

SLOTTED SWITCH

MTSS8040 INFRARED LED+PHOTO TRANSISTOR

T-41-73

APPLICATIONS

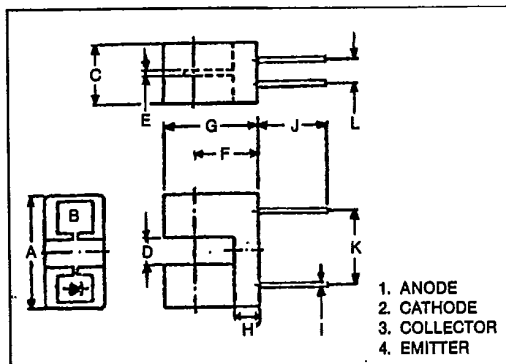
- OPTICAL SWITCH
- SHAFT POSITION AND VELOCITY SENSOR

FEATURES

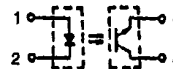
- Both chips face each other across a 0.118 inch air gap.
- Small slit width 0.020 inch.
- Fits standard dual in-line package socket.
- No contact switching, therefore high reliability.
- Plastic case.
- Transistor detector offers faster switching speeds than darlington detectors.

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

	CHARACTERISTIC	SYMBOL	RATING	UNIT
A	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	5	V
	Collector-Emitter Voltage	V_{CEO}	35	V
B	Emitter-Collector Voltage	V_{ECO}	5	V
	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	50	mA
C	Operating Temperature Range	T_{opr}	$-25 \sim 85$	$^\circ\text{C}$
	Storage Temperature Range	T_{stg}	$-40 \sim 100$	$^\circ\text{C}$



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)

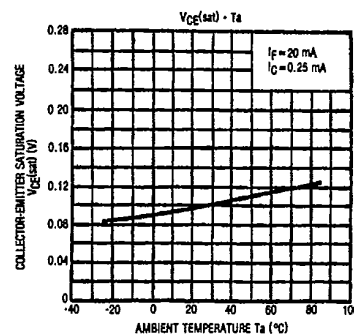
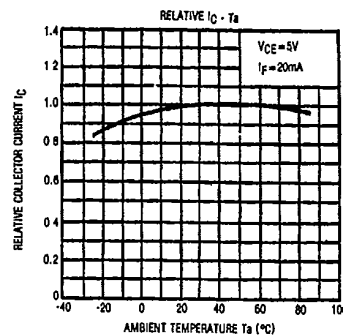
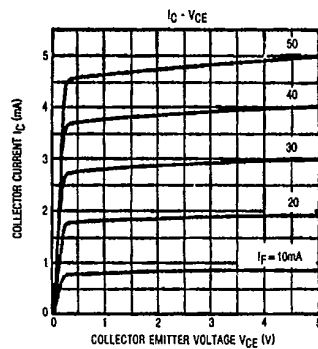
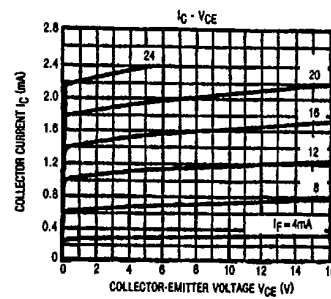
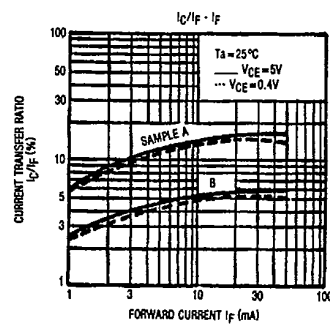
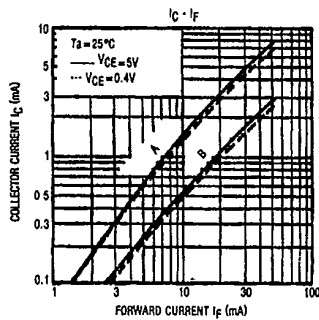
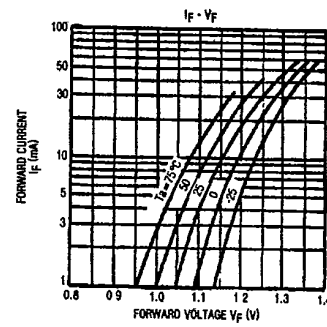
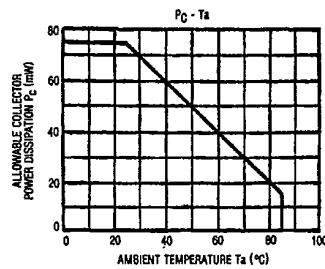
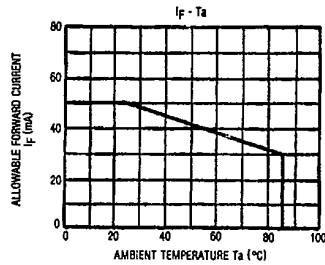
OPTO-ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

	CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
A	Forward Voltage	V_F	$I_F = 10\text{mA}$	1.00	1.15	1.30	V
	Reverse Current	I_R	$V_R = 5\text{V}$	—	—	10	μA
	Capacitance	C_T	$V = 0, f = 1\text{MHz}$	—	30	—	pF
B	Dark Current	$I_D(I_{CEO})$	$V_{CE} = 24\text{V}, I_F = 0$	—	5	100	nA
	Capacitance	C_T	$V = 0, f = 1\text{MHz}$	—	13	—	pF
	Current Transfer Ratio	I_C/I_F	$V_{CE} = 5\text{V}, I_F = 20\text{mA}$	2.5	10	—	%
C	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_F = 20\text{mA}, I_C = 25\text{mA}$	—	0.1	0.4	V
	Rise Time	t_r	$V_{CC} = 5\text{V}, I_C = 2\text{mA}$	—	6	—	μs
	Fall Time	t_f	$R_L = 100\Omega$	—	6	—	μs

A - EMITTER B - DETECTOR C - COUPLED

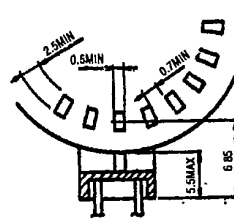
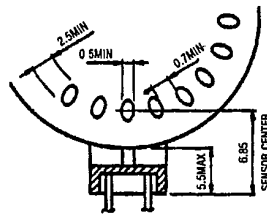
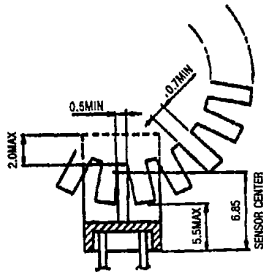
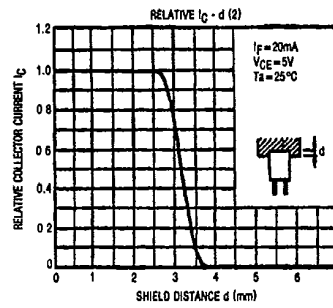
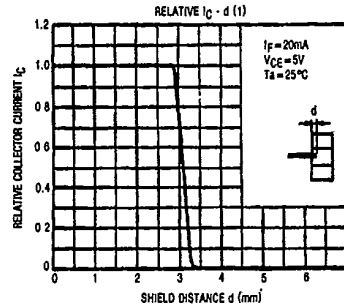
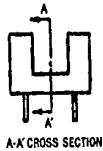
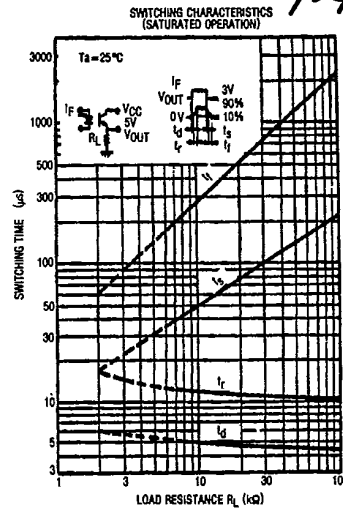
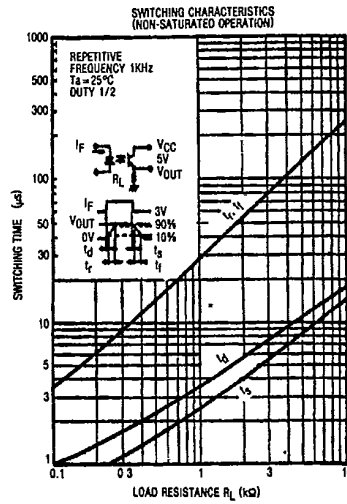
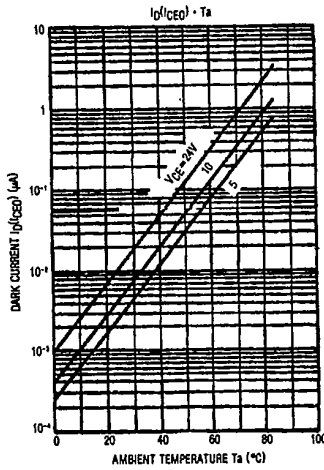
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(units in mm)