

# MIDIUM POWER TRAVELING WAVE TUBE FOR COMMUNICATIONS LD7714

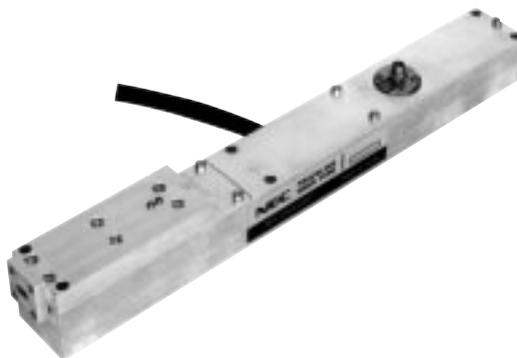
30 GHz, 40 W CW, Conduction Cooling, Mimimum Size

## GENERAL DESCRIPTION

The NEC LD7714 is a PPM-focused traveling wave tube designed for use as final amplifier in the earth-to-satellite communications transmitter, LMDS (Local Multipoint distribution service) and other advanced communication systems.

This is capable of delivering an output power of 40 W over the range of 27.5 to 30.0 GHz and provides a power gain of more than 40 dB at 40 W level.

Furthermore, it is of rugged and reliable design offering long-life service.



## FEATURES

- Lightweight, Compact and Efficient

The tube has a dual-depressed collectors and designed to operate at high efficiency across the power output range. It features state-of-the-art techniques to optimize size and efficiency.

- Low Distortion

Distortion is a very important factor in multiplex digital signals transmission. NEC has developed techniques for the correction of non-linear distortion and phase generated in a TWT. As a result, the TWT has an optimum performance across a broad power range and is ideally suited for multi-carrier tranmission systems.

- Simple Cooling System

The tube is conduction cooled, so that the cooling system is simplified.

- Rugged Construction

The power gain is designed to be rugged, therefore it is suitable for transportable systems.

- Long Life and High Stability

The tube employs an advanced impregnated cathode with a low operating temperature for long life.

- Micro-discharge Free

The tube is carefully designed to be free from microdischarge in the electron gun for long term operation, therefore it is suitable for digital communication service.

**For safe use of microwave tubes, refer to NEC document "Safety instructions to all personnel handling electron tubes" (ET0048EJ\*V\*UM00)**

The information in this document is subject to change without notice.

**GENERAL CHARACTERISTICS**

**ELECTRICAL**

Frequency .....	27.5 to 30.0 GHz
Output Power .....	40 W
Heater Voltage .....	6.3 V
Heater Current .....	0.82 A
Heater Surge Current .....	2.5 A
Type of Cathode .....	Indirectly heated, Impregnated
Cathode Warm-up Time .....	180 s

**MECHANICAL**

Dimensions .....	See Outline
Weight .....	700 g approx.
Focusing .....	Periodic Permanent Magnet
Mounting Position .....	Any
Electrical Connections .....	Flying Leads
RF Connections	
Input .....	Mates with UG-599/U Flange or K connector Female
Output .....	Mates with UG-599/U Flange
Cooling .....	Conduction

**ABSOLUTE RATINGS (Note 1, 2 and 3 )**

**ELECTRICAL**

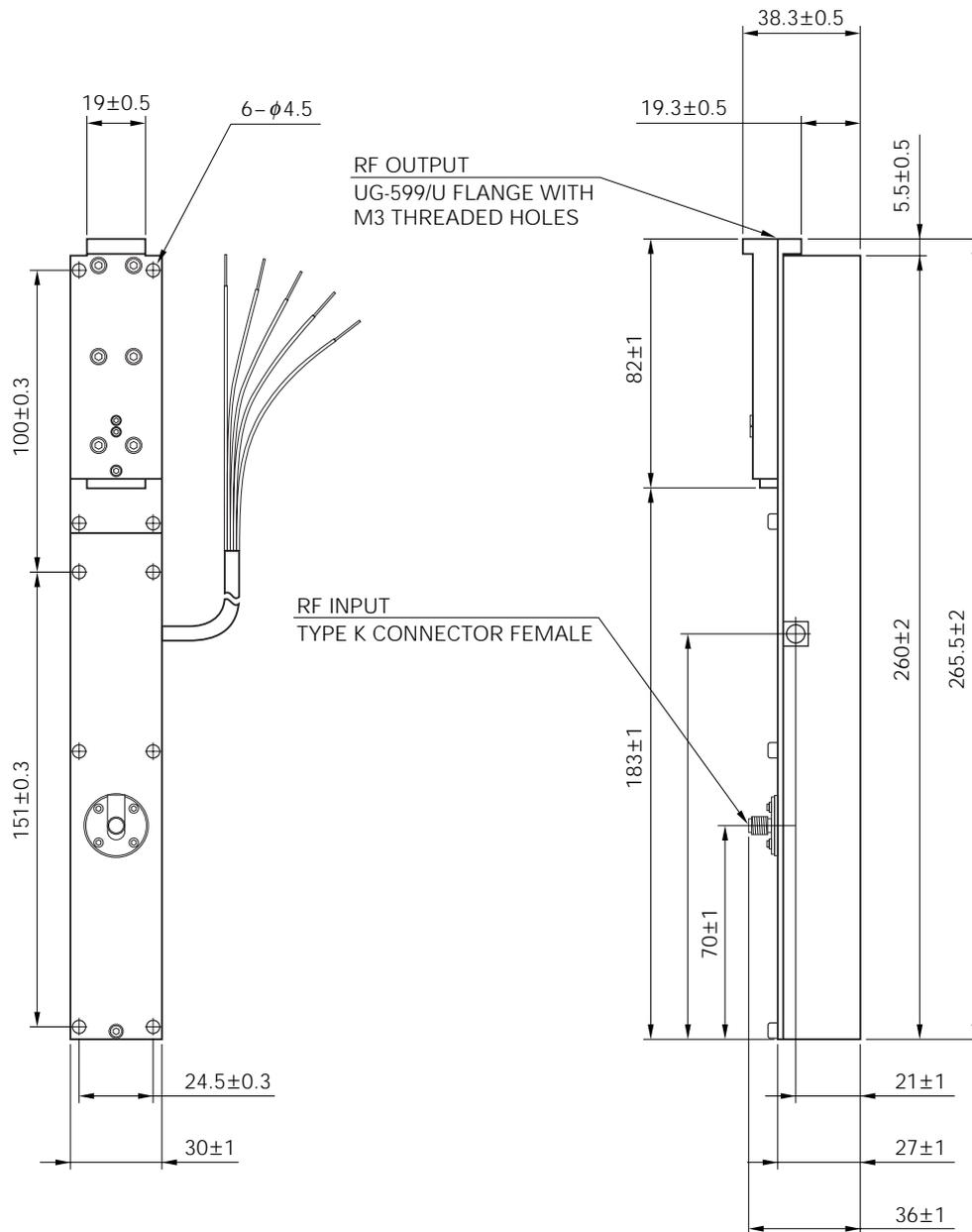
	Min.	Max.	Unit
Heater Voltage .....	6.0	6.6	V
Heater Surge Current .....	-	2.5	A
Heater Current .....	-	1.2	A
Heater Warm-up Time .....	180	-	s
Helix Voltage .....	7.8	8.5	kV
Helix Current .....	-	5.0	mA
Collector-1 Voltage .....	3.0	3.3	kV
Collector-1 Current .....	-	40	mA
Collector-2 Voltage .....	1.5	1.7	kV
Collector-2 Current .....	-	65	mA
RF Drive Power .....	-	6	dBm
Load VSWR .....	-	1.5 : 1	-

**ENVIRONMENTAL**

Heat Sink Temperature	-30	+90	°C
Storage Temperature	-40	+90	°C



LD7714 OUTLINE (Unit in mm)



LEAD COLOR	LEAD CONNECTIONS	LENGTH
BROWN	HEATER	500 mm MIN.
YELLOW	HEATER-CATHODE	500 mm MIN.
RED	COLLECTOR-1	500 mm MIN.
GREEN	COLLECTOR-2	500 mm MIN.
BLACK	HELIX (GROUND)	500 mm MIN.



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Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

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Anti-radioactive design is not implemented in this product.