



# Dioda nadawcza TEMT1288C 3mm THREE-FIVE SYSTEMS, INC.



## **Dane techniczne:**

Nazwa: TEMT1288C

Rodzaj fotoelementu: nadajnik IR

Montaż: przewlekany(THT)

Średnica: 3mm

Moc : 80mW

Prąd diody: 50mA

Napięcie diody: 1.3V

Długość fali: 880nm

Kąt świecenia: 20°

[www.podzespoly-elektroniczne.pl](http://www.podzespoly-elektroniczne.pl)

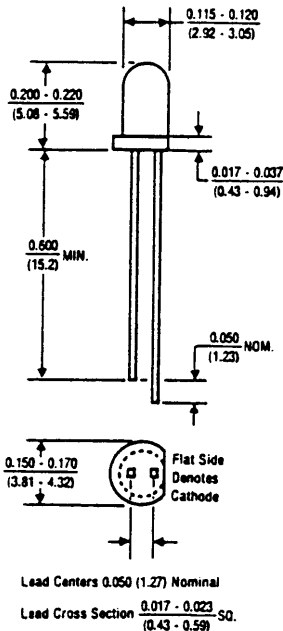


THREE-FIVE SYSTEMS, INC.

327-293

# HIGH OUTPUT INFRARED EMITTERS 880 nm—T1 PLASTIC PACKAGE TEMT1288 SERIES

## PACKAGE OUTLINE



DIMENSIONS:

INCHES  
(Millimeters)

## FEATURES

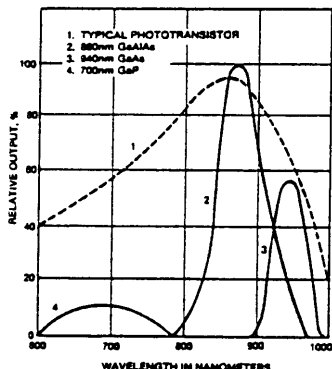
- GaAlAs heterostructure material. Emits at 880nm
- Super High Conversion Efficiency/Maximum power output
- 2x Total Radiant Power output of 940nm product
- Increased coupling efficiency to Silicon photo-transistors
- Standard T1 (3mm) plastic package for cost effective, commercial use
- 20° Beam Angle

## APPLICATIONS

- TV Remote controls
- Disk Drives
- Tape Drives
- Printers
- Optical Encoders
- Solid State Relays
- Photoelectric Controls
- Slotted Switches
- Reflective Switches
- Intrusion Alarms
- Smoke Detectors

## DESCRIPTION

The TEMT1288 series is Gallium Aluminum Arsenide high output infrared emitting diodes in T1 plastic packages. They emit non-coherent, infrared energy at 940nm and provide significantly improved coupling efficiency to silicon phototransistors. These devices are constructed with (LPE) solution grown diodes for the highest conversion efficiency and long, useful operating life span.



The 880nm wavelength significantly improves the coupling efficiency to typical phototransistors.

Spectral Matching Comparison

## TOTAL RADIANT OUTPUT POWER

Part Number	Minimum Output	Half Angle
TEMT1288A	1.0mW @ 20mA	20°
TEMT1288B	2.0mW @ 20mA	20°
TEMT1288C	3.0mW @ 20mA	20°
TEMT1288D	4.0mW @ 20mA	20°

## ABSOLUTE MAXIMUM RATINGS

Average Power Dissipation: 80mW  
 Derate Linearly from 25°C: -1.0mW/°C  
 Average Forward Current: 50mA  
 Reverse Voltage: 3.0V  
 Operating & Storage Temp.: -40 to +85°C  
 Soldering Time @ 260°C  
 1/16" From Case: 5 seconds  
 Peak Pulse Current  
 100µsec Pulse, 10pps: 0.3A



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Optoelectronics Group

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# HIGH OUTPUT INFRARED EMITTERS 880 nm—T1 PACKAGE

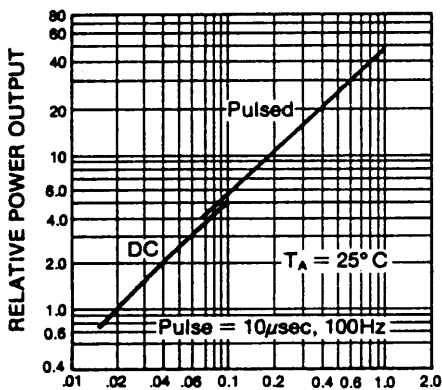
## TEMT1288 SERIES

### ELECTRO-OPTICAL CHARACTERISTICS

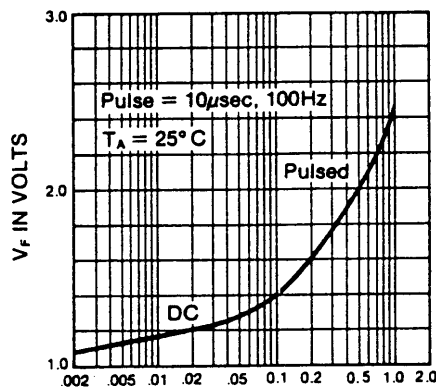
Symbol	Parameter	Conditions (T <sub>A</sub> = 25°C)	Min.	Typ.	Max.	Units
$\Delta P_O / \Delta T$	Temp. Coef. of Power Output	I <sub>F</sub> = 20mA		-0.53		%/°C
$\Delta V_F / \Delta T$	Temp. Coef. of Forward Voltage	I <sub>F</sub> = 20mA		-1.8		mV/°C
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> = 20mA		1.3	1.75	V
R <sub>d</sub>	Dynamic Resistance	I <sub>F</sub> = 20mA		1.5		Ω
$\theta_{1/2}$	Half Angle Between Half Radiant Intensity Points*			20		Deg.
$\lambda_{peak}$	Peak Wavelength	I <sub>F</sub> = 20mA		880		nm
$\Delta\lambda$	Line Halfwidth	I <sub>F</sub> = 20mA		80		nm
I <sub>R</sub>	Reverse Current	V <sub>R</sub> = -3.0V			10	μA
t <sub>r</sub>	Rise Time	I <sub>peak</sub> = 10mA		0.6		μsec
t <sub>f</sub>	Fall Time	I <sub>peak</sub> = 10mA		0.75		μsec

\*Typical off-axis angle at which the radiant intensity is half the axial radiant intensity.

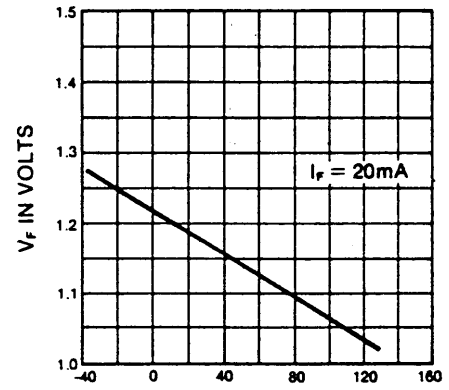
### TYPICAL CHARACTERISTICS



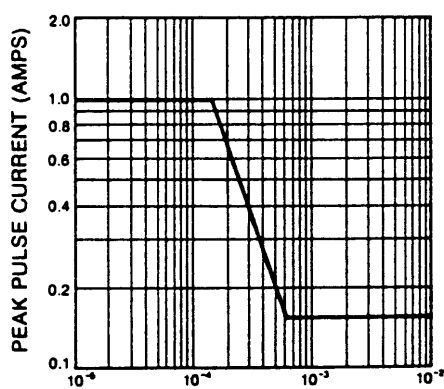
I<sub>F</sub> IN AMPS  
I<sub>F</sub> versus Normalized Power Out



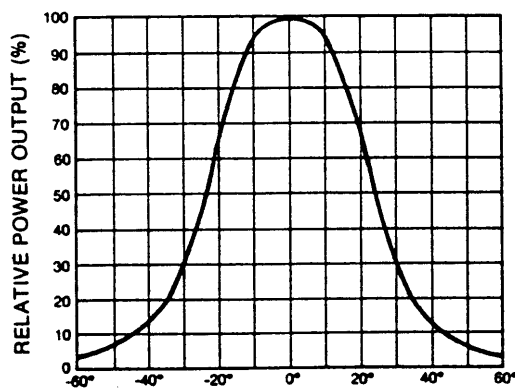
I<sub>F</sub> IN AMPS  
Forward Voltage versus I<sub>F</sub>



TEMPERATURE, °C  
Forward Voltage versus Temperature



PULSE WIDTH (SECONDS)  
Max. Peak Pulse Current versus Pulse Width



ANGULAR DISPLACEMENT FROM OPTICAL AXIS  
Typical Radiation Pattern

INFRARED DEVICES



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