



**REFLECTIVE OPTICAL SWITCHES**

**DESCRIPTION**

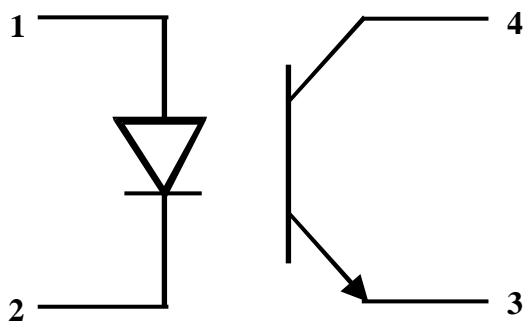
The ISTS149, ISTS703A, ISTS708 each consist of an infrared emitting diode and a NPN silicon photo transistor mounted side by side on converging axes in a polycarbonate housing. The package is designed to optimise the mechanical resolution, coupling efficiency, ambient light rejection, cost and reliability. The phototransistor responds to radiation from the emitter only when a reflective object passes within its field of view

**FEATURES**

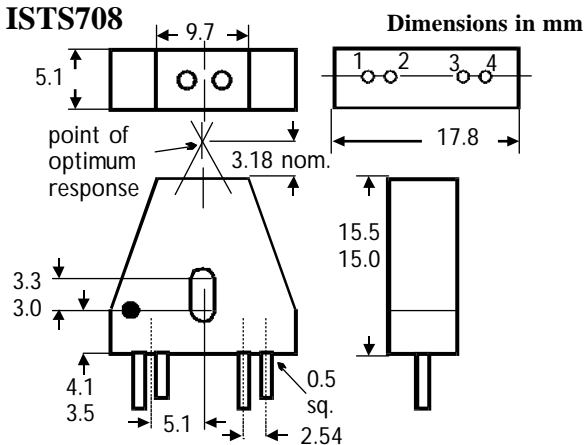
- Phototransistor output
- Opaque housing provides improved visible light rejection
- Three available package types
- Adjustable side-mounting provision
- Also available with flying leads, with or without connector, supplied as required

**APPLICATIONS**

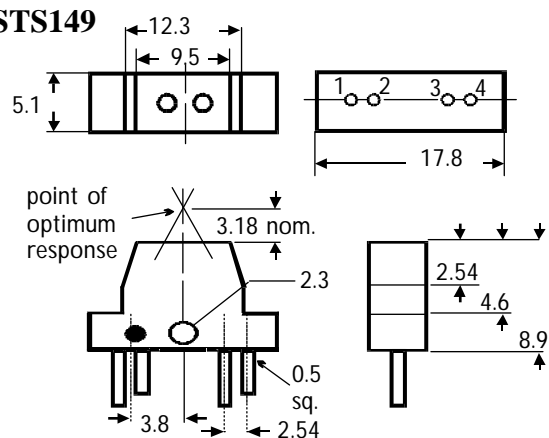
- Copiers, Printers, Facsimilies, Record Players, Cassette Decks, Optoelectronic Switches, VCR's,



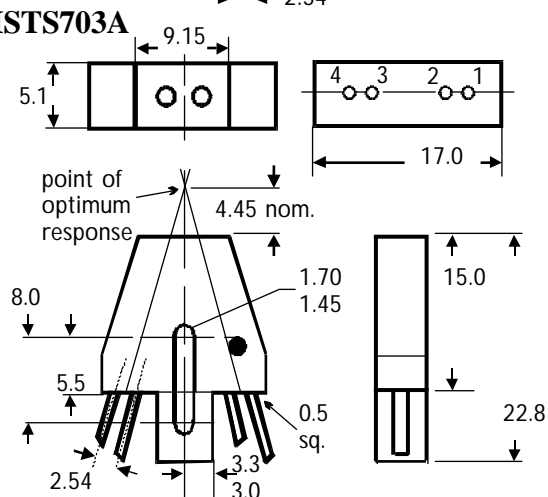
**ISTS708**



**ISTS149**



**ISTS703A**



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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	_____	60mA
Reverse Voltage	_____	3V
Power Dissipation	_____	90mW

**OUTPUT TRANSISTOR**

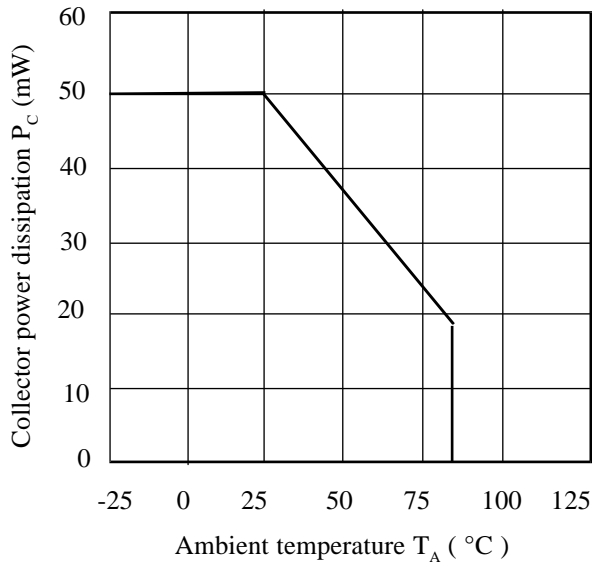
Collector-emitter Voltage $BV_{CEO}$	_____	30V
Emitter-collector Voltage $BV_{ECO}$	_____	5V
Collector Current $I_C$	_____	20mA
Power Dissipation	_____	50mW

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

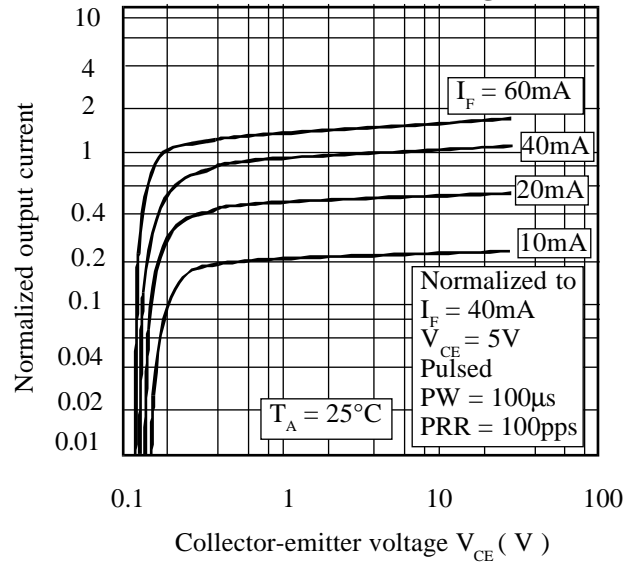
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION	
Input	Forward Voltage ( $V_F$ )			1.6	V	$I_F = 40\text{mA}$ $I_R = 100\mu\text{A}$ $V_R = 3\text{V}$	
	Reverse Voltage ( $V_R$ )	3			V		
	Reverse Current ( $I_R$ )			100	$\mu\text{A}$		
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) ( Note 1 )	30			V	$I_C = 1\text{mA}$	
	Emitter-collector Breakdown ( $BV_{ECO}$ )	5			V	$I_E = 100\mu\text{A}$	
	Collector-emitter Dark Current ( $I_{CEO}$ )			100	nA	$V_{CE} = 15\text{V}$	
Coupled	On-State Collector Current $I_C$ ( ON ) ( Note 1 )					$40\text{mA } I_F, 5\text{V } V_{CE}$ $D(\text{mm}) = 3.8\text{mm}$	
	ISTS149	25			$\mu\text{A}$		
	ISTS703A	200			$\mu\text{A}$		
	ISTS708	10			$\mu\text{A}$		
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$						$40\text{mA } I_F, 3\mu\text{A } I_C$ $D(\text{mm}) = 3.8\text{mm}$
	ISTS149			0.4	V		
	ISTS703A			0.4	V		
	ISTS708			0.4	V		
					$40\text{mA } I_F, 100\mu\text{A } I_C$ $D(\text{mm}) = 3.8\text{mm}$		
					$40\text{mA } I_F, 3\mu\text{A } I_C$ $D(\text{mm}) = 3.8\text{mm}$		

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

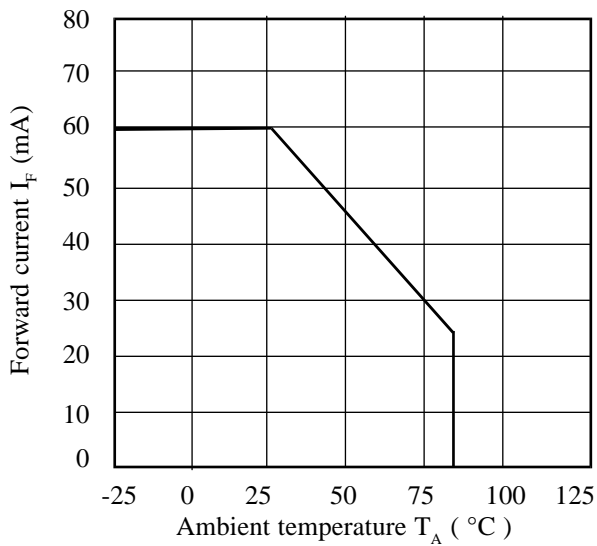
**Collector Power Dissipation vs. Ambient Temperature**



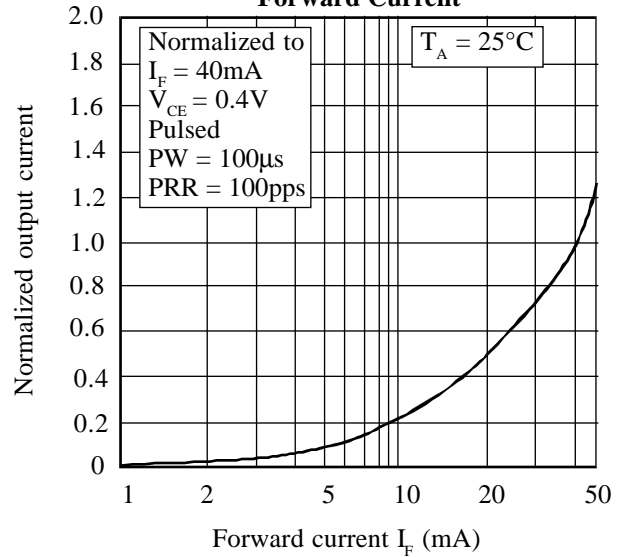
**Normalized Output Current vs. Collector-emitter Voltage**



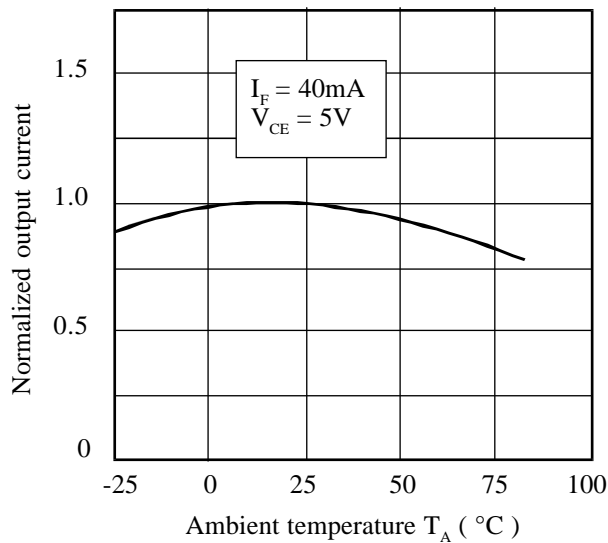
**Forward Current vs. Ambient Temperature**



**Normalized Output Current vs. Forward Current**



**Normalized Output Current vs. Ambient Temperature**



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

