0.5	-	1.2 1.5 1.4	Volts
Maximum Instantaneous Reverse Current at PIV (I_R)	$T_A = 25^\circ\text{C}$ $= 100^\circ\text{C}$	T_A	-	1 20	μA
Reverse Recovery Time (t_{RR})	$I_f = 0.5\text{A}, I_r = 1.0\text{A}, I_{rr} = 0.25\text{A}$	-	-	150	nsec
Capacitance (C)	$V_R = 4\text{V dc}, 100\text{KHz} \leq f \leq 1\text{MHz}$	-	-	165	pF
Thermal Resistance (θ_{JL})	Junction to Lead $d = 0.375''$			27	°C/W

Note * - Derate linearly at 22mA/°C from $55^\circ\text{C} \leq T_A \leq 100^\circ\text{C}$; at 26.7mA/°C from $100^\circ\text{C} \leq T_A \leq 175^\circ\text{C}$
Due to low profile package, Breakdown voltage test cannot be performed. Instead, additional leakage current is done at 440V with a 50 μA limit.

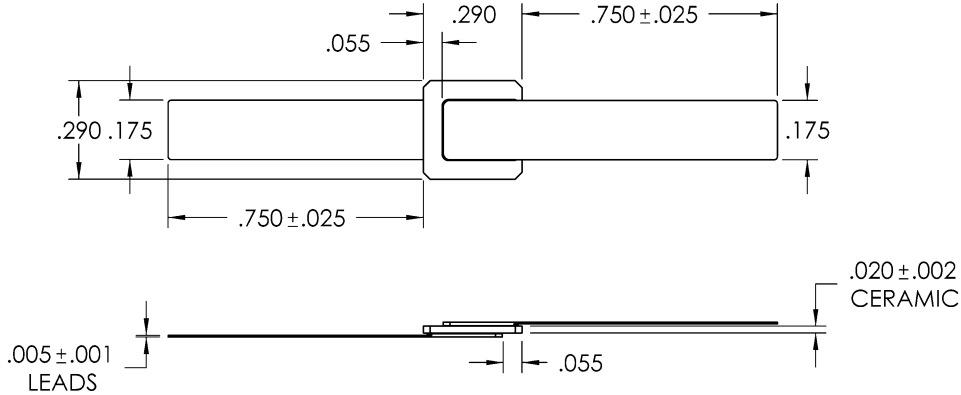
In addition, scope display test is not performed since this test requires testing over the breakdown voltage.

SENSITRON **SEMICONDUCTOR**

SHDT373013
3A HERMETIC THIN DIODE
FAST RECOVERY

TECHNICAL DATA
DATA SHEET 6052, Rev. -

PACKAGE DIMENSIONS (inches/mm)



PKG: TFP-1

PART ORDERING INFORMATION

SHDT373013 XX X

Screening Level (blank is no screening):

Suffix	Screened in Accordance with:
blank	No screening level
SS	MIL-PRF-19500, S Level

QCI (blank is no QCI):

Suffix	Inspection
blank	No QCI
Q	MIL-PRF-19500 QCI

DISCLAIMER:

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the Sensitron Semiconductor sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall Sensitron Semiconductor be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). Sensitron Semiconductor assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall Sensitron Semiconductor be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or Sensitron Semiconductor.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of Sensitron Semiconductor.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.