



**0.5mm APERTURE OPTO-ELECTRONIC SINGLE CHANNEL WIDE GAP SLOTTED INTERRUPTER SWITCHES WITH TRANSISTOR SENSORS**

**DESCRIPTION**

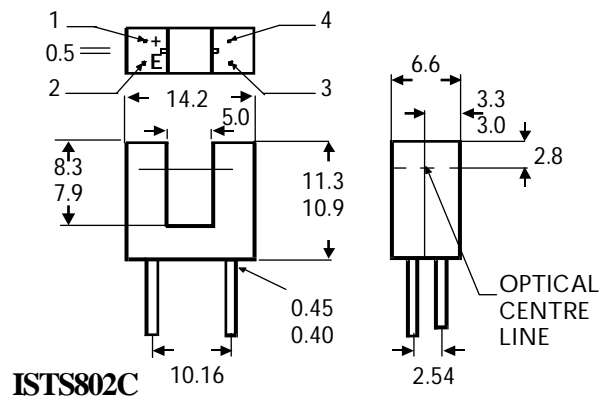
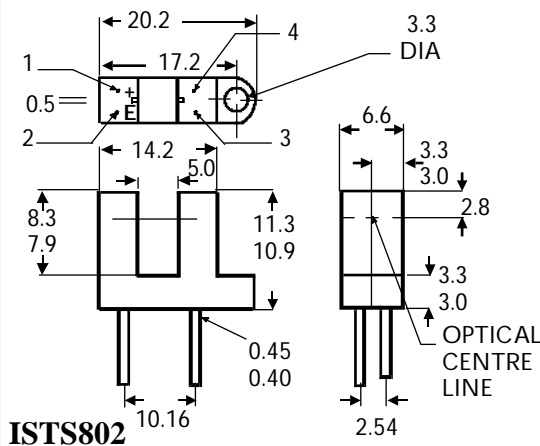
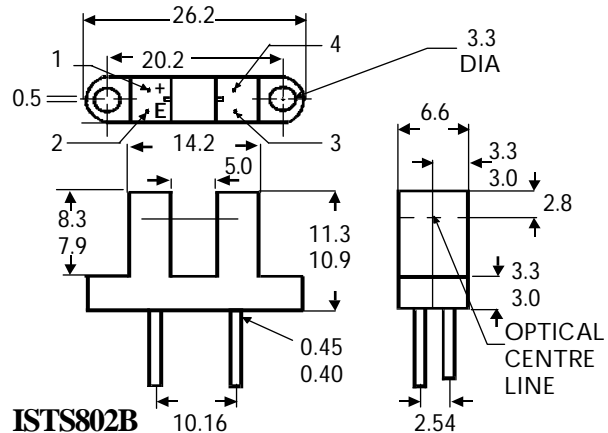
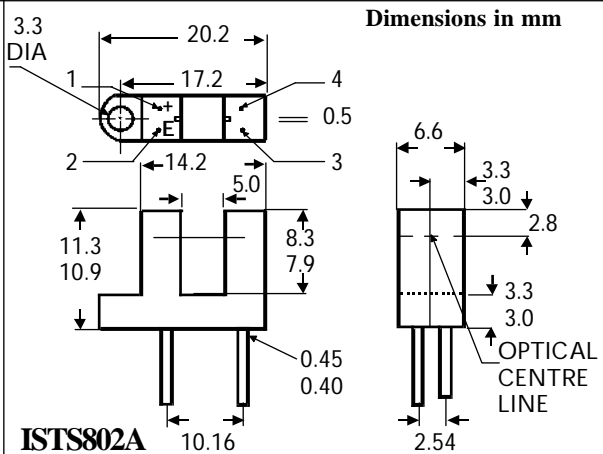
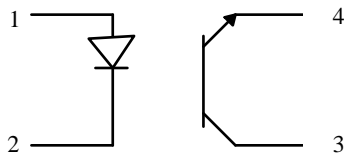
The ISTS802 series of opaque photointerrupters are single channel switches consisting of a Gallium Arsenide infrared emitting diode and a NPN silicon photo transistor mounted in a polycarbonate housing. The package is designed to optimise the mechanical resolution, coupling efficiency, ambient light rejection, cost and reliability. Operating on the principle that objects opaque to infrared will interrupt the transmission of light between an infrared emitting diode and a photo sensor switching the output from an "ON" state to an "OFF" state.

**FEATURES**

- High Sensing Accuracy Aperture - 0.5mm
- 5mm Gap between LED and Detector
- Also available with flying leads, with or without connector, supplied as required

**APPLICATIONS**

- Copiers, Printers, Facsimilies, Record Players, Cassette Decks, Optoelectronic Switches, VCR's



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**ABSOLUTE MAXIMUM RATINGS**  
(25°C unless otherwise specified)

Storage Temperature	_____	-40°C to + 85°C
Operating Temperature	_____	-25°C to + 85°C
Lead Soldering Temperature		
(1/16 inch (1.6mm) from case for 10 secs)		260°C

**INPUT DIODE**

Forward Current	_____	50mA
Reverse Voltage	_____	5V
Power Dissipation	_____	75mW

**OUTPUT TRANSISTOR**

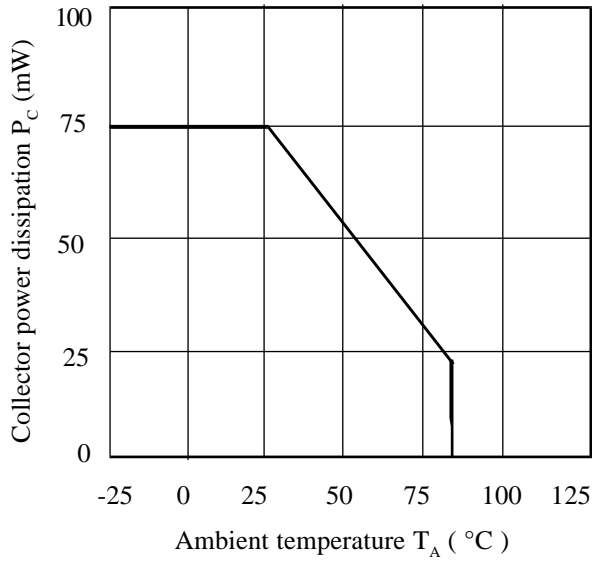
Collector-emitter Voltage $BV_{CEO}$	_____	30V
Emitter-collector Voltage $BV_{ECO}$	_____	5V
Collector Current $I_C$	_____	20mA
Power Dissipation	_____	75mW

**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

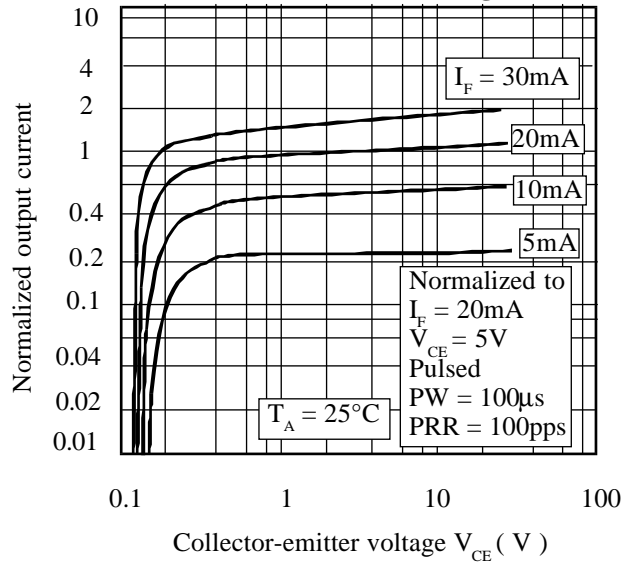
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )	1.0	1.15	1.3	V	$I_F = 10\text{mA}$ $I_R = 10\mu\text{A}$ $V_R = 3\text{V}$
	Reverse Voltage ( $V_R$ )	3			V	
	Reverse Current ( $I_R$ )			10	$\mu\text{A}$	
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) ( Note 1 )	30			V	$I_C = 1\text{mA}$  $I_E = 100\mu\text{A}$  $V_{CE} = 24\text{V}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	5			V	
	Collector-emitter Dark Current ( $I_{CEO}$ )			100	nA	
Coupled	Current Transfer Ratio ( CTR ) ( Note 1 )	2			%	$20\text{mA } I_F, 5\text{V } V_{CE}$  $20\text{mA } I_F, 200\mu\text{A } I_C$  $V_{CE} = 5\text{V},$ $I_C = 2\text{mA}, R_L = 100\Omega$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	
	Output Rise Time tr		6		$\mu\text{s}$	
	Output Fall Time tf		6		$\mu\text{s}$	

Note 1 Special Selections are available on request. Please consult the factory.

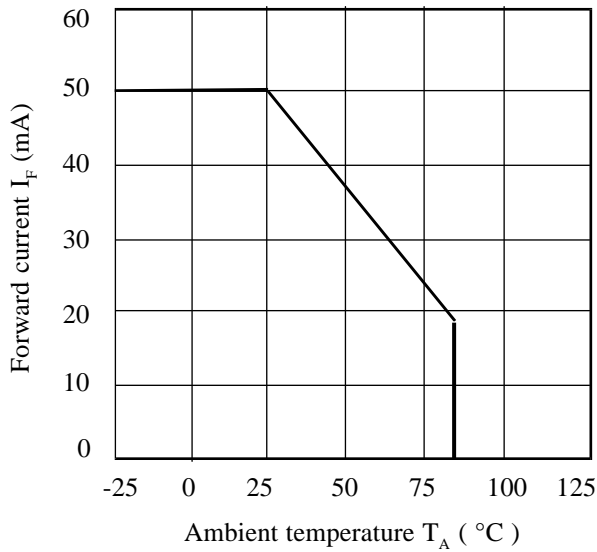
**Collector Power Dissipation vs. Ambient Temperature**



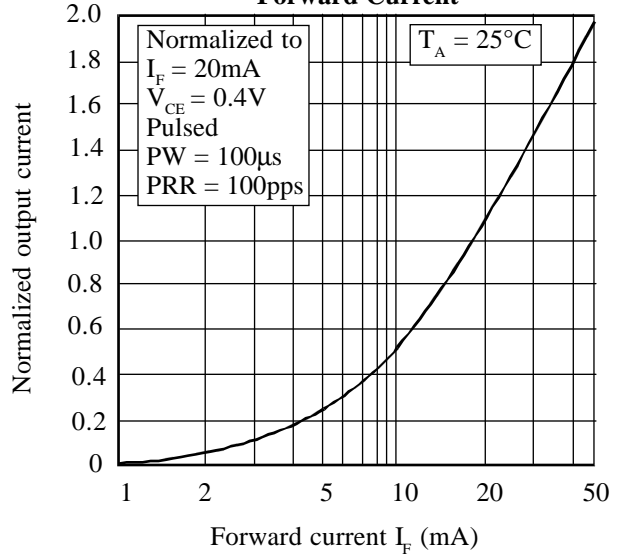
**Normalized Output Current vs. Collector-emitter Voltage**



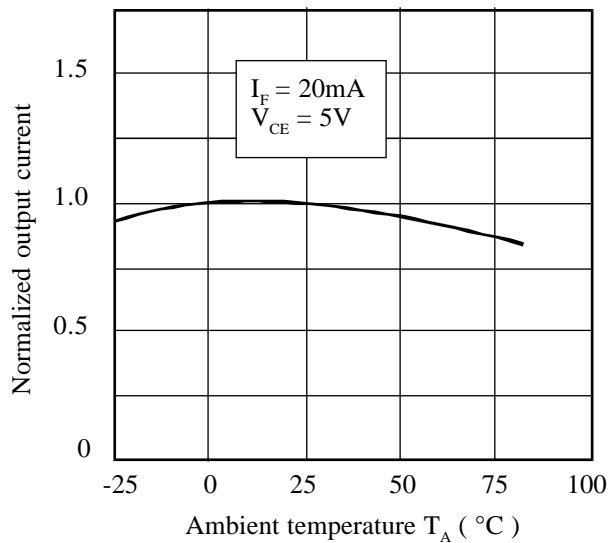
**Forward Current vs. Ambient Temperature**



**Normalized Output Current vs. Forward Current**



**Normalized Output Current vs. Ambient Temperature**



**Collector-emitter Saturation Voltage vs. Ambient Temperature**

