

IS654A
IS655A



**3mm DIA. MATCHED INFRARED
EMITTER DETECTOR PAIR
PHOTOTRANSISTOR OUTPUT**

DESCRIPTION

The IS654A (Gallium Arsenide Emitting Diode) and the IS655A (NPN Silicon Photo Transistor) are a mechanically and spectrally matched emitter detector end looking pair.

FEATURES

- T-1 standard 3mm DIA.
- Detector has dark plastic package for visible light cut out
- LED has high output, Radiant Intensity :-
 $I_E = 2\text{mW/sr min. at } I_F = 20\text{mA}$
- All electrical parameters are 100% tested

APPLICATIONS

- Floppy disk drives
- Infrared applied systems
- VCRs, Video camera
- Optoelectronic switches

**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

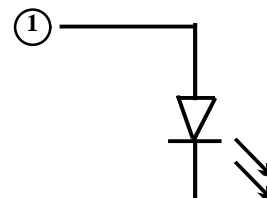
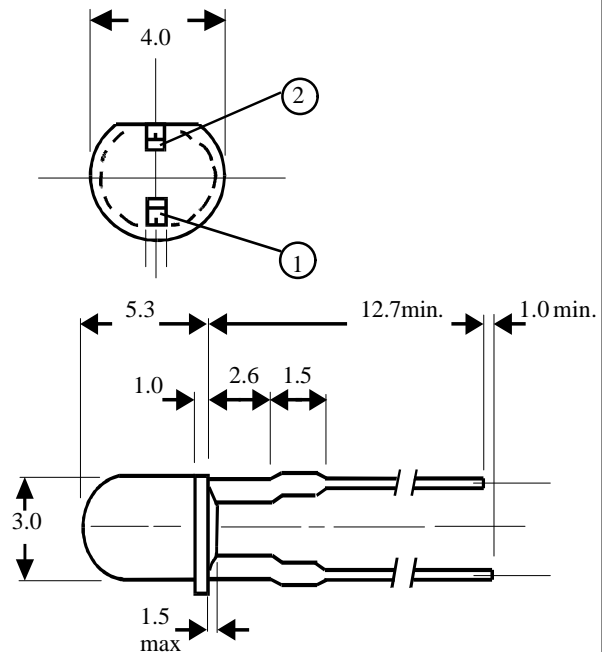
INPUT DIODE

Forward Current ——— 60mA
Reverse Voltage ——— 5V
Power Dissipation ——— 90mW

OUTPUT TRANSISTOR

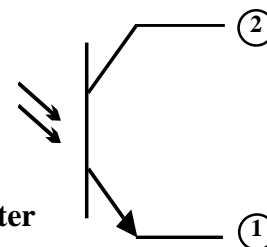
Collector-emitter Voltage BV_{CEO} ——— 30V
Emitter-collector Voltage BV_{ECO} ——— 5V
Collector Current I_C ——— 20mA
Power Dissipation ——— 50mW

Dimensions in mm



IS654A

- ① - Anode
② - Cathode



IS655A

- ① - Emitter
② - Collector

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ISOCOM INC

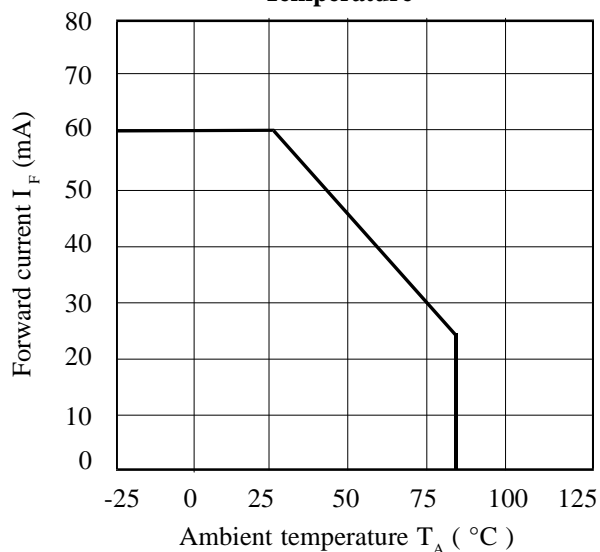
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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

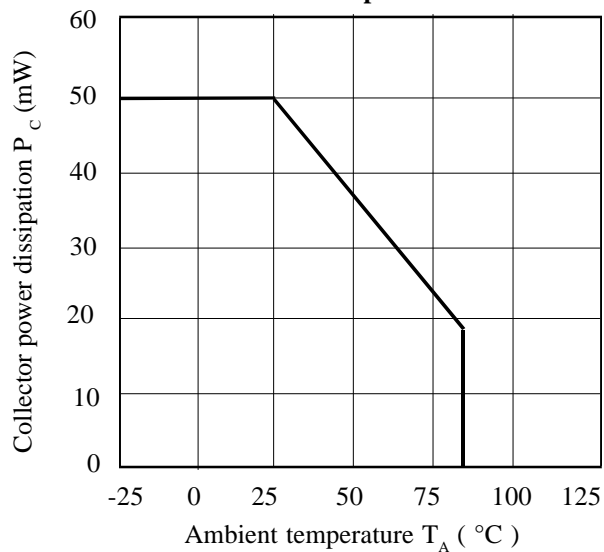
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
IS654A Emitter	Forward Voltage (V_F)		1.2	1.6	V	$I_F = 20\text{mA}$
	Reverse Current (I_R)			100	μA	$V_R = 5\text{V}$
	Radiant Flux (I_E)	1.5			mW/sr	$I_F = 40\text{mA}$
	Peak Emission Wavelength		940		nm	$I_F = 40\text{mA}$
	Spectrum Radiation Bandwidth		50		nm	$I_F = 40\text{mA}$
	Beam Emission Angle		± 20		deg.	
IS655A Detector	Collector-emitter Breakdown (BV_{CEO}) (Note 1)	30			V	$I_C = 1\text{mA}$ $E_e = 0\text{mW/cm}^2$
	Emitter-collector Breakdown (BV_{ECO})	5			V	$I_E = 100\mu\text{A}$ $E_e = 0\text{mW/cm}^2$
	Collector-emitter Dark Current (I_{CEO})			100	nA	$V_{CE} = 10\text{V}$ $E_e = 0\text{mW/cm}^2$
	On-State Collector Current I_C (ON)	1			mA	$5\text{V } V_{CE}$ $E_e = 1\text{mW/cm}^2$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	$I_C = 0.5\text{mA}$ $E_e = 0.5\text{mW/cm}^2$
	Rise Time t_r Fall Time t_f		10 8	40 35	μs μs	$V_{CC} = 20\text{V}, I_C = 1\text{mA},$ $R_L = 1\text{k}\Omega$
	Peak Sensitivity Wavelength Beam Acceptance Angle		940 ± 20		nm deg.	$I_F = 40\text{mA}$

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

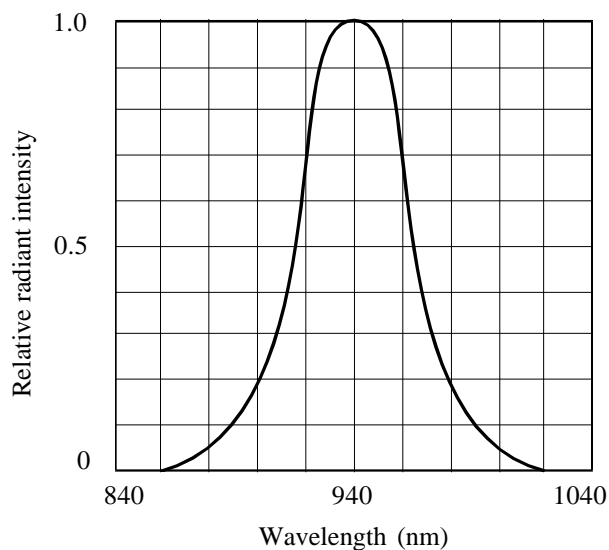
Forward Current vs. Ambient Temperature



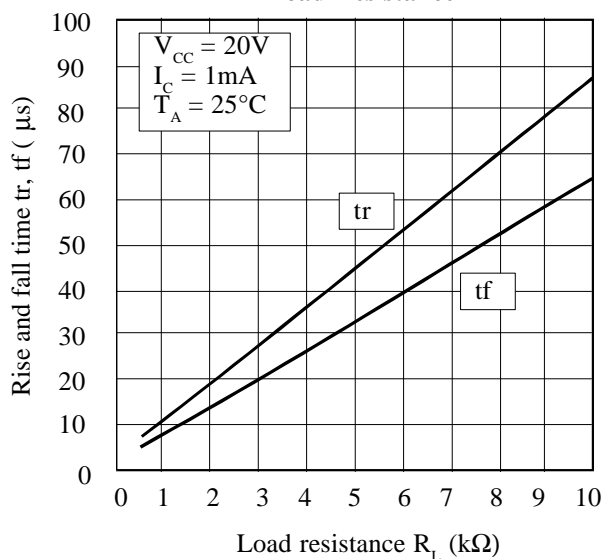
Collector Power Dissipation vs. Ambient Temperature



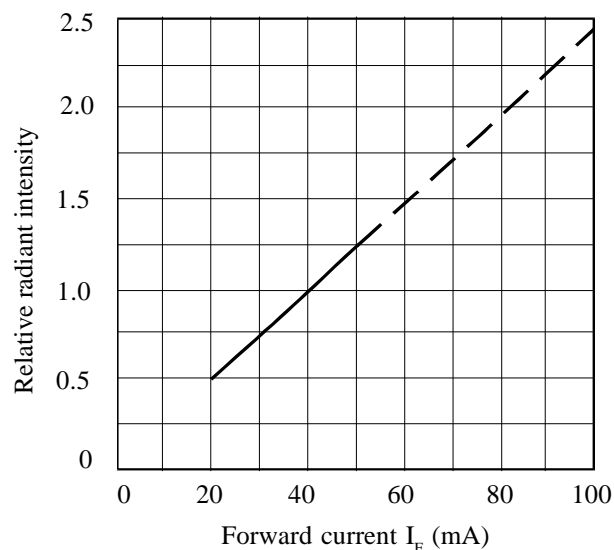
Spectral Distribution



Rise and Fall Time vs. Load Resistance



Relative Radiant Intensity vs. Forward Current



Relative Collector Current vs. Irradiance

