

# POWER COUPLER

## MT5460G INFRARED LED+ PHOTO THYRISTOR

### APPLICATIONS

- CONTROL 1A (RMS) of 120V<sub>AC</sub> LINE
- MOTOR CONTROLS
- LIGHT CONTROLS
- COPIER
- TEMPERATURE CONTROLS
- SSR

### FEATURES

- Trigger Led current:  $I_{FT} = 10\text{mA}$  (Max.) ( $R_{GK} = 15\text{k}\Omega$ ).
- R.M.S. on-state current:  $I_T$  (RMS) = 1A (single phase full wave, no heat sink,  $T_a = 40^\circ\text{C}$ ).
- Repetitive peak on-state voltage:  $V_{DRM} = 400\text{V}$ .
- High isolation voltage:  $BV_S = 2500\text{V AC/1 min}$ .
- 9-lead DIP package.
- UL recognized.

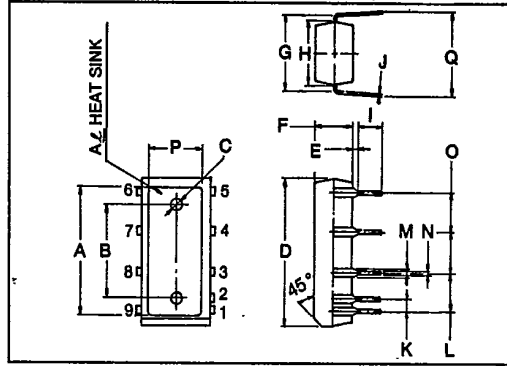
### MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	$I_F$	50	mA
Forward Current Derating ( $T_a \geq 25^\circ\text{C}$ )	$\Delta I_F / ^\circ\text{C}$	-0.55	A/ $^\circ\text{C}$
Reverse Voltage	$V_R$	5	V
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	$V_{DRM}$ and $V_{RRM}$	400	V
R.M.S. On-State Current (Single Phase Full Wave $T_a = 40^\circ\text{C}$ )	$I_T(\text{RMS})$	1 (No Heat Sink)	A
On-State Current Derating (Single Phase Full Wave $T_a = 40^\circ\text{C}$ )	$\Delta I_T / ^\circ\text{C}$	-0.04	A/ $^\circ\text{C}$
Peak One Cycle Surge On-State Current	$I_{TSM}$	20	A
Operating Temperature Range	$T_{opr}$	-30 ~ 80	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 ~ 125	$^\circ\text{C}$
Isolation Voltage (Note)	$BV_S$	2500	V

Note: AC/1 min. R.H.=40~80%.

A - LED B - DETECTOR

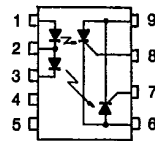
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1. ANODE
2. CATHODE, ANODE
3. CATHODE
- 4,5. N.C.
6. CATHODE, ANODE
- 7,8. GATE
9. ANODE, CATHODE

SYMBOL	INCHES	MM
A	0.992 MAX	25.2 MAX
B	0.701 ± 0.006	17.8 ± 0.15
C	0.079 - 0.110 ± 0.004	2 - 2.8 ± 0.10
D	1.161 MAX	29.5 MAX
E	0.020 MIN	0.5 MIN
F	0.236 ± 0.012	6 ± 0.3
G	0.600 ± 0.010	15.24 ± 0.25
H	0.520	13.2
I	0.098 MIN	2.5 MIN
J	0.016 ± 0.004	0.4 ± 0.10
K	0.100 ± 0.010	2.54 ± 0.25
L	0.300 ± 0.010	7.62 ± 0.25
M	0.059 ± 0.006	1.5 ± 0.15
N	0.020 ± 0.006	0.5 ± 0.15
O	0.300 ± 0.010	7.62 ± 0.25
P	0.394 MAX	10 MAX
Q	0.618 ~ 0.776	15.7 ~ 19.7

PIN CONFIGURATIONS (TOP VIEW)



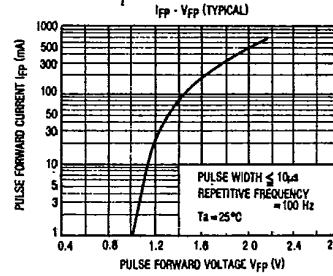
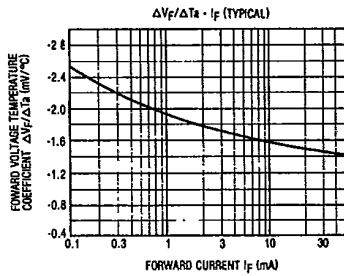
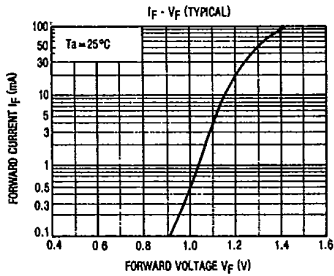
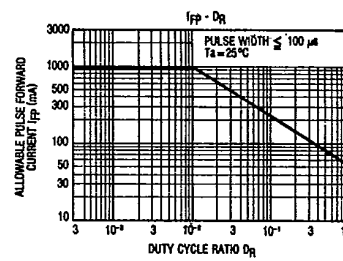
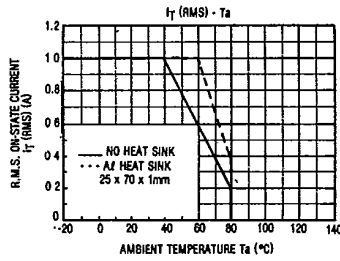
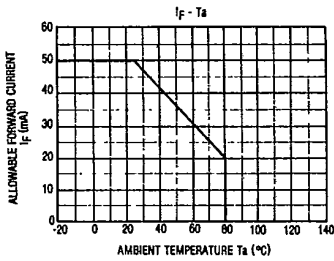
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## OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

	CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
A	Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 30mA (1 LED)	1.10	1.24	1.40	V
	Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 5V	—	—	10	μA
B	Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	V <sub>ORM</sub> and V <sub>RRM</sub>	V <sub>DRM</sub> = Rated, T <sub>2</sub> = 80°C R <sub>GK</sub> = 15kΩ	—	—	100	μA
	Peak On-State Voltage	V <sub>TM</sub>	I <sub>TM</sub> = 2A, I <sub>F</sub> = 15mA	—	—	1.6	V
	Holding Current	I <sub>H</sub>	R <sub>L</sub> = 100Ω, R <sub>GK</sub> = 15kΩ	—	0.5	—	mA
	Critical Rate of Rise of Off-State Voltage	dv/dt	V <sub>DRM</sub> = 2/3 Rated, R <sub>GK</sub> = 15kΩ	5	—	—	V/μs
C	Trigger LED Current	I <sub>FT</sub>	V <sub>D</sub> = 6V, R <sub>L</sub> = 100Ω, R <sub>GK</sub> = 15kΩ	—	6	10	mA
	Isolation Resistance	R <sub>S</sub>	R.H. = 40 ~ 60%, V = 1kV	—	10 <sup>11</sup>	—	Ω

A - LED B - DETECTOR C - COUPLED



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