

PREPARED BY: DATE N. KATO DEC. 08.1994 <i>N. Kato</i>	SHARP CORPORATION 282-1 HAJIKAMI, SHINJOCHO, KITAKATSURAGIGUN, NARA, 639-21, JAPAN SPECIFICATION	SPEC No. G4620 A
CHECKED BY: DATE M. ASAI DEC. 08. 1994 <i>M. Asai</i>		FILE No.
APPROVED BY: DATE K. NISHIDA DEC. 08. 1994 <i>K. Nishida</i>		ISSUE DEC. 08. 1994 PAGE 5 REPRESENTATIVE DIVISION ENGINEERING DEPT. PHOTOVOLTAICS DIV.

SPECIFICATION FOR
SOLAR CELL
 MODEL No. **NT463Y**

1. This specification sheets include the contents under the copyright of Sharp Corporation ("Sharp"). Please keep them with reasonable care as important information. Please don't reproduce or cause anyone reproduce them without Sharp's consent.
2. Please obey the instructions mentioned below for actual use of this cell.
 - (1) This cell is designed for general use solar modules.
 Main applications of the modules using these cells are as follows.
 Telemeter system, Microwave repeater station, Other telecommunication system(Terminal), Village electrification, Monument, Toy, etc. 1
 - (2) Please take proper steps in order to maintain reliability and safety, in case this cell is used for the uses mentioned below which require high reliability.
 Unit concerning control and safety of a vehicle(air plane, train, automobile, etc.), Traffic signal, Road sign, Security system, Other safety system, etc. 1
 - (3) Please don't use for the uses mentioned below which require extremely high reliability.
 Space equipment, Telecommunication system(Trunk), Nuclear control system, Medical system(relating to any fatal element), etc. 1

CUSTOMER'S APPROVAL

PRESENTED

DATE

BY

H. Sawai

H. SAWAI

Department General Manager of
 Engineering Dept.

BY

1. Applications

This specification applies to the NT463Y solar cell.

2. Outline

Substrate	n type single crystal silicon
Structure	n'/ p/ p'
Dimensions	Refer to the drawing SSE94524, SSE94525
Mass	15 g

3. Specifications**3.1 Dimensions**

L1=125±2 mm , L2=125±2 mm

3.2 Electrical characteristics

Characteristic	Symbol	Min.	Typ.	Unit
Open circuit voltage	Voc	-	615	mV
Short circuit current	Isc	-	5.12	A
Maximum power	Pm	2.07	2.31	W

Conditions:

Irradiance = 1000W/m²

calibrated using Sharp standard cell.

Light source = Xenon short arc lamp with AM1.5 Filter

Cell temperature = 25°C

3.3 Absolute maximum ratings

Rating	Value	Unit
Operating temperature	-40 ~ +90	°C
Storage temperature	-40 " +90	°C

4. Incoming inspection

Incoming inspection for Sharp products are shown below.

4.1 Inspection

All of products shall be inspected.

Judgement criteria are as follows.

(1) Dimensions L1=125±2 mm , L2=125±2 mm

(2) Electrical characteristic Maximum power (rein) = 2.07 W
under the conditions of item 3.2

4.2 Disposal of rejected products

Object products judged as rejected products due to Sharp's responsibility in the incoming inspection by user may be able to be return to Sharp.

CONFIDENTIAL

5. Packing

25 Pcs. of products shall be put into a packing case as shown in SSE91746.

6. Notes

6.1 Handling

Avoid the handlings mentioned below, because it causes degradation of electrical or soldering performance.

“Handling with bare hands.

•Contact with corrosive chemicals or gases.

“Scrubbing the products surface. etc

So handle products carefully with plastic tweezers.

Avoid twisting, dropping or picking the products and so on, because it causes breakage or crack.

6.2 Connecting

When this products are connected in series or parallel and exposed to sunlight, they produce high voltage and current. In such case, never touch the output wires with bare hands not to receive an electric shock. Long time heating causes an electrode damage, so please make short the soldering time as far as possible.

《 Recommendable soldering conditions 》

Soldering heat time : 1-2 s

Soldering iron temperature : approximately 300℃.

Flux(if necessary) : non-corrosive mildly activated flux
(Remove flux completely after soldering with alcohol and acetone.)

Never assemble this products with other kinds of solar cells, because it may cause the hot-spot problem.

6.3 Storage

Keep away products from corrosive chemicals or gases and keep them in a storage box filled up with pure nitrogen gas or clean dry air at 10-U30T.

6.4 Humidity resistance

This products have no humidity resistance.

So cover the products with glass, wetproof films and resin to perform a long term reliability.

6.5 COCOM

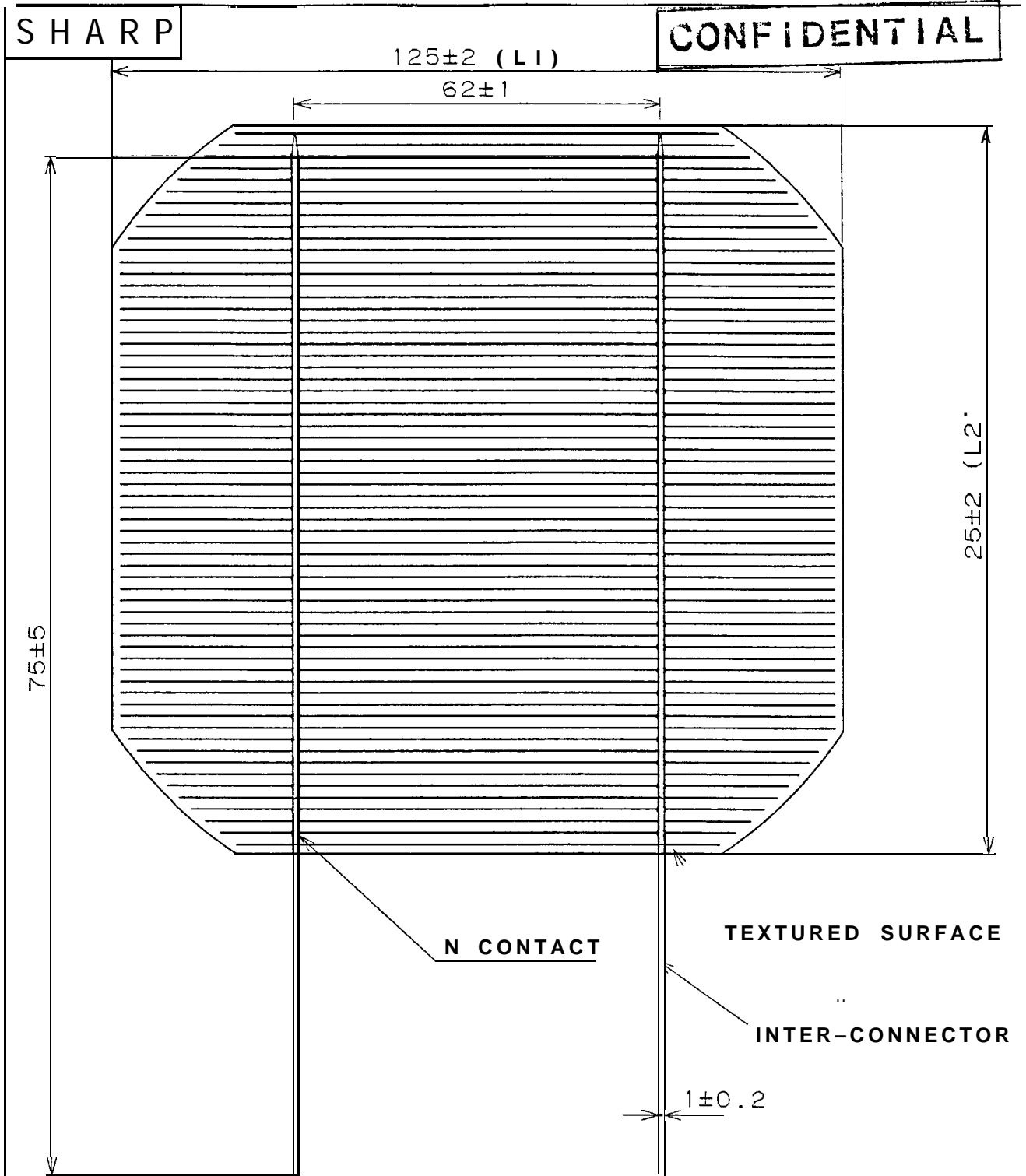
This product is neither designed as radiation resistance nor for space use.

7. Other

Any doubt provided in the above or any troubles on testing shall be determined in good faith upon mutual consultation of the both parties , however , in case of no consultation , the settlement shall be depend upon Sharp's judgement.

SHARP

CONFIDENTIAL



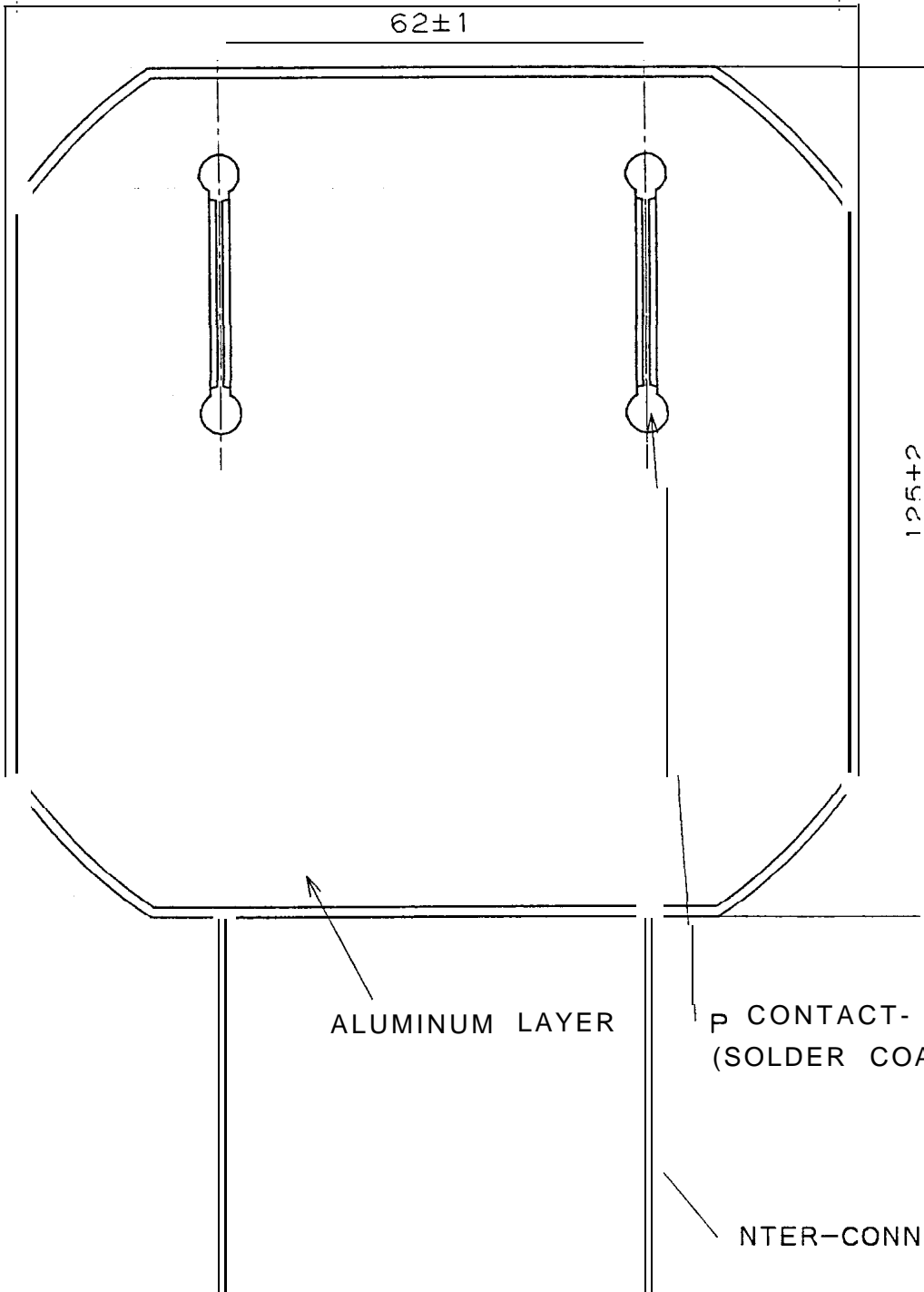
Cell thickness is 0.27-0.40 except contact, solder, aluminum layer, and inter-connector.
 If necessary, contact shape will be modified without prior notice for performance improvement.
 (Modification not interfere with assembly.)

適用機種 APPLICABLE MODEL		尺度 SCALE	単位 UNIT	△			
			mm	△			
板厚 THICKNESS	員数 PIECES	材質 MATERIAL	仕上 FINISH	改訂日 DATE	改訂記事 REVISE	担当 CHARGE	
日付 DATE	NOV. 28. 1994	名称 NAME		Front View			
DESIGN DRAW	TRACE	CHECK	APPROVE	コード CODE			
SHARP 株式会社 電子部品事業本部				図番 DRAWING No.	SSE94524		
PHOTOVOLTAICS DIVISION							
SHARP CORPORATION							

SHARP

CONFIDENTIAL

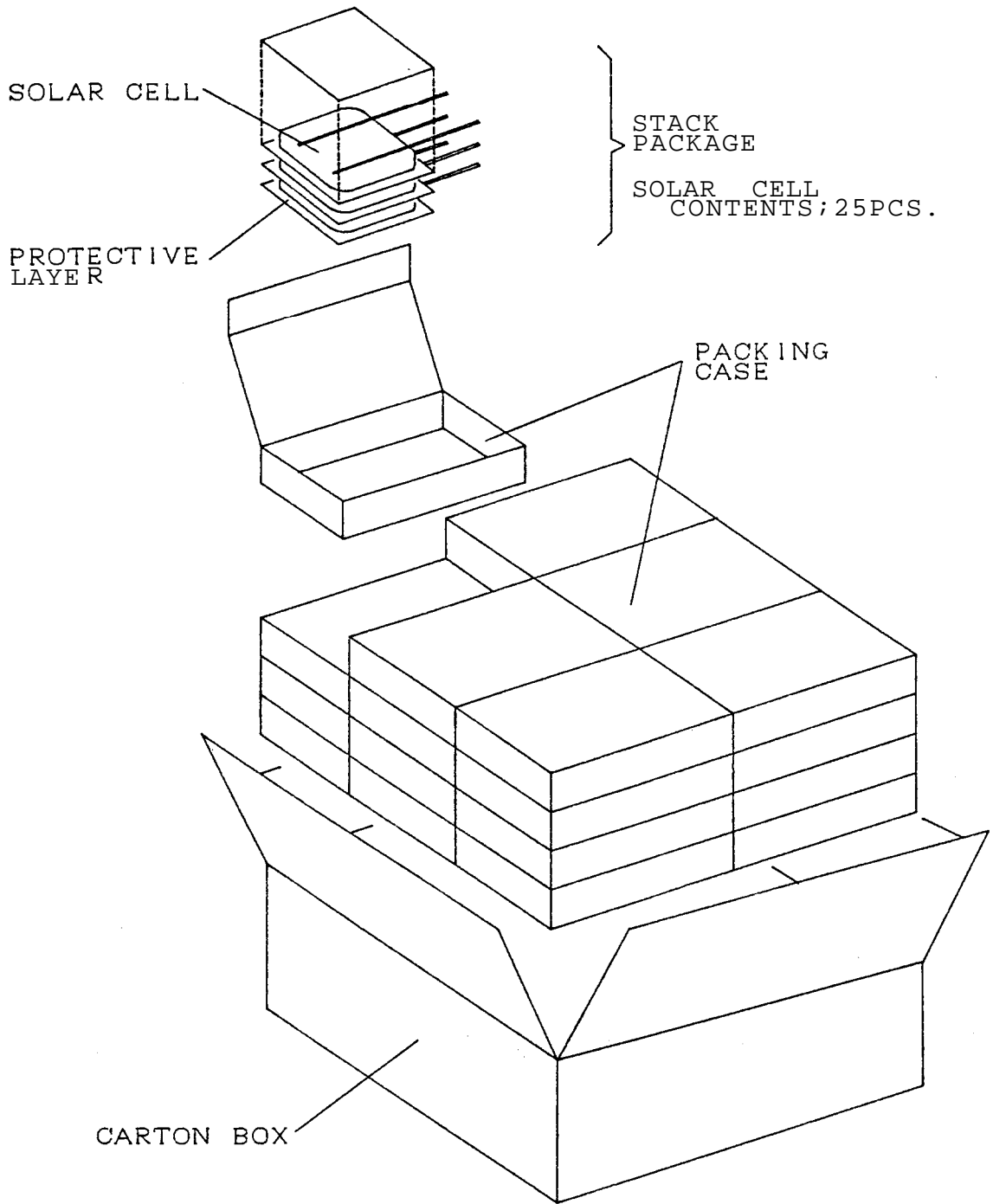
125±2
62±1



If necessary, contact shape will be modified without prior notice for performance improvement.
 (Modification not interfere with assembly.)

適用機種 APPLICABLE MODEL		尺度 SCALE	単位 UNIT	△			
		—	mm	△			
改訂日 DATE	改訂記事 REVISE	担当 CHARG					
反厚 THICKNESS	員数 PIECES	材質 MATERIAL	仕上 FINISH	名称 NAME	Rear View		
日付 DATE	NOV. 28. 1994			コード CODE			
設計 DESIGN	製図 DRAW	写図 TRACE	検図 CHECK	承認 APPROVE	シャープ株式会社 電子部品事業本部		
<i>M. Ochi</i>	<i>K. Kawanishi</i>		<i>M. Ochi</i>	<i>K. Kawanishi</i>	PHOTOVOLTAICS DIVISION		
					SHARP CORPORATION		
				図番 DRAWING No.	SISIE1941512151		

THIS DRAWING WILL BE SUBJECT TO MODIFICATION
WITHOUT PRIOR NOTICE FOR PERFORMANCE IMPROVEMENT.



適用機種 APPLICABLE MODEL		尺度 SCALE	単位 UNIT	△	△					
		$\frac{1}{2}$				改訂日 DATE	改訂記事 REVISE	担当 CHARGE		
板厚 THICKNESS	員数 PIECES	材質 MATERIAL	仕上げ FINISH	名称 NAME	PACKAGE CASE OUTLINE					
				コード CODE						
日付 DATE	FEB. 13. 1992		シャープ株式会社 電子部品事業本部		DRAWING No S S E 9 1 7 4 6					
設計 DESIGN	製図 DRAW	写図 TRACE	検図 CHECK	承認 APPROVE					太陽電池事業部 技術部	
<i>m. Otsu</i>	<i>m. Otsu</i>	<i>S. Ishibashi</i>	<i>K. Niikawa</i>						SHARP CORPORATION	

SHARP

NO.	N A M E	PIECES	MATERIAL	FINISH	NOTE
①	Inter-connector		Cu	Solder	
②	Aluminum frame	4	Al		
③	Solar cell	36	Si		5%±
④	Terminal box	1	ABS		Include-Bypass diod
⑤	Glass	1			
⑥	Resin		EVA		
⑦	film				
⑧	Rubber				
⑨	Screw	8	Stainless steel		
⑩	SCREW	2	Stainless steel		

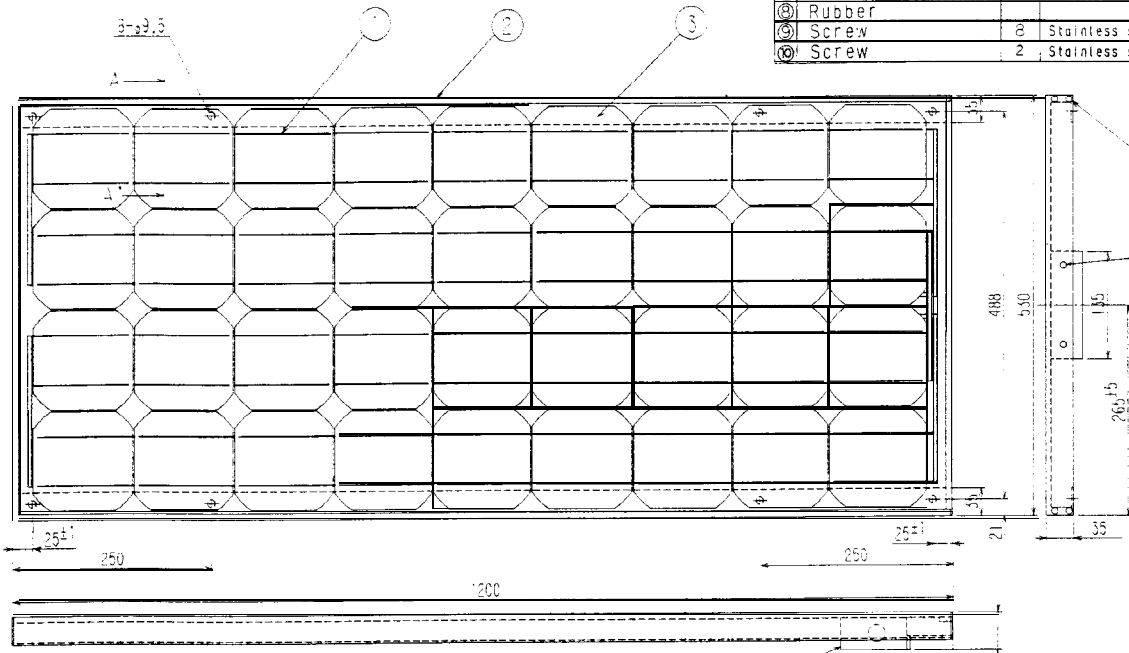
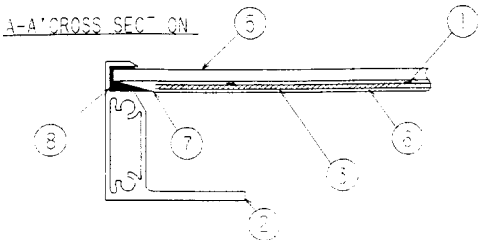


Table 1

Dimensions	Permissible Deviation
0.3 < L ≤ 3	±0.05
3 < L ≤ 30	±0.1
30 < L ≤ 120	±0.15
120 < L ≤ 315	±0.2
315 < L ≤ 1000	±0.3
1000 < L ≤ 3000	±0.5



Spec. conditions will be subject to mod. final or without prior notice for performance improvement.

Permissible deviations of dimensions without tolerance indication is shown in table 1.

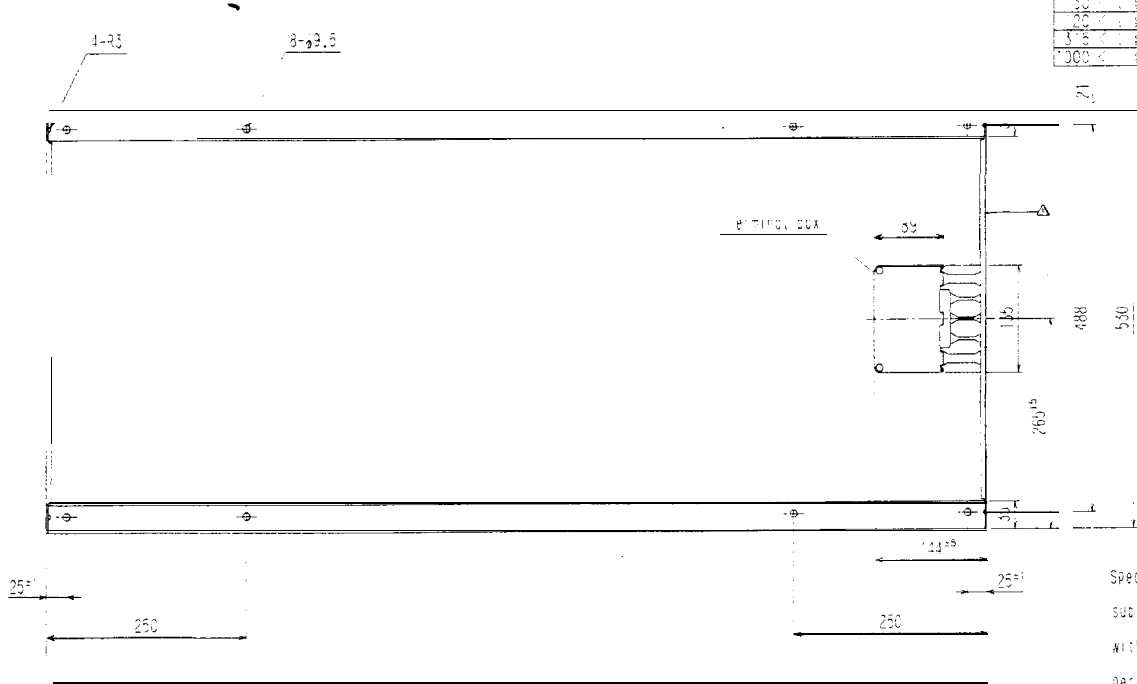
適用機種	N751A85E	尺 度	SCALE	単 位	UNIT	△
APPLICABLE MODEL			1/5		1/5mm	△
改訂日 DATE	改訂記事 REVISE	担当 CHARG				
板厚 THICKNESS	張数 PIECES	材質 MATERIAL	仕上 FINISH	名 称	N751A85E SOLAR MODULE	
				NAME	(Front View)	
日付 DATE	99d. 8. 7	シヤープ株式会社	電子部品事業本部	コード		
DESIGN DRAW	TRACER	CHECK	APPROVE	CODE		
				太陽電池事業部	技術部	
				SHARP CORPORATION	DRAWING No.	SSE94208

SHARP

Permissible deviations in dimensions without tolerance indication as shown in Table A.

Table A

Dimension	Part	Deviation
Overall length	±0.5	±0.5
Overall width	±0.5	±0.5
Panel length	±0.5	±0.5
Panel width	±0.5	±0.5
Mounting hole diameter	±0.1	±0.1
Mounting hole position	±0.2	±0.2
Mounting hole diameter	±0.1	±0.1
Mounting hole position	±0.2	±0.2
Mounting hole diameter	±0.1	±0.1
Mounting hole position	±0.2	±0.2



Specifications will be subject to modification without prior notice for performance improvement.

適用機種 APPLICABLE MODEL	NFS148SE	R 変 SCALE	1/5	単位 UNIT	1mm	△	△ 90.9.2 Dimension from modification of No. 90.9.2 改訂日 DATE改訂記号 REVISE 担当 CHARG
板厚 THICKNESS	片数 PIECES	材質 MATERIAL	仕上 FINISH	名称 NAME	NFS148SE SOLAR MODULE (Back View)		
日付 DATE	99.4.8.17	設計 DRAW	TRACE	チェック CHECK	APPROVE	コード CODE	
SHARP CORPORATION		シャープ株式会社 電子部品事業本部		太陽電池事業部 改訂部		図番 DRAWING No.	SSE94209