

FEATURES

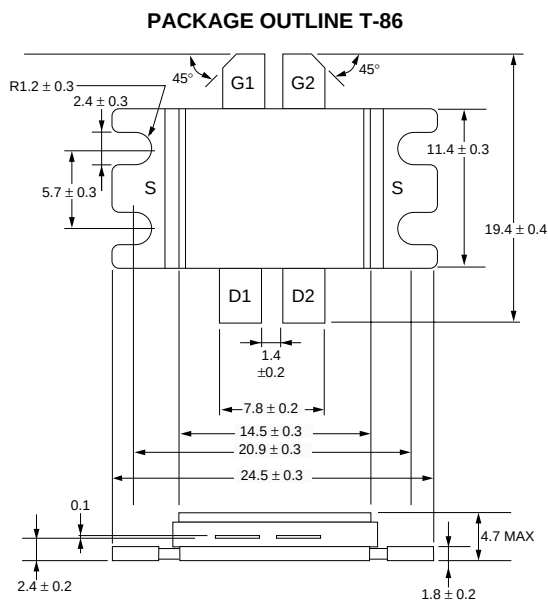
- **HIGH OUTPUT POWER:** 30 W TYP
- **HIGH DRAIN EFFICIENCY:** 38% TYP
- **HIGH LINEAR GAIN:** 12 dB TYP
- **PUSH-PULL TYPE N-CHANNEL GaAs MESFET**

DESCRIPTION

The NES2427P-30 is a "twin" transistor device consisting of two GaAs MESFET chips which may be combined externally in either push-pull or balanced configuration. It is partially matched, and with external matching can operate within the 2.25-2.7 GHz band for WLL and MMDS applications. It is capable of delivering 30 W of output power (CW) with high gain, high efficiency, and excellent linearity. The device employs 0.9 μm Tungsten Silicide gates, via holes, plated heat sink, and silicon dioxide and nitrite passivation for superior performance, thermal characteristics, and reliability.

Reliability and performance uniformity are assured by NEC's stringent quality and control procedures.

OUTLINE DIMENSIONS (Units in mm)



G1, G2 : Gate
D1, D2 : Drain
S : Source

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

PART NUMBER PACKAGE OUTLINE				NES2427P-30 T-86			TEST CONDITIONS
	SYMBOLS	CHARACTERISTICS	UNITS	MIN	TYP	MAX	
Functional Characteristics	P_{OUT}	Output Power	dBm	44.0	45.0		$V_{DS} = 10\text{ V}$ $f = 2.7\text{ GHz}$ $I_{Dset} = 4.0\text{ A Total (RF off)}^2$ $P_{IN} = +36\text{ dBm}$ $R_G = 30\ \Omega$
	G_L^1	Linear Gain	dB	10.0	12.0		
	η_D	Drain Efficiency	%		38		
	I_D	Drain Current	A		7	9	
Electrical DC Characteristics	I_{DSS}	Saturated Drain Current	A		18		$V_{DS} = 2.5\text{ V}; V_{GS} = 0\text{ V}$
	V_P	Pinch-off Voltage	V	-4.0	-2.6		$V_{DS} = 2.5\text{ V}; I_{DS} = 80\text{ mA}$
	R_{TH}	Thermal Resistance	$^\circ\text{C/W}$		1.3	1.7	Channel to Case

Note:

1. $P_{IN} = +20\text{ dBm}$ for Linear Gain
2. $I_{Dset} = 2.0\text{ A}$ Each Drain

ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V _{DS}	Drain to Source Voltage	V	15
V _{GS}	Gate to Source Voltage	V	-7
V _{GD}	Gate to Drain Voltage	V	-18
I _D	Drain Current	A	27
I _G	Gate Current	mA	180
P _T	Total Power Dissipation	W	90
T _{CH}	Channel Temperature	°C	175
T _{STG}	Storage Temperature	°C	-65 to +175

Notes:

1. Operation in excess of any one of these parameters may result in permanent damage.

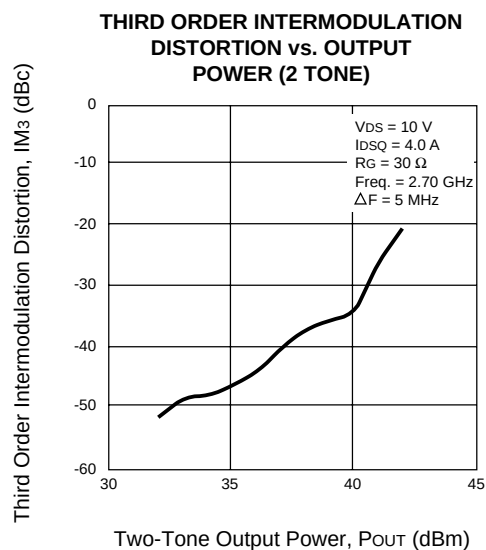
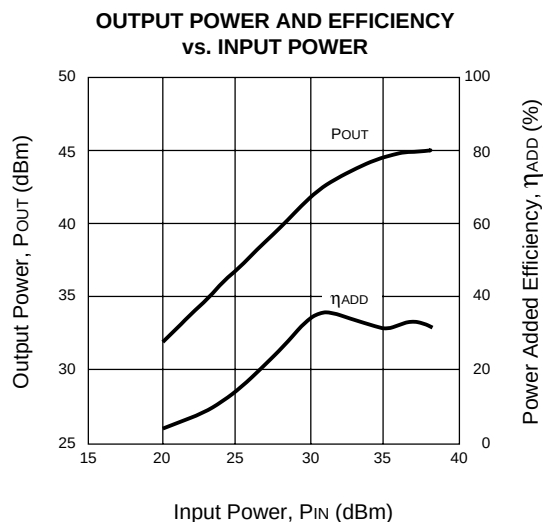
RECOMMENDED OPERATING LIMITS

SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
V _{DS}	Drain to Source Voltage	V			10
G _{COMP}	Gain Compression	dB			3
T _{CH}	Channel Temperature	°C			+150
I _{Dset}	Set Drain Current ¹	A		4	5
R _G	Gate Resistance ²	Ω			30

Notes:

1. V_{DS} = 10 V, RF OFF
2. R_G is the series resistance between the gate supply and the FET gate.

TYPICAL PERFORMANCE CURVES (T_A = 25°C)



ORDERING INFORMATION

PART NUMBER	PACKAGE
NES2427P-30	T-86