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NTE3029A
Infrared–Emitting Diode

Description:

The NTE3029A 940nm LED is a multi–purpose device designed for use in numerous applications. This Gallium Arsenide device is manufactured to tight tolerances for maximum performance and long lifetime.

Features:

- Low Cost
- Low Degradation
- New Mold Technology Improves Performance under Variable Environmental Conditions
- New Lens Design offers Improved Optical Performance

Applications:

- Low Bit Rate Communication Systems
- Keyboards
- Coin Handlers
- Paper Handlers
- Touch Screens
- Shaft Encoders
- General Purpose Interruptive and Reflective Event Sensors

Absolute Maximum Ratings:

Reverse Breakdown Voltage, V_R 6V
Forward Current, I_F
  Continuous 100mA
  Peak Pulse 1A
Device Power Dissipation (T_A = +25°C, Note 2), P_D 100mW
  Derate Above 55°C . . . . . 2mW/°C
Ambient Operating Temperature Range, T_{opr} . . . . . –40° to +100°C
Storage Temperature Range, T_{stg} . . . . . –40° to +100°C
Lead Temperature (During Soldering, Note 3), T_L . . . . . +260°C

Note 1. The **NTE3029A** is a **discontinued** device and has been replaced by **NTE3029B**.

Note 2 Measured with device soldered into a typical printed circuit board.

Note 3 Maximum exposure time: 5sec. Minimum of 1/16 inch from the case. A heat sink should be applied in order to prevent the case temperature from exceeding +100°C.

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Leakage Current	I_R	V_R = 6V	–	0.05	100	µA
Forward Voltage	V_F	I_F = 50mA	–	1.3	1.5	V
Temperature Coefficient of Forward Voltage	ΔV_F		–	–1.6	–	mV/°C
Capacitance	C	V = 0V, f = 1MHz	–	24	50	pF

Optical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Emission Wavelength	λ_P	I_F = 50mA	930	940	950	nm
Spectral Half Power Wavelength			–	48	–	nm
Spectral Output Temperature Shift			–	0.3	–	nm/°C
Axial Power Output Intensity	P_O	I_F = 20mA, Note 4	50	150	–	µW/ sq cm
Intensity Per Unit Solid Angle	E_e	I_F = 20mA, Note 4	0.2	0.65	–	mW/Sr
Power Half–Angle	Ω		–	±20	–	°
Rise Time and Fall Time	t_r, t_f		–	1.0	–	µs

Note 4 Measured using a 11.28 mm diameter detector placed 21 mm away from the device under test.