Hutton Close, Crowther Ind Est, Washington, Tyne & Wear NE38 0AH, England
mailto:sales@isocom.uk.com - Tel: +44 (0)191 4166546 - Fax: +44 (0)191 4155055

MST8, MST81
PHOTON COUPLED INTERRUPTER

Circuit

Description

The MST8 Series each consist of a Gallium Arsenide infrared emitting diode and a silicon phototransistor housed in a plastic package.
All electrical parameters are 100% tested. Specifications are guaranteed to a cumulative 0.65% AQL.

Applications

Printers, Tracker Ball, Mouse, Chart Recorders, Industrial Applications, Coin Machines.

Absolute Maximum Ratings (Ta=25°C)

Storage Temperature:	-55°C to +100°C
Operating Temperature:	-55°C to +100°C
Lead Soldering:	260°C for 5s, 1.6mm from case

Input Diode

Forward DC Current:	60mA
Reverse DC Voltage:	6V
Peak forward current:	3A (1µ p.w. 300pps)
Power Dissipation:	100mW
Derate Linearly:	1.33mW/°C above 25°C

Output Transistor

Collector-emitter voltage V_{CEO}:	30V
Emitter-Collector Voltage V_{ECO}:	6V
Collector Current L_C:	100mA
Power Dissipation:	150mW
Derate Linearly:	2.0mW/°C above 25°C

Electro-Optical Characteristics (Ta=25°C)

INPUT	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
C_L	Capacitance	V=0, f=1MHz		30		pF
V_F	Forward voltage	I_F=60mA			1.7	V
I_R	Reverse current	V_R=5V			100	nA
OUTPUT						
$V_{(BR)R}$	Reverse Breakdown Voltage	I_R=10µA	6			V
$V_{(BR)CEO}$	Breakdown Voltage	I_C=1mA	30			V
$V_{(BR)ECO}$	Breakdown Voltage	I_E=100µA	6			V
I_{CEO}	Collector Dark Current	V_{CE}=25V			100	nA
C_{CE}	Capacitance	V_{CE}=5V, f=1MHz		3.3	5	pF

COUPLED ELECTRICAL CHARACTERISTICS (25°C; note 1)

SYMBOL	CONDITIONS	MIN		TYP	MAX	UNIT
		MST8	MST81			
$I_{CE(ON)}$	I_F=5mA, V_{CE}=5V	0.15	0.3			mA
	I_F=20mA, V_{CE}=5V	1	2			mA
	I_F=30mA, V_{CE}=5V	1.9	3			mA
$V_{CE(SAT)}$	I_F=(30; MST81=20) mA, I_C=1.8mA				0.4	V
t_{ON}	V_{CC}=5V, I_F=30mA, R_L=2.5kohm			8		µs
t_{OFF}	V_{CC}=5V, I_F=30mA, R_L=2.5kohm			50		µs

Notes

1. Stray irradiation can alter values of characteristics. Adequate shielding should be provided.

Isocom takes great effort to ensure accurate data, but regrettably cannot be held liable for any error on its website. Visit File Lists to confirm old printouts are up-to-date.

Contents