

REFLECTIVE SWITCH

T-41-73

MTRS9040 INFRARED LED & PHOTO TRANSISTOR

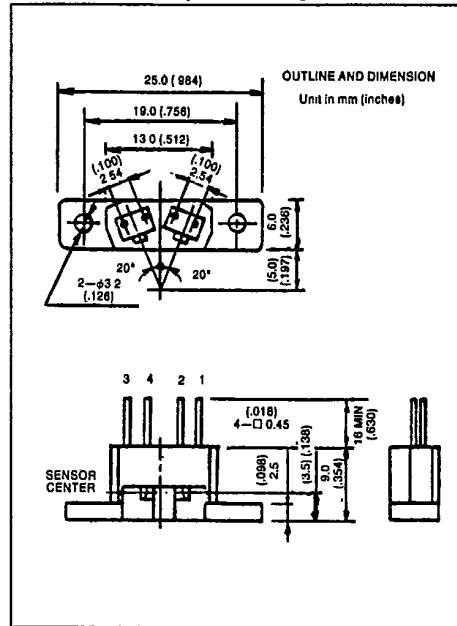
APPLICATIONS

HIGH SENSITIVE OPTICALLY REFLECTIVE SENSOR

- OPTICAL SWITCH
- TAPE EDGE SENSOR
- COPIER PAPER SENSOR

FEATURES

- High Sensitivity.
- Non Sensitivity for Visible Light.

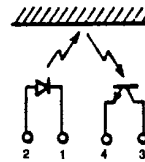


MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I_F	50	mA
	Pulse Forward Current (Note 1)	I_{FP}	600	mA
	Reverse Voltage	V_R	5	V
DETECTOR	Collector-Emitter Voltage	V_{CEO}	30	V
	Emitter-Collector Voltage	V_{ECO}	5	V
	Collector Current	I_C	50	mA
	Collector Power Dissipation	P_C	75	mW
Operating Temperature Range		T_{opr}	-25 ~ 85	°C
Storage Temperature Range		T_{stg}	-40 ~ 100	°C

Note 1: Pulse width $\leq 100\mu s$, Repetitive frequency = 100Hz.

PIN CONFIGURATIONS



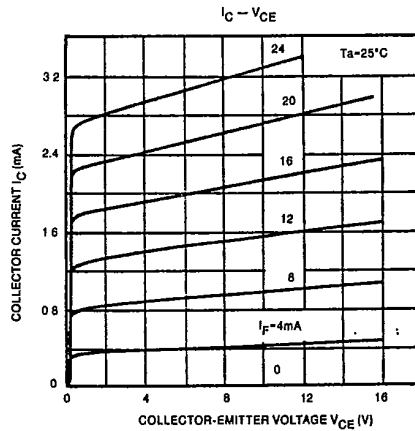
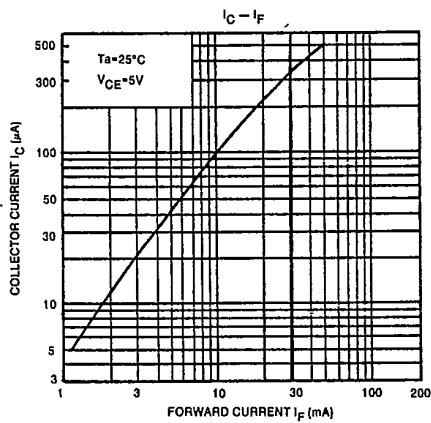
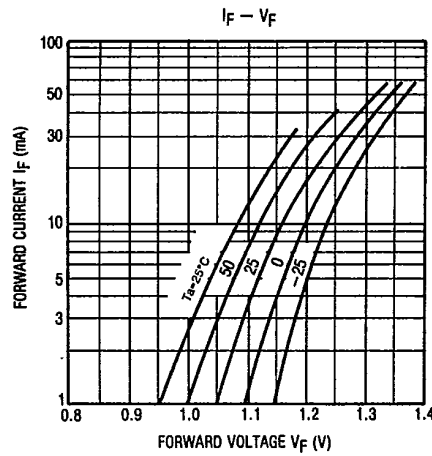
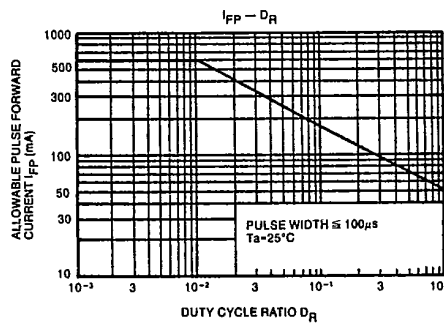
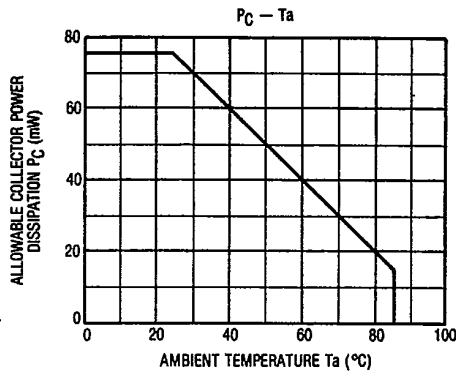
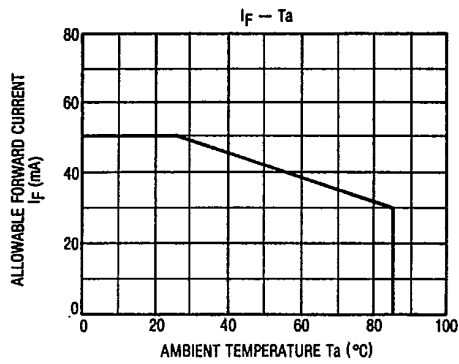
1. CATHODE
2. ANODE
3. COLLECTOR
4. EMITTER

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V_F	$I_F=10mA$	—	1.15	1.30	V
	Reverse Current	I_R	$V_R=5V$	—	—	10	μA
	Terminal Between Capacitance	C_T	$V=0, f=1MHz$	—	30	—	pF
COUP.	Dark Current	$I_D(I_{CEO})$	$V_{CE}=24V, I_F=0$	—	5	100	nA
DET.	Collector Current (Note 2)	I_C	$V_{CE}=5V, I_F=20mA$	70	200	—	μA
	Rise Time, Fall Time	t_r, t_f	$V_{CC}=5V, I_C=2mA, R_L=100\Omega$	—	6	—	μs

Note 2: Reflective Efficiency 90% White Paper, Detection Distance 5mm.

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