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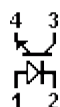
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MST8, MST81

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 I_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.

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