

ISTS149, ISTS703A, ISTS708



REFLECTIVE OPTICAL SWITCHES

DESCRIPTION

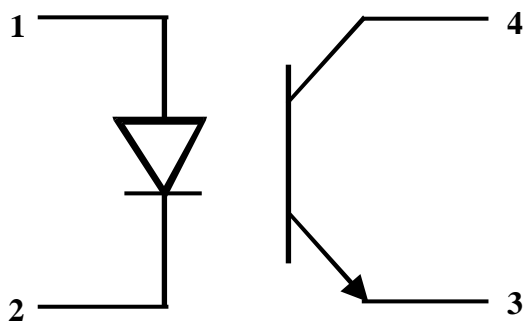
The ISTS149, ISTS703A, ISTS708 each consist of an infrared emitting diode and a NPN silicon photo transistor mounted side by side on converging axes in a polycarbonate housing. The package is designed to optimise the mechanical resolution, coupling efficiency, ambient light rejection, cost and reliability.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

FEATURES

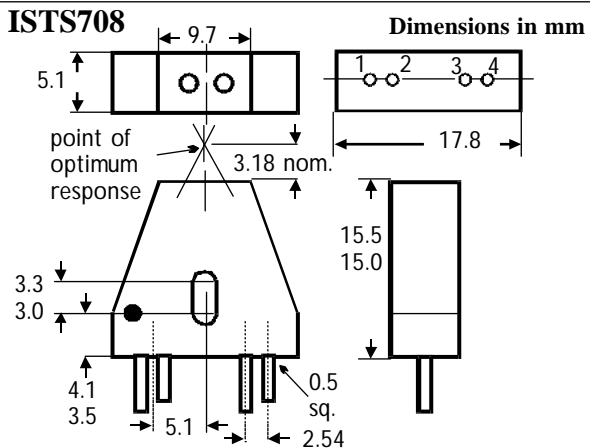
- Phototransistor output
- Opaque housing provides improved visible light rejection
- Three available package types
- Adjustable side-mounting provision
- Also available with flying leads, with or without connector, supplied as required

APPLICATIONS

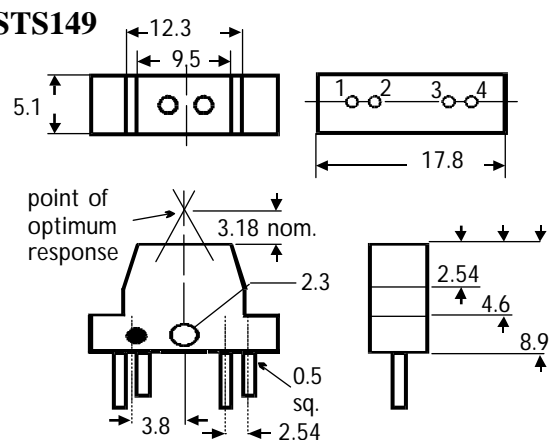
- Copiers, Printers, Facsimilies, Record Players, Cassette Decks, Optoelectronic Switches, VCR's,



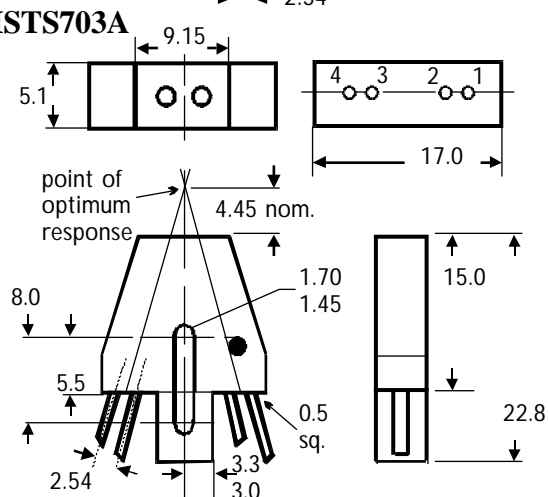
ISTS708



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

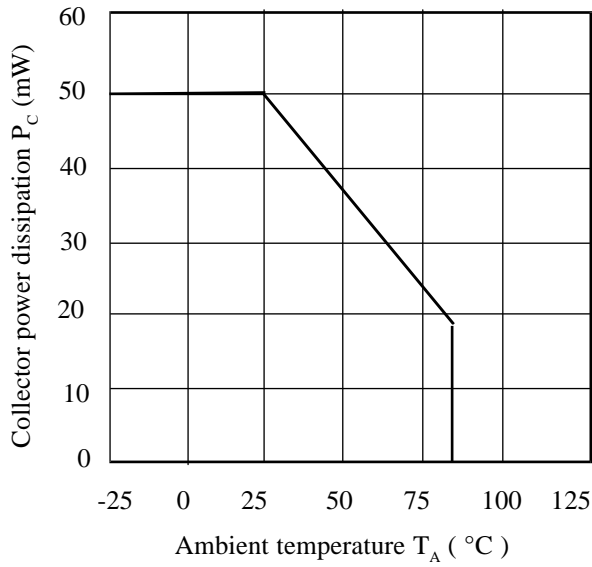
Collector-emitter Voltage BV_{CEO}	_____	30V
Emitter-collector Voltage BV_{ECO}	_____	5V
Collector Current I_C	_____	20mA
Power Dissipation	_____	50mW

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

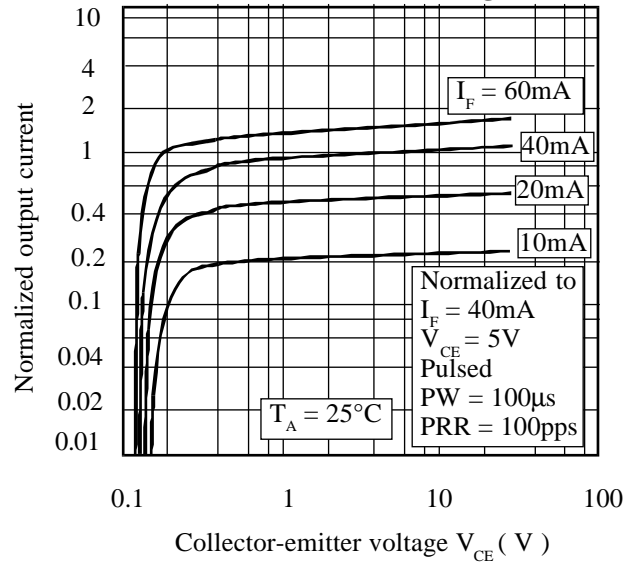
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION	
Input	Forward Voltage (V_F)			1.6	V	$I_F = 40\text{mA}$ $I_R = 100\mu\text{A}$ $V_R = 3\text{V}$	
	Reverse Voltage (V_R)	3			V		
	Reverse Current (I_R)			100	μA		
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 1)	30			V	$I_C = 1\text{mA}$	
	Emitter-collector 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			μA		
	ISTS703A	200			μA		
	ISTS708	10			μA		
	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.

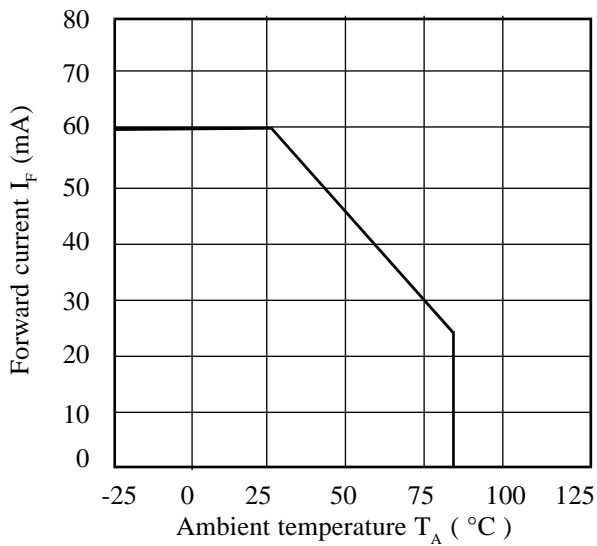
Collector Power Dissipation vs. Ambient Temperature



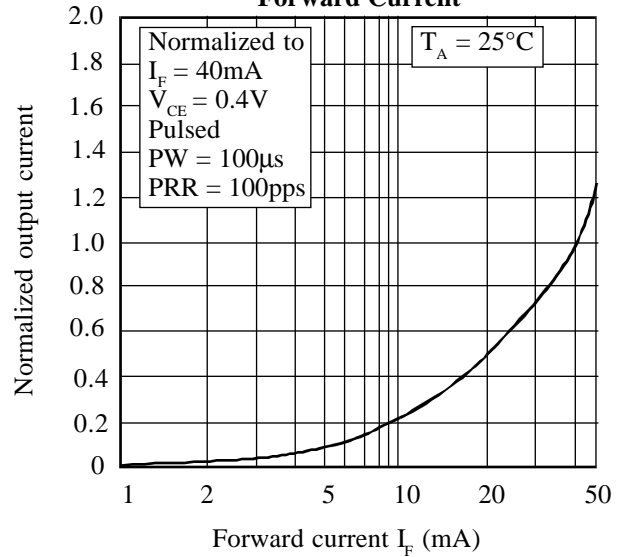
Normalized Output Current vs. Collector-emitter Voltage



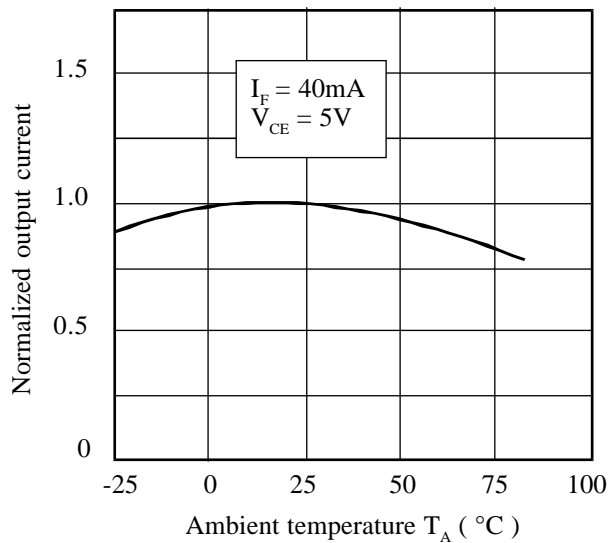
Forward Current vs. Ambient Temperature



Normalized Output Current vs. Forward Current



Normalized Output Current vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature

