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NESG260234

# **NEC's NPN SiGe RF TRANSISTOR** FOR MEDIUM OUTPUT POWER **AMPLIFICATION (1 W) 3-PIN POWER MINIMOLD (34 PACKAGE)**

#### **FEATURES**

- THIS PRODUCT IS SUITABLE FOR **MEDIUM OUTPUT POWER (1 W) AMPLIFICATION** Po = 30 dBm TYP. @ VcE = 6 V, Pin = 15 dBm, f = 460 MHz Po = 30 dBm TYP. @ VcE = 6 V, Pin = 20 dBm, f = 900 MHz
- MAXIMUM STABLE GAIN: MSG = 23 dB TYP @ VCE = 6 V, IC = 100 mA, f = 460 MHz
- SiGe TECHNOLOGY: **UHS2-HV** process
- **ABSOLUTE MAXIMUM RATINGS:** Vсво = 25 V
- 3-PIN POWER MINIMOLD (34 PACKAGE)

#### **ORDERING INFORMATION**

PART NUMBER	ORDER NUMBER	PACKAGE	QUANTITY	SUPPLYING FORM		
NE <mark>SG26023</mark> 4	NESG260234-AZ	3-pin power minimold	25 pcs (Non reel)	Magazine case		
NESG260234-T1	34-T1 NESG260234-T1-AZ (Pb	(Pb-Free) Note1	G260234-T1-AZ (Pb-Free) <sup>Note1</sup>	1 kpcs/reel	• 12 mm wide embossed taping	
				• Pin 2 (Emitter) face the perforation side of the tape		
Notes 1. Contains Lead in the part except the electrode terminals.						

Remark To order evaluation samples, contact your nearby sales office.

Unit sample quantity is 25 pcs.

#### ABSOLUTE MAXIMUM RATINGS (TA=+25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	Vсво	25	V
Collector to Emitter Voltage	VCEO	9.2	V
Emitter to Base Voltage	Vево	2.8	V
Collector Current	lc	600	mA
Total Power Dissipation	Ptot Note	1.9	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-65 to +150	°C

**Note** Mounted on 34.2 cm<sup>2</sup>  $\times$  0.8 mm (t) glass epoxy PWB



aution Cobserve precautions when handling because these devices are sensitive to electrostatic discharge.

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### THERMAL RESISTANCE (TA = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance from Junction to Ambient Note	Rth <sub>j-a</sub>	65	°C/W

Note Mounted on 34.2  $\text{cm}^2 \times 0.8 \text{ mm}$  (t) glass epoxy PWB

### **RECOMMENDED OPERATING RANGE** (TA = 25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector to Emitter Voltage	VCE	-	6.0	7.2	V
Collector Current	lc	-	400	500	mA
Input Power <sup>Note</sup>	Pin	-	15	20	dBm

Note Input power under conditions of V\_{CE}  $\leq 6.0$  V, f = 460 MHz

## ELECTRICAL CHARACHTERISTICS (TA = 25°C)

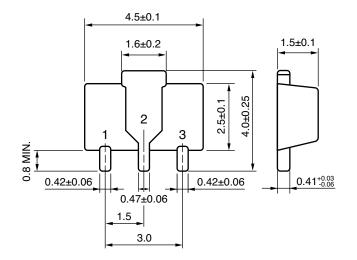
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
DC Characteristics		<u>.</u>	<u>,</u>			
Collector Cut-off Current	Ісво	V <sub>CB</sub> = 9.2 V, I <sub>E</sub> = 0 mA	-	-	1	μΑ
Emitter Cut-off Current	Іево	VEB = 1.0 V, Ic = 0 mA	-	-	1	μA
DC Current Gain	hfe Note	Vce = 3 V, Ic = 100 mA	80	120	180	-
<b>RF</b> Characteristics						
Linear gain (1)	G∟	$\label{eq:Vce} \begin{array}{l} V_{CE}=6 \mbox{ V, Ic (set)}=30 \mbox{ mA (RF OFF)}, \\ f=460 \mbox{ MHz, Pin}=0 \mbox{ dBm} \end{array}$	19	22	-	dB
Linear gain (2)	G∟	$\label{eq:Vce} \begin{array}{l} V_{CE}=6 \mbox{ V, Ic (set)}=30 \mbox{ mA (RF OFF)}, \\ f=900 \mbox{ MHz, Pin}=0 \mbox{ dBm} \end{array}$	-	19	_	dB
Output Power (1)	Po	$V_{CE} = 6 \text{ V, Ic (set)} = 30 \text{ mA (RF OFF)},$ f = 460 MHz, Pin = 15 dBm	28.5	30.0	-	dBm
Output Power (2)	Po	$V_{CE} = 6 \text{ V, Ic (set)} = 30 \text{ mA (RF OFF)},$ f = 900 MHz, Pin = 20 dBm	-	30.0	-	dBm
Collector Efficiency (1)	ηα	$\label{eq:Vce} \begin{array}{l} V_{CE}=6 \mbox{ V, Ic (set)}=30 \mbox{ mA (RF OFF)}, \\ f=460 \mbox{ MHz, Pin}=15 \mbox{ dBm} \end{array}$	-	50	-	%
Collector Efficiency (2)	ηα	$\label{eq:Vce} \begin{array}{l} V_{CE}=6 \ V, \ I_{C \ (set)}=30 \ mA \ (RF \ OFF), \\ f=900 \ MHz, \ P_{in}=20 \ dBm \end{array}$	-	60	-	%

Notes 1. Pulse measurement: PW  $\leq 350~\mu s,$  Duty Cycle  $\leq 2\%$ 

### **hfe CLASSIFICATION**

RANK	FB		
Marking	SP		
hre Value	80 to 180		

### 3-PIN POWER MINIMOLD (34 PACKAGE) (UNIT:mm)



#### **PIN CONNECTIONS**

- 1. Collector
- 2. Emitter
- 3. Base

Life Support Applications

These NEC products are not intended for use in life support devices, appliances, or systems where the malfunction of these products can reasonably be expected to result in personal injury. The customers of CEL using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CEL for all damages resulting from such improper use or sale.

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