

# INFRARED LED

T-41-11

## MTE1090 GaAs INFRARED EMITTER

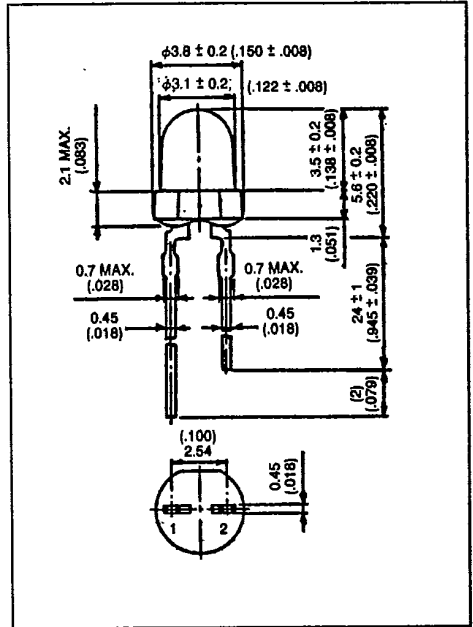
### APPLICATIONS

INFRARED LED FOR PHOTO SENSOR

- OPTICAL SWITCH
- TAPE, CARD READERS
- ENCODERS

### FEATURES

- Output Spectrally Compatible with Silicon Sensor MTD6150, MTD6160.
- Radiant Intensity:  $I_E=1.5\text{mW/sr}$  (Typ.)
- Viewing Angle:  $\theta=56^\circ$

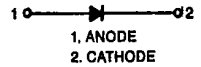


### MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	$I_F$	50	mA
Pulse Forward Current (Note 1)	$I_{FP}$	500	mA
Reverse Voltage	$V_R$	5	V
Forward Current Derating	$\Delta I_F/^\circ\text{C}$	-0.67	mA/°C
Operating Temperature Range	$T_{opr}$	-20 ~ 85	°C
Storage Temperature Range	$T_{stg}$	-20 ~ 100	°C

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

### PIN CONNECTION



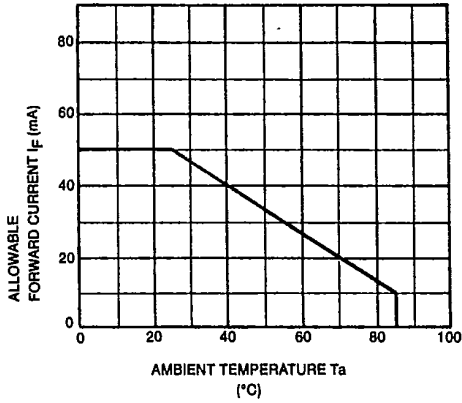
### OPTO-ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX.	UNIT
Forward Voltage	$V_F$	$I_F=10\text{mA}$	—	1.15	1.30	V
Reverse Current	$I_R$	$V_R=5\text{V}$	—	—	10	$\mu\text{A}$
Radiant Intensity	$I_E$	$I_F=10\text{mA}$	0.5	1.5	—	mW/sr
Capacitance	$C_T$	$V_R=0, f=1\text{MHz}$	—	20	—	pF
Peak Emission Wave Length	$\lambda_P$	$I_F=10\text{mA}$	—	940	—	nm
Spectral Line Half Width	$\Delta\lambda$	$I_F=10\text{mA}$	—	50	—	nm

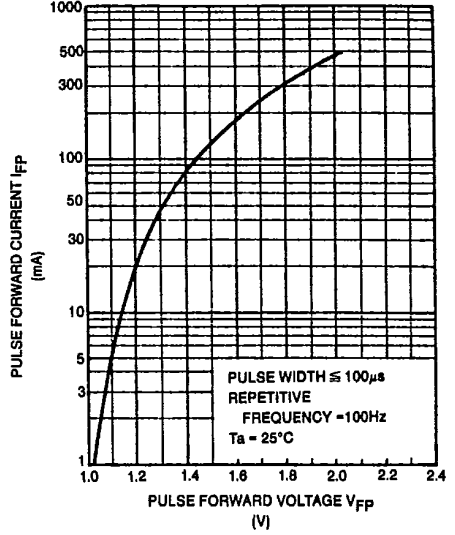
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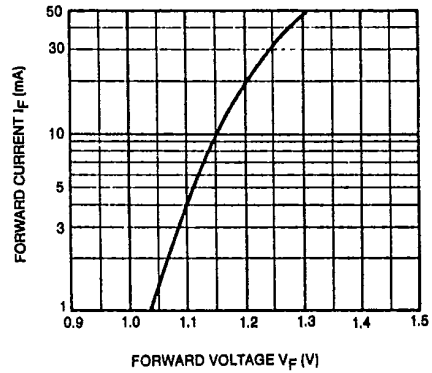
$I_F - T_a$



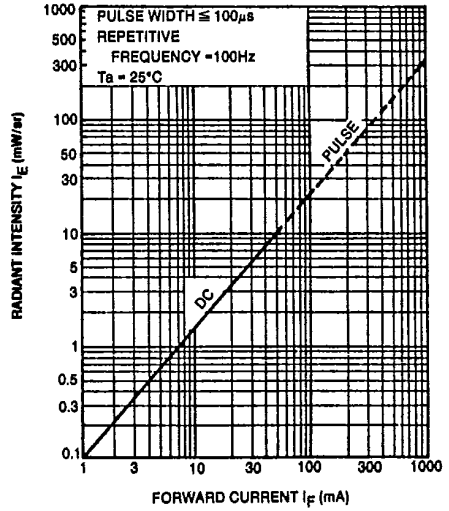
$I_{FP} - V_{FP}$



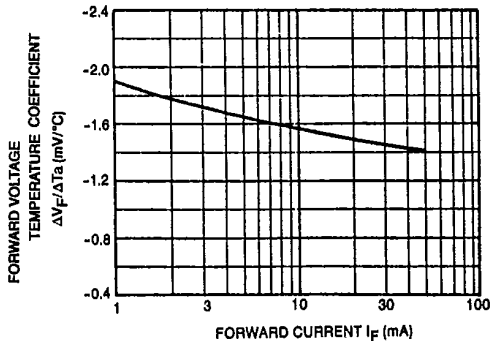
$I_F - V_F$



$I_E - I_F$



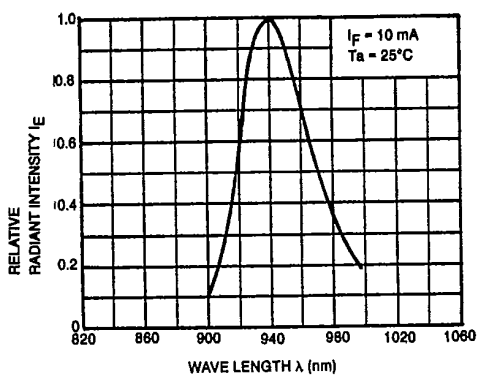
$\Delta V_F / \Delta T_a - I_F$



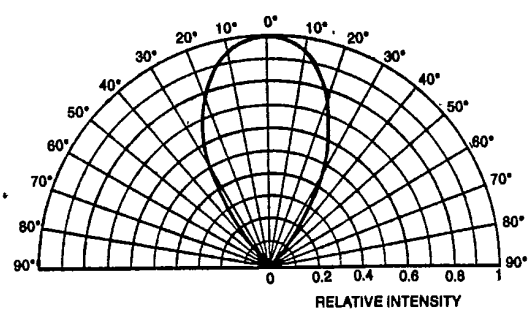
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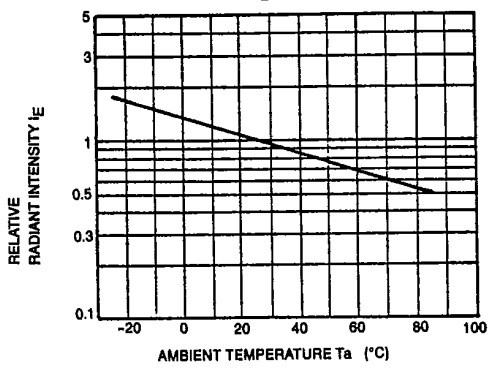
$I_E - \lambda$



RADIATION PATTERN ( $T_a = 25^\circ\text{C}$ )



$I_E - T_a$



$I_{FP} - P_W$

