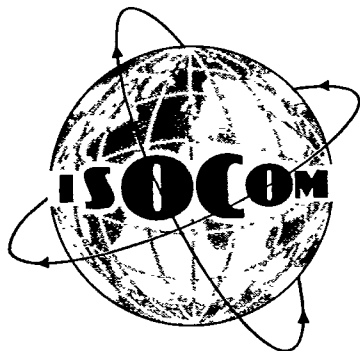
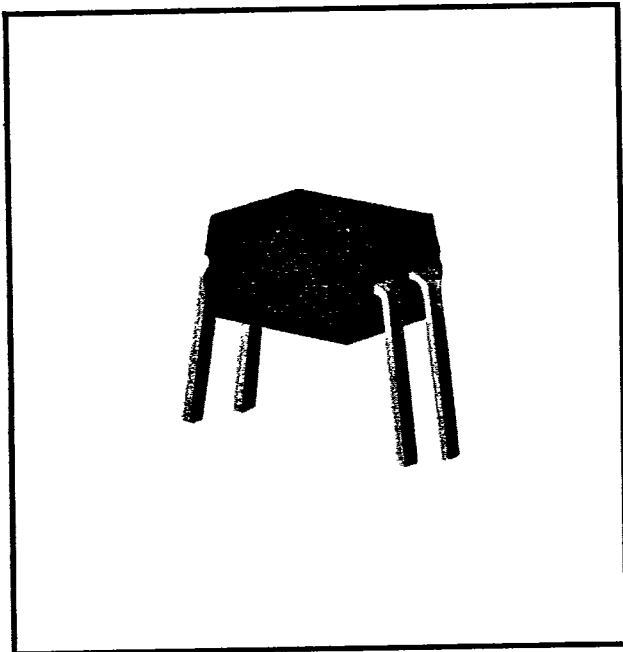


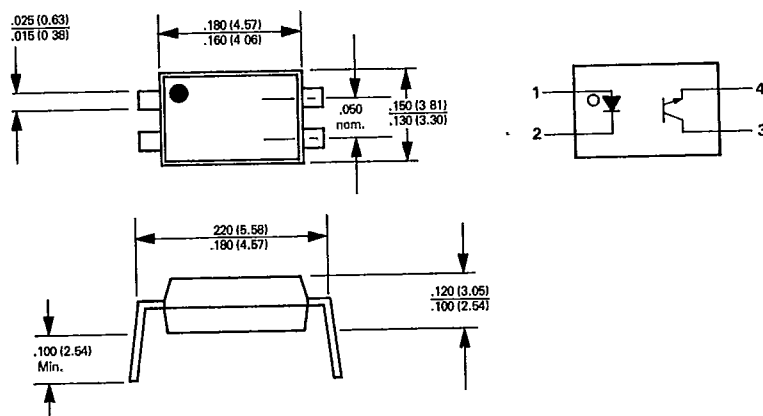


IS801 IS802 IS803 IS804 IS805

Optically Coupled Isolators



PACKAGE DIMENSIONS IN INCHES (MM)



FEATURES

- 2500 V Isolation
- High DC Current Transfer Ratio
- 4-Pin D.I.L. Package

DESCRIPTION

The IS 800 Series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode and an NPN silicon photo-transistor.

All electrical parameters are 100% tested. Specifications are guaranteed to a cumulative 0.65% AQL.

ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise noted)

Storage Temperature	—55°C to +150°C
Operating Temperature	±55°C to +100°C
Lead Soldering Temperature	
(1/16 inch (1.6 mm) from case for 10 seconds)	260°C
Input-to-Output Isolation Voltage	2500 V (RMS)

Input Diode

Forward D.C. Current	60 mA
Reverse D.C. Voltage	6 V
Peak forward current (1 μs p.w. 300 pps)	3 A
Power Dissipation	
(derate linearly 0.93 mW/°C above 25°C)	70 mW

Output Transistor

Collector-emitter Voltage BV_{CEO} IS801, 802, 803	60 V
IS804, 805	30 V
Emitter-collector Voltage BV_{ECO}	7 V
Power Dissipation	
(derate linearly 1.33 mW/°C above 25°C)	100 mW

Package

Total Power Dissipation	
(derate linearly 2.27 mW/°C above 25°C)	170 mW

ISOCOM INC., 274 E.HAMILTON AVENUE, SUITE F, CAMPBELL, CALIFORNIA 95008 U.S.A.

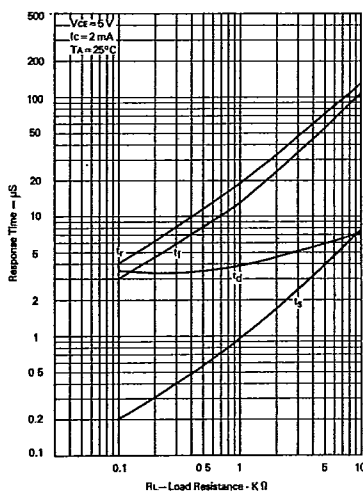
Phone: (408) 370-2212 Telex: 595933

ISOCOM LIMITED, PROSPECT WAY, PARK VIEW INDUSTRIAL ESTATE, BRENDA ROAD, HARTLEPOOL, CLEVELAND, ENGLAND

Telephone: (0429) 221431 Telex: 58470 ISOCOM G

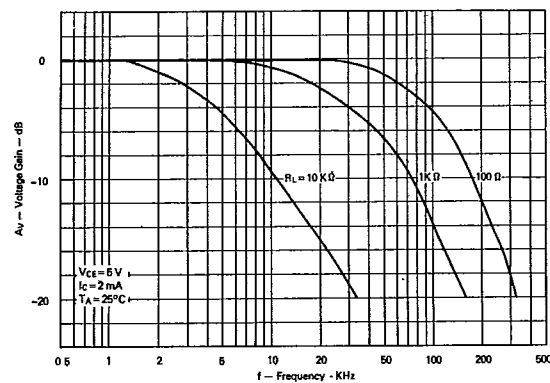
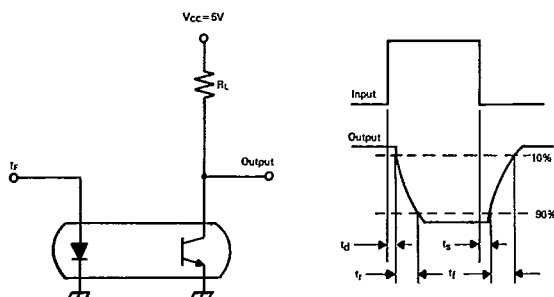
ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

	Parameter	Min.	Typ	Max.	Units	Test Condition
Input	Forward Voltage (V_F)		1.2	1.65	Volt	$I_F = 60 \text{ mA}$
	Capacitance		30		pF	$V_R = 0, f = 1 \text{ MHz}$
	Reverse Current (I_R)			10	μA	$V_R = 6 \text{ V}$
	Reverse Breakdown Voltage (V_R)	6.0			Volt	$I_R = 100 \mu\text{A}$
Output	Collector-emitter Voltage IS 801, 802, 803 (BV_{CEO})	60			Volt	$I_C = 1 \text{ mA}, I_B = 0$
	IS 804, 805	30			Volt	
	Emitter-collector Voltage (BV_{ECO})	7			Volt	$I_E = 100 \mu\text{A}, I_C = 0$
	Collector-emitter Dark Current (I_{CEO})		5	50	nA	$V_{CE} = 10 \text{ V}, I_B = 0$
Coupled	DC Current Transfer Ratio I_C/I_F					$I_F = 10 \text{ mA}, V_{CE} = 5 \text{ V}$
	IS 801	40		80	%	
	IS 802	63		125	%	
	IS 803	100		200	%	
	IS 804	20			%	
	IS 805	50			%	
	Input-to-Output Isolation Resistance (R_{IO})	10^{11}			ohm	$V_{IO} = 500 \text{ V}, (\text{note } 1)$
	Collector-emitter Saturation Voltage $V_{CE}(\text{SAT})$		0.2	0.4	Volt	$I_F = 10 \text{ mA}, I_C = 2.5 \text{ mA}$
	Capacitance Input to Output (C_{IO})		0.6		pF	$f = 1 \text{ MHz}, (\text{note } 1)$
	Output Rise Time (T_R)		2.0	4.0	μs	$I_F = 10 \text{ mA}, V_{CC} = 5.0 \text{ V}$
	Output Turn-on Time (T_{ON})		3.0	5.6	μs	$R_L = 75 \Omega, T_A = 25^\circ\text{C}$
	Output Fall Time (T_F)		2.0	3.5	μs	
	Output Turn-off Time (T_{OFF})		2.5	4.1	μs	



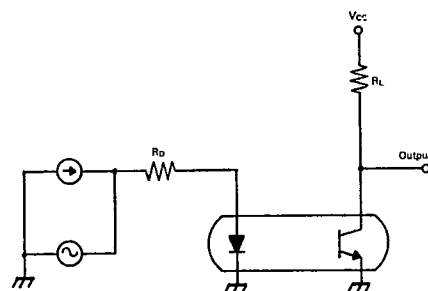
1 (a). RESPONSE TIME VS LOAD RESISTANCE

1 (b). TEST CIRCUIT FOR RESPONSE TIME

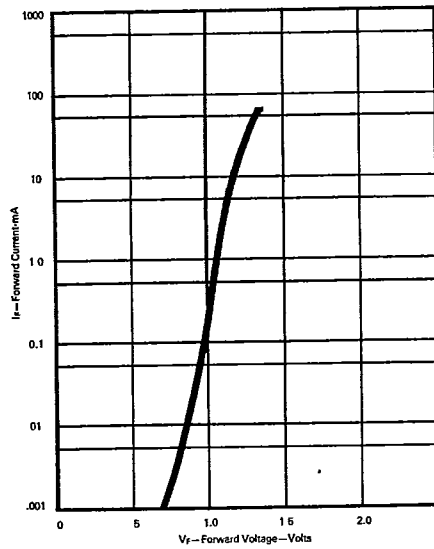


2 (a). FREQUENCY RESPONSE

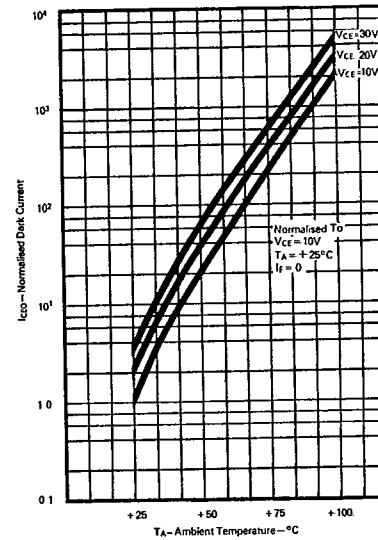
2 (b). TEST CIRCUIT FOR FREQUENCY RESPONSE



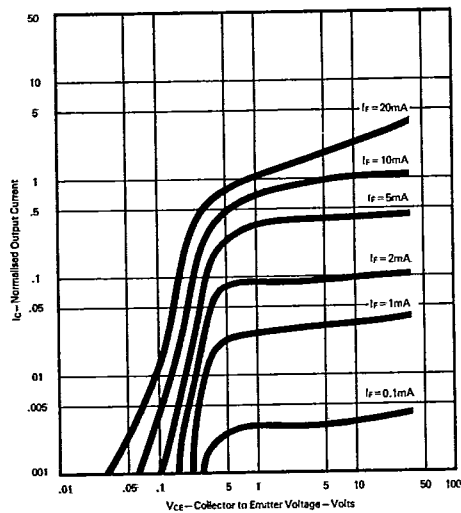
Note 1. Measured with input leads shorted together and output leads shorted together



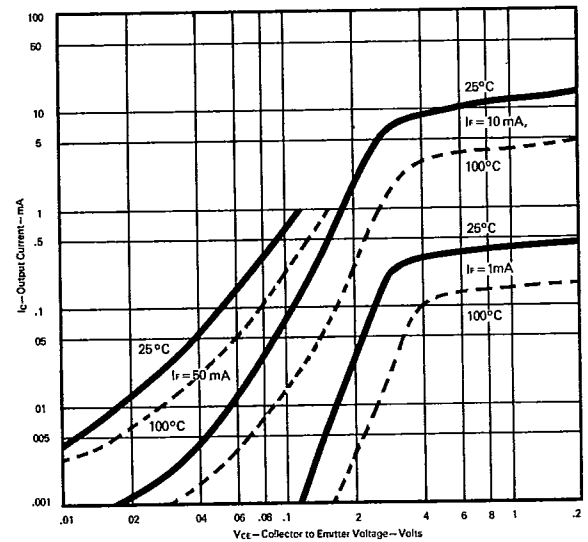
3. INPUT CHARACTERISTICS



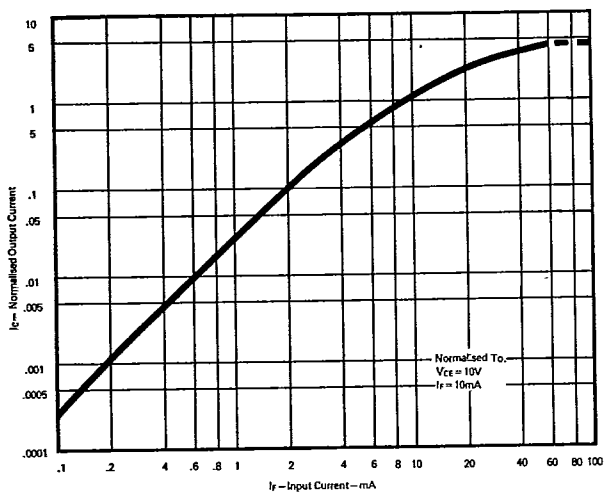
4. DARK CURRENT VS TEMPERATURE



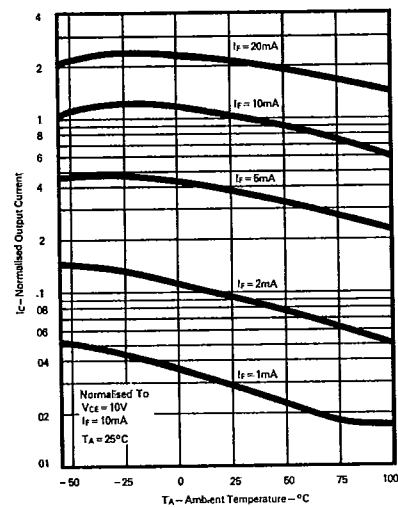
5. OUTPUT CHARACTERISTICS



6. OUTPUT CHARACTERISTICS



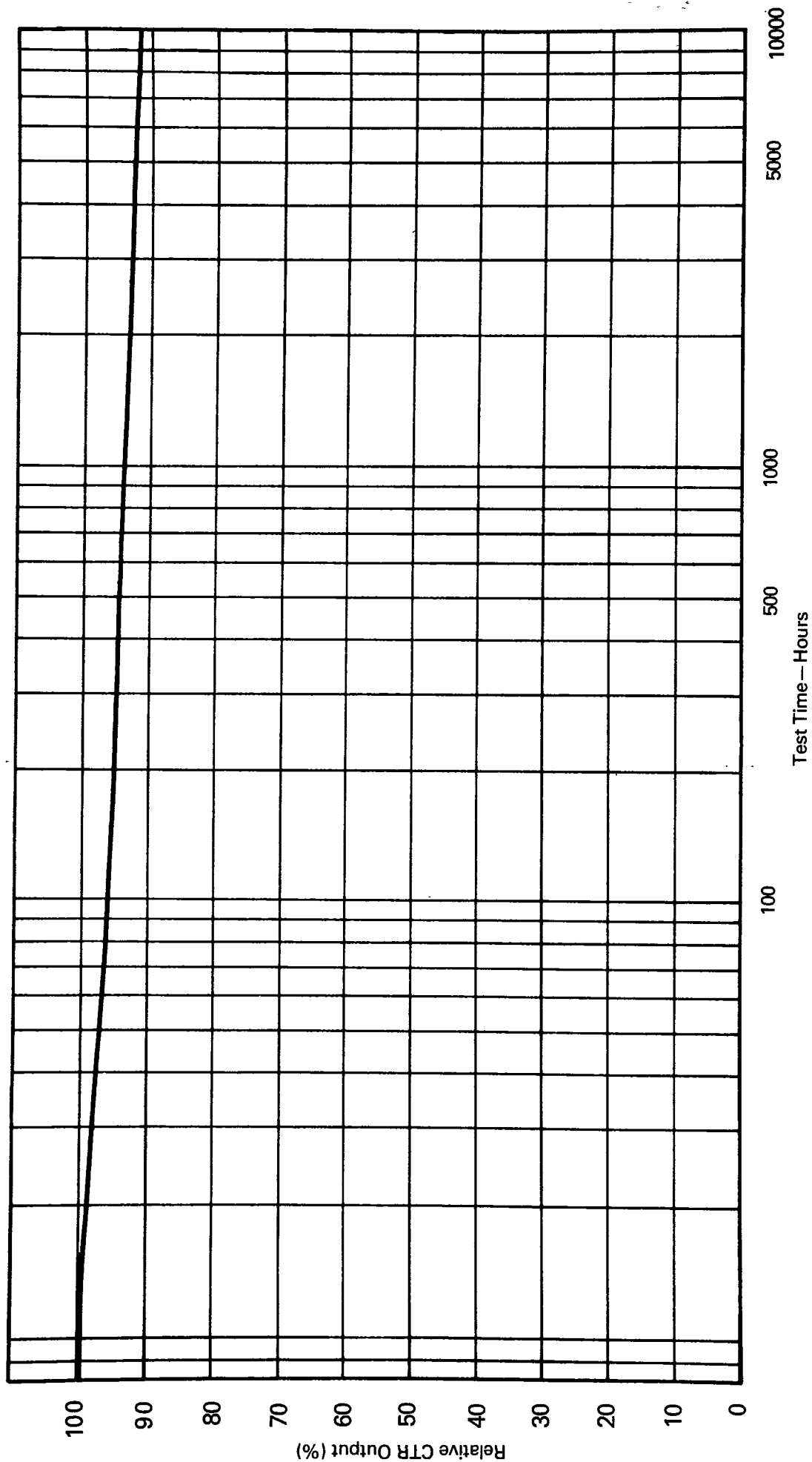
7. OUTPUT CURRENT VS INPUT CURRENT



8. OUTPUT CURRENT VS TEMPERATURE

3

Test Conditions: $I_F = 50 \text{ mA}$, $P_C = 100 \text{ mW}$, $T_A = 25^\circ\text{C}$
Measuring Conditions: I_C at $I_F = 5 \text{ mA}$, $V_{CE} = 5 \text{ V}$, $T_A = 25^\circ\text{C}$



9. RELATIVE CURRENT TRANSFER RATIO VS OPERATING TIME