NEC

1W, L/S-BAND MEDIUM POWER GaAs HJ-FET

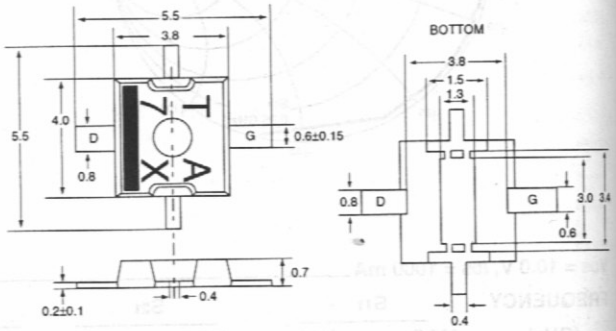
NE6510179A

FEATURES

- **LOW COST PLASTIC SURFACE MOUNT PACKAGE**
- **HIGH OUTPUT POWER:** +31.5 dBm TYP @ V_{DS} = 3.5 V, I_{DSQ} = 150 mA, f = 850 MHz, Pin = +20 dBm
  +32.0 dBm TYP @ V_{DS} = 3.2 V, I_{DSQ} = 200 mA, f = 1760 MHz, Pin = +24 dBm
- **HIGH LINEAR GAIN:** 14 dB TYP @ V_{DS} = 3.5 V, I_{DSQ} = 150 mA, f = 850 MHz, Pin = 0 dBm
  10 dB TYP @ V_{DS} = 3.2 V, I_{DSQ} = 200 mA, f = 1760 MHz, Pin = 0 dBm
- **HIGH POWER ADDED EFFICIENCY:** 70% TYP @ V_{DS} = 3.5 V, I_{DSQ} = 150 mA, f = 850 GHz, Pin = +20 dBm
  60% TYP @ V_{DS} = 3.2 V, I_{DSQ} = 200 mA, f = 1760 GHz, Pin = +24 dBm
- **CLASS AB OPERATION**
- **TAPE & REEL PACKAGE OPTION AVAILABLE**

OUTLINE DIMENSIONS (Units in mm)

PACKAGE OUTLINE 79A



Note: Unless otherwise specified, tolerance is ±0.2 mm.

DESCRIPTION

The NE6510179A is a 1 W GaAs HJ-FET designed for medium power transmitter applications for mobile communication systems. It is capable of delivering 1 watt of output power (CW) with high linear gain, high efficiency, and excellent distortion. Reliability and performance uniformity are assured by NEC's stringent quality and control procedures.

ELECTRICAL CHARACTERISTICS (T_C = 25°C)

PART NUMBER / PACKAGE OUTLINE				NE6510179A 79A			
	SYMBOLS	CHARACTERISTICS	UNITS	MIN	TYP	MAX	TEST CONDITIONS
Functional Characteristics	P_{OUT}	Output Power	dBm		31.5		f = 850 MHz, V_{DS} = 3.5 V, Pin = +20 dBm, Rg = 100 Ω, I_{DSQ} = 150 mA (RF OFF)[2]
	G_L	Linear Gain[1]	dB		14		
	η_{ADD}	Power Added Efficiency	%		70		
	I_D	Drain Current	A		0.53		
Electrical DC Characteristics	I_{DSS}	Saturated Drain Current	A		2.4		V_{DS} = 2.5 V; V_{GS} = 0 V
	V_P	Pinch-Off Voltage	V	-2.0		-0.5	V_{DS} = 2.5 V; I_D = 14 mA
	R_{TH}	Thermal Resistance	°C/W		10		Channel to Case

Notes:
1. Pin = 0 dBm
2. DC performance is 100% testing. RF performance is testing several samples per wafer. Wafer rejection criteria for standard devices is 1 reject for several samples.