

PHOTO TRANSISTOR

T-41-61

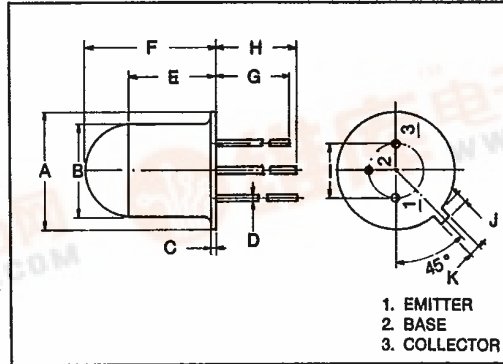
MTD6040 SILICON NPN EPITAXIAL PLANAR SILICON PHOTO TRANSISTOR FOR PHOTO SENSOR

APPLICATIONS

- OPTICAL SWITCH
- TAPE, CARD READERS
- VELOCITY SENSOR

FEATURES

- High sensitivity: $I_L = 250\mu A$ (Typ.).
- Spectrally and mechanically matched with IR emitter MTE1010A.
- Glass-to-metal-seal header.
- Base contact externally available.
- Saturation level directly compatible with most TTL.



1. EMITTER
2. BASE
3. COLLECTOR

SYMBOL	INCHES	MM
A	0.228	5.8 MAX
B	0.185 ± 0.004	4.7 ± 0.1
C	0.020	0.5
D	0.018	0.45
E	0.177	4.5
F	0.256 ± 0.020	6.5 ± 0.5
G	0.500 MIN	12.7 MIN
H	0.539 MIN	13.7 MIN
I	0.100	2.54
J	0.039	1.0
K	0.039	1.0

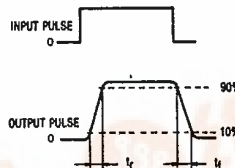
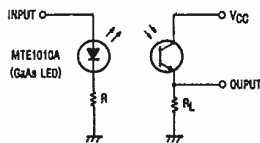
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CEO}	40	V
Collector-Base Voltage	V_{CBO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Emitter-Collector Voltage	V_{ECO}	5	V
Collector Current	$I_C(I_L)$	50	mA
Collector Power Dissipation	P_C	150	mW
Collector Power Dissipation Derating	$\Delta P_C/^\circ C$	-1.2	mW/°C
Operating Temperature Range	T_{opr}	-40 ~ 125	°C
Storage Temperature Range	T_{stg}	-55 ~ 150	°C

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Dark Current	$I_D(I_{CEO})$	$V_{CE} = 30V, E = 0$	—	10	200	nA
Light Current	I_L	$V_{CE} = 3V, E = 0.1mW/cm^2$	60	250	—	μA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 30\mu A, E = 0.1mW/cm^2$	—	0.25	0.4	V
Switching Time	Rise Time	$V_{CC} = 5V, I_C = 10mA, R_L = 100\Omega$ (Fig. 1)	—	2	—	μs
	Fall Time		—	2	—	μs

Fig. 1 SWITCHING TIME TEST CIRCUIT



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