



# STS-8857

## Transmissive Switch Assembly

### Features

- Non contact switching
- Three wires for electrical connection
- Fast switching speed

### Description

The STS-8857 consists of an infrared emitting diode and an NPN silicon phototransistor mounted on opposite sides of a 3.8 mm wide slot. Phototransistor switching takes place whenever an opaque object passes through the slot. The polysulfone housing (2) reduces interference from ambient light and provides dirt and dust protection. The 40 cm minimum length wires simplify the connection to the PC board.

### Absolute Maximum Ratings

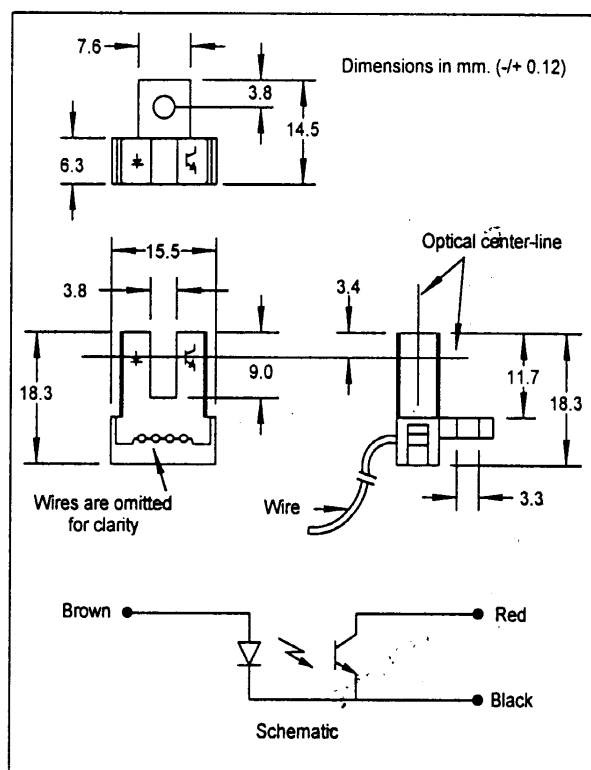
Operating & Storage Temperature  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

#### Input Diode

Reverse Voltage 3 V  
 Continuous Forward Current 50 mA  
 Peak Forward Current (1  $\mu\text{s}$  pulse) 3 A  
 Power Dissipation (1) 100 mW

#### Phototransistor

Collector-Emitter Voltage 30 V  
 Emitter-Collector Voltage 5 V  
 Power Dissipation (1) 100 mW



### Notes:

- (1) Derate linearly 1.33 mW/ $^{\circ}\text{C}$  above  $25^{\circ}\text{C}$ .
- (2) Plastic housing is soluble in chlorinated hydrocarbons and ketones. Recommended cleaning agents are methanol or isopropanol.

### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Min	Typ	Max	Units	Test Conditions
<b>Input Diode</b>						
$V_F$	Forward Voltage		1.2	1.7	V	$I_F = 20 \text{ mA}$
$I_R$	Reverse Current			10	$\mu\text{A}$	$V_R = 3 \text{ V}$
<b>Output Phototransistor</b>						
$I_{CEO}$	Collector Dark Current			100	nA	$V_{CE}=10\text{V}, E_e=0$
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	30			V	$I_C=100\mu\text{A}, E_e=0$
$BV_{ECO}$	Emitter-Collector Breakdown Voltage	5			V	$I_C=100\mu\text{A}, E_e=0$
<b>Coupled</b>						
$V_{CE(SAT)}$	Collector Emitter Saturation Voltage			0.4	V	$I_C=100\mu\text{A}, I_F = 20 \text{ mA}$
$I_{C(ON)}$	On-State Collector Current	1.5			mA	$V_{CE} = 10\text{V}, I_F = 20 \text{ mA}$

Specifications subject to change without notice

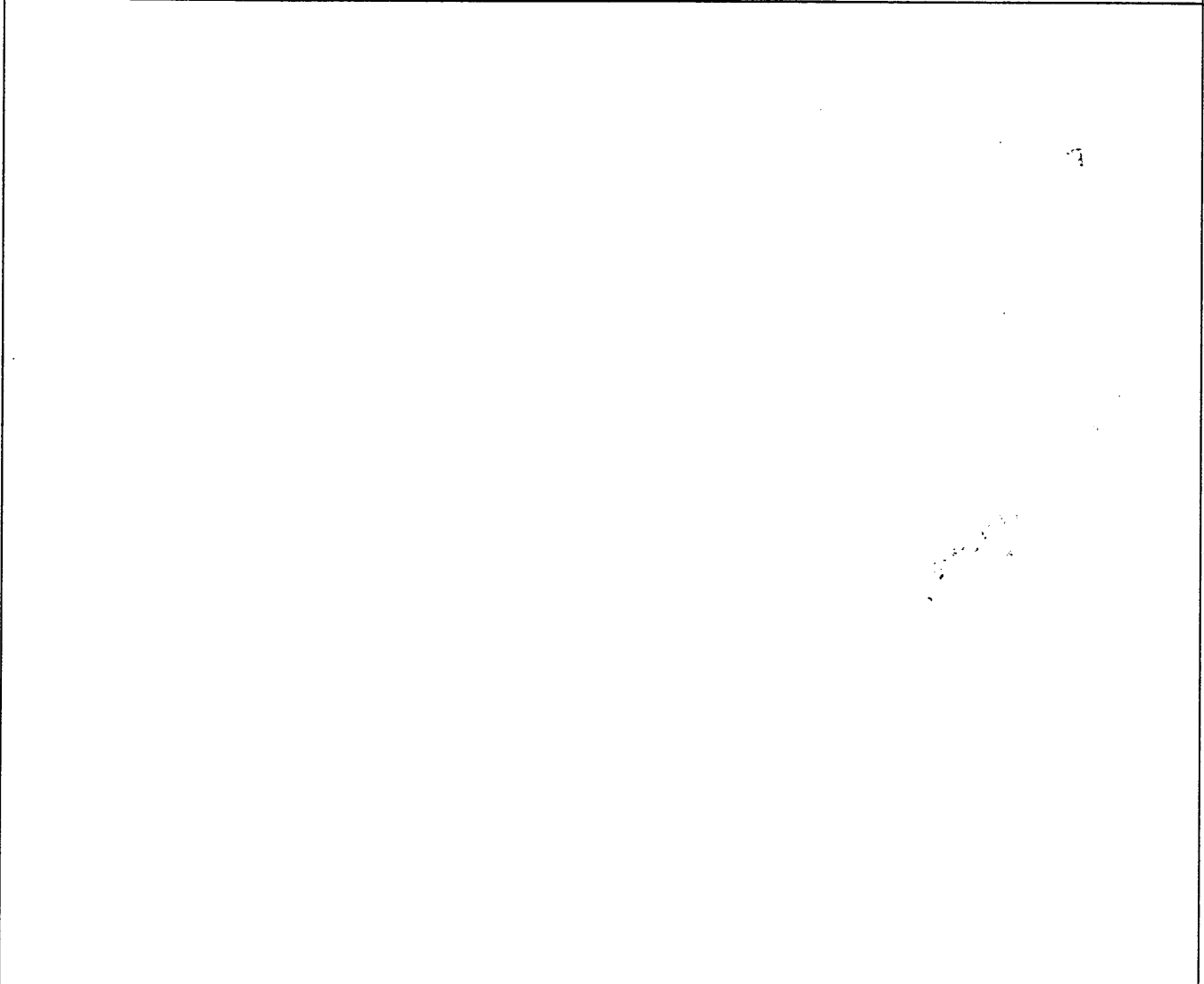
103057 REV 1


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Revisions			
Revision	Date	ECN	Description
0	07-Jan-97		First release
1	11-Mar-99	574	Removed form Description:-"The phototransistor is apertured (0.5 mm X 1.5 mm) to provide high resolution."



		DRAWN: L. Curvan			
		CHK:			
		APPRVL:			
TITLE:					
<b>Data Sheet, STS-8857 Transmissive Switch</b>					
SCALE:	DATE:	SIZE:	DWG NO:	REV	SHEET
NONE	07-Jan-97	A	103057	1	1 OF 2

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