

# PHOTO DARLINGTON

**MTD6170**  
**SILICON NPN**  
**EPITAXIAL PLANAR**  
**SILICON PHOTO DARLINGTON**  
**FOR PHOTO SENSOR**

## APPLICATIONS

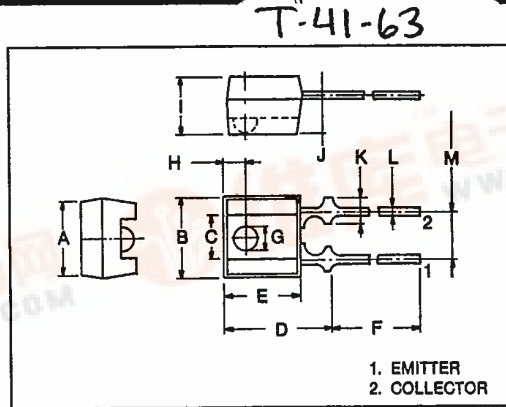
- OPTICAL SWITCH
- INTERRUPTER
- TAPE, CARD READERS

## FEATURES

- High sensitivity:  $I_L = 1.4\text{mA}$  (Typ.)
- Spectrally and mechanically matched with IR emitter MTE1070A.
- Saturation level is compatible with MOS-IC.
- Suitable for photo interrupter assembly.
- Housing material is visible light cut one.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	$V_{CE0}$	30	V
Emitter-Collector Voltage	$V_{ECO}$	5	V
Collector Current	$I_C(I_L)$	50	mA
Collector Power Dissipation	$P_C$	75	mW
Collector Power Dissipation Derating	$\Delta P_C/^\circ\text{C}$	-1.0	mW/°C
Operating Temperature Range	$T_{opr}$	-25 ~ 85	°C
Storage Temperature Range	$T_{stg}$	-40 ~ 100	°C



SYMBOL	INCHES	MM
A	0.157	4.0
B	$0.173 \pm 0.010$	$4.4 \pm 0.25$
C	$0.094 \pm 0.012$	$2.4 \pm 0.3$
D	0.226	5.75
E	0.159	4.05
F	0.945	$24 \pm 1$
G	0.039	1.5
H	0.049	1.25
J	$0.118 \pm 0.010$	$3 \pm 0.25$
K	0.079	2.0
L	0.018	.45
M	$0.100 \pm 0.12$	$2.54 \pm 0.3$

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Dark Current	$I_D(I_{CEO})$	$V_{CE} = 16\text{V}, E = 0$	—	30	250	nA
Light Current	$I_L$	$V_{CE} = 3\text{V}, E = 0.1\text{mW/cm}^2$ (Note)	0.4	1.4	—	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 0.2\text{mA}, E = 0.1\text{mW/cm}^2$ (Note)	—	0.9	1.2	V
Switching Time	Rise Time	$V_{CC} = 5\text{V}, I_C = 10\text{mA}, R_L = 100\Omega$	—	200	—	$\mu\text{s}$
	Fall Time		—	100	—	$\mu\text{s}$

Note: Color temperature=2870°K Standard Tungsten Lamp.

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