

# SLOTTED SWITCH

## MTSS8040 INFRARED LED+PHOTO TRANSISTOR

T: 41-73

### APPLICATIONS

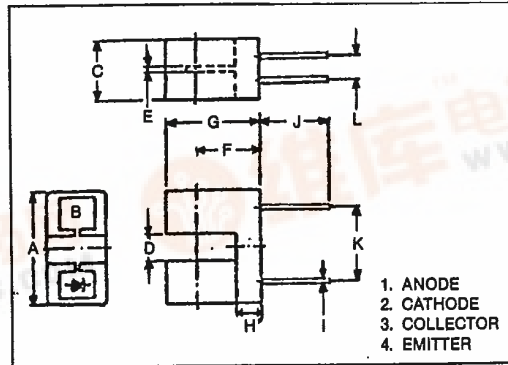
- OPTICAL SWITCH
- SHAFT POSITION AND VELOCITY SENSOR

### FEATURES

- Both chips face each other across a 0.118 inch air gap.
- Small slit width 0.020 inch.
- Fits standard dual in-line package socket.
- No contact switching, therefore high reliability.
- Plastic case.
- Transistor detector offers faster switching speeds than darlington detectors.

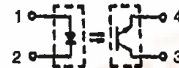
### MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
A	Forward Current	I <sub>F</sub>	50 mA
	Reverse Voltage	V <sub>R</sub>	5 V
	Collector-Emitter Voltage	V <sub>CEO</sub>	35 V
B	Emitter-Collector Voltage	V <sub>ECO</sub>	5 V
	Collector Power Dissipation	P <sub>C</sub>	75 mW
C	Collector Current	I <sub>C</sub>	50 mA
	Operating Temperature Range	T <sub>opr</sub>	-25 ~ 85 °C
	Storage Temperature Range	T <sub>stg</sub>	-40 ~ 100 °C



SYMBOL	INCHES	MM
A	0.512 ± 0.008	13.0 ± 0.2
B	0.020	0.5
C	0.244	6.2
D	0.118 ± 0.008	3.0 ± 0.2
E	0.020 ± 0.004	0.5 ± 0.1
F	0.270 ± 0.012	6.85 ± 0.3
G	0.394	10.0
H	0.100	2.5
I	0.018	0.45
J	0.709	18 MIN
K	0.300	7.62
L	0.100	2.54

### PIN CONFIGURATIONS (TOP VIEW)



### OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

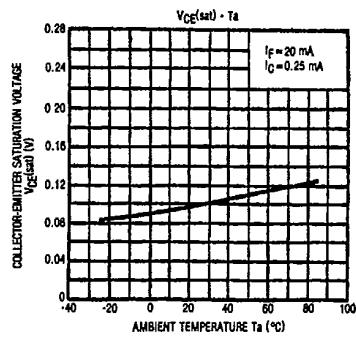
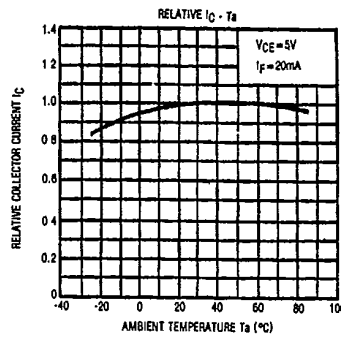
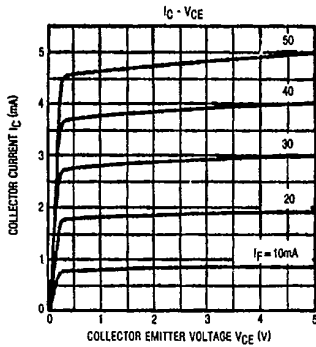
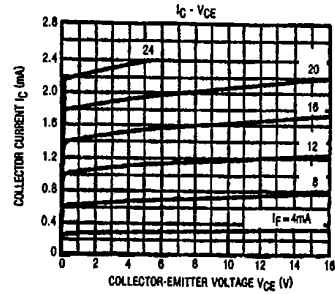
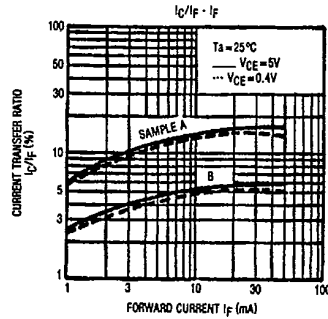
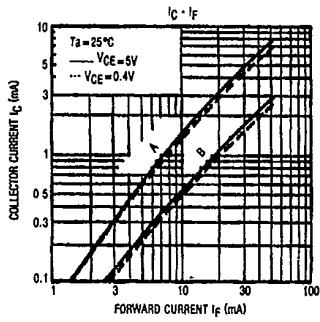
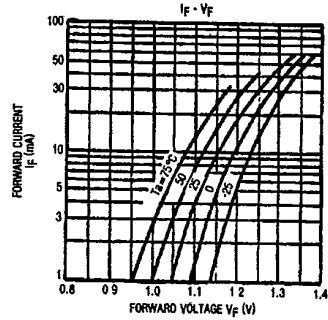
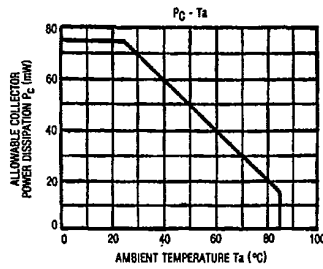
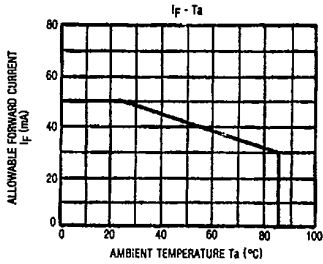
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
A	Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA	1.00	1.15	1.30	V
	Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 5V	—	—	10	μA
	Capacitance	C <sub>T</sub>	V = 0, f = 1MHz	—	30	—	pF
B	Dark Current	I <sub>D</sub> (I <sub>CEO</sub> )	V <sub>CE</sub> = 24V, I <sub>F</sub> = 0	—	5	100	nA
	Capacitance	C <sub>T</sub>	V = 0, f = 1MHz	—	13	—	pF
C	Current Transfer Ratio	I <sub>C</sub> /I <sub>F</sub>	V <sub>CE</sub> = 5V, I <sub>F</sub> = 20mA	2.5	10	—	%
	Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>F</sub> = 20mA, I <sub>C</sub> = 25mA	—	0.1	0.4	V
	Rise Time	t <sub>r</sub>	V <sub>CC</sub> = 5V, I <sub>C</sub> = 2mA	—	6	—	μs
	Fall Time	t <sub>f</sub>	R <sub>L</sub> = 100Ω	—	6	—	μs

A - EMITTER B - DETECTOR C - COUPLED



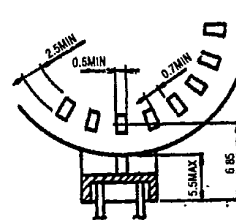
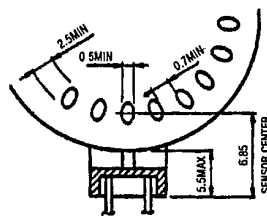
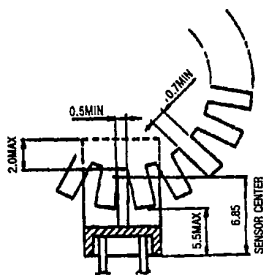
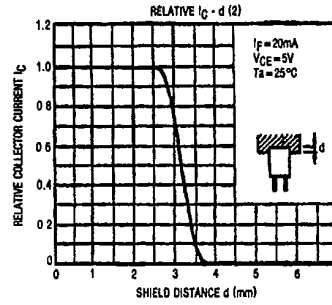
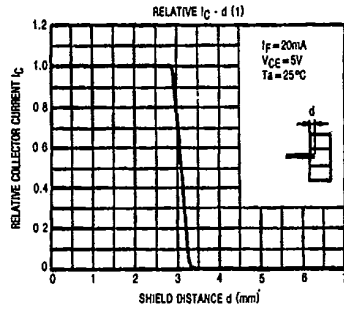
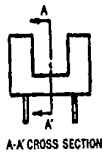
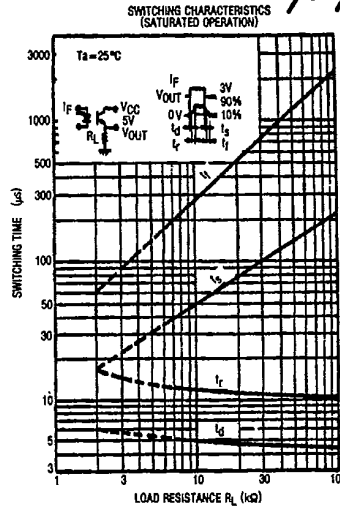
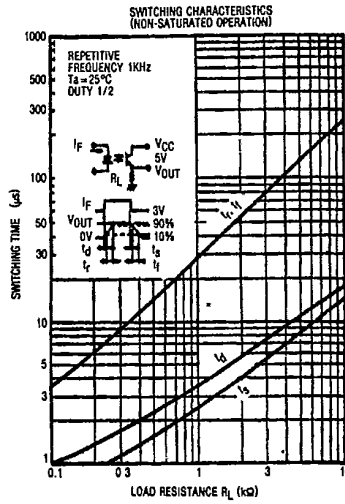
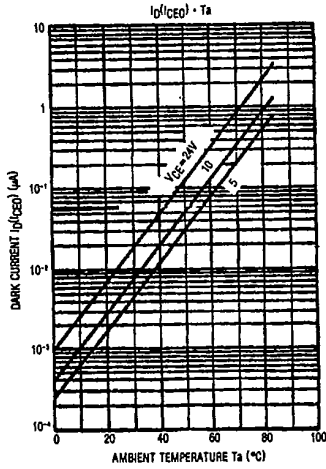
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(units in mm)