TECHNICAL DATA
DATA SHEET 237, REV. A
Formerly Part Number SHD4312

SMALL SIGNAL TRANSISTOR

DESCRIPTION: A SINGLE NPN SMALL SIGNAL TRANSISTOR IN A CERAMIC LCC-3 PACKAGE.

MAXIMUM RATINGS (ALL RATINGS ARE AT T_A = 25°C UNLESS OTHERWISE SPECIFIED).

RATING	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Collector-Emitter Voltage (V_{CEO})	-	-	-	40	Vdc
Collector-Base Voltage (V_{CBO})	-	-	-	75	Vdc
Emitter-Base Voltage (V_{EBO})	-	-	-	6.0	Vdc
Collector Current-Continuous (I_C)	-	-	-	800	mAdc
Total Power Dissipation P_D @ T_C = 25°C Derate above 25°C	-	-	-	1.0 6.0	W mW/°C
Thermal Resist. Junction to Case $R\theta_{JC}$	-	-	-	168	°C/W
Operating Junction and Storage Temp. (T_J & T_{stg})	-	-65	-	+200	°C

ELECTRICAL CHARACTERISTICS (ALL ELECTRICAL CHARACTERISTICS T_A = 25°C)

OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage $V_{(BR)CEO\ (1)}$	I_C = 10mAdc, I_B = 0	40	-	-	Vdc
Collector-Base Breakdown Voltage $V_{(BR)CBO}$	I_C = 10μAdc, I_E = 0	75	-	-	Vdc
Emitter-Base Breakdown Voltage $V_{(BR)EBO}$	I_E = 10μAdc, I_C = 0	6.0	-	-	Vdc
Collector Cutoff Current (I_{CBO})	V_{CB} = 60Vdc, I_E = 0	-	-	0.01	μAdc
	V_{CB} = 60Vdc, I_E = 0, T_A = 150°C	-	-	10	μAdc
Collector Cutoff Current (I_{CEX})	V_{CE} = 60Vdc, I_C = 0, $V_{EB(off)}$ = 3.0Vdc	-	-	10	nAdc
ON CHARACTERISTICS					
DC Current Gain (h_{FE}) V_{CE} = 10Vdc	I_C = 0.1 mAdc	35	-		-
	I_C = 1.0 mAdc	50			
	I_C = 10 mAdc (1)	75			
	I_C = 150 mAdc (1)	100		300	
	I_C = 500 mAdc (1)	40			

SENSITRON

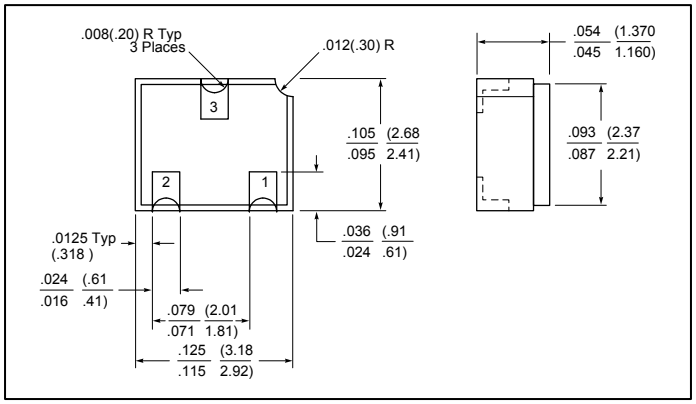
TECHNICAL DATA
DATA SHEET 237, REV. A

SMALL-SIGNAL CHARACTERISTICS					
Current Gain, Bandwidth (2) (f_T)	V_{CE} = 20Vdc, I_C = 20mAdc, f = 100MHz	300	-	-	MHz
Output Capacitance (C_{obo})	V_{CB} = 10Vdc, I_E =0, f = 1.0 MHz	-	-	8.0	pF

RATING	**CONDITIONS**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
SMALL-SIGNAL CHARACTERISTICS (Contiued)					
Input Capacitance (C_{ibo})	V_{EB} = 0.5 Vdc, I_C = 0, f = 1.0 MHz	-	-	25	pF
Delay Time (t_d)	(I_C = 150 mAdc, I_B = 15 mAdc, V_{CC} = 30Vdc, $V_{BE(off)}$ =-0.5Vdc)	-	-	10	ns
Rise Time (t_r)		-	-	25	
Storage Time (t_s)	(I_C = 150 mAdc, I_{B1} = I_{B2} = 15 mAdc, V_{CC} = 30Vdc)	-	-	225	ns
Fall Time (t_f)		-	-	60	

(1) Pulsed. Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.
(2) $f_T = |h_{fe}| \bullet f_{test}$

MECHANICAL DIMENSIONS - in inches / mm



LCC-3

PINOUTS

TYPE	**PIN 1**	**PIN 2**	**PIN 3**
PNP Transistor	BASE	EMITTER	COLLECTOR

SENSITRON

TECHNICAL DATA
DATA SHEET 237, REV. A

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.