

NEC[®]**2.3 GHz POWER
OSCILLATOR TRANSISTOR****NEX2300
SERIES****FEATURES**

- **HIGH POWER:** 3.2 W AT 2.3 GHz
- **HIGH EFFICIENCY:** 30%
- **LOW AM & FM NOISE**
- **HIGH RELIABILITY**
- **COMMON COLLECTOR**

DESCRIPTION AND APPLICATIONS

The NEX2300 series is an NPN transistor using NEC's advanced Stepped Electrode Transistor (SET) structure with emitter ballasting resistors. The Pt-Si/Ti/Pt/Au metallization system assures optimum reliability. The series is provided in grounded collector hermetic packages ideal for power oscillator applications in L thru S-bands.

PERFORMANCE SPECIFICATIONS ($T_A = 25^\circ\text{C}$)

PART NUMBER PACKAGE OUTLINE			NEX2301 64, 65, 87	NEX2302 64, 65	NEX2303 64, 65
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	TYP	TYP	TYP
P _{osc}	Oscillator Power Output at V _{CE} = 18 V, f = 2.3 GHz I _E = 250 mA I _E = 350 mA I _E = 600 mA	W W W	1.6	2	3.2

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

PART NUMBER PACKAGE OUTLINE			NEX2301 87			NEX2301 64, 65			NEX2302 64, 65			NEX2303 64, 65		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
I _{CBO}	Collector Cutoff Current at V _{CB} = 30 V, I _E = 0	mA			0.25			0.25			0.5			1
I _{EB0}	Emitter Cutoff Current at V _{EB} = 2 V, I _C = 0	mA			0.25			0.25			0.5			1
h _{FE}	Forward Current Gain at V _{CE} = 5 V, I _C = 100 mA I _C = 200 mA I _C = 400 mA		15	40	120	15	40	120	15	40	120	15	40	120
C _{OB}	Output Capacitance at V _{CB} = 20 V, I _E = 0	pF		1.5	2.5		2.5	4		3.7	5		6.2	8
R _{TH}	Thermal Resistance (Junction-to-Case)	°C/W			25			16			10			6
P _T	Total Power Dissipation	W			7			11			17.5			29

NEX2300 SERIES

T-33-07

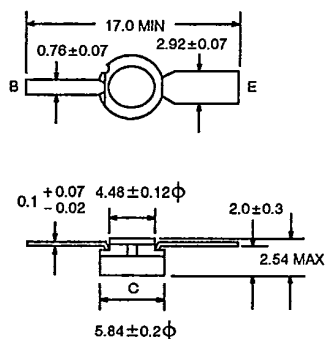
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ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

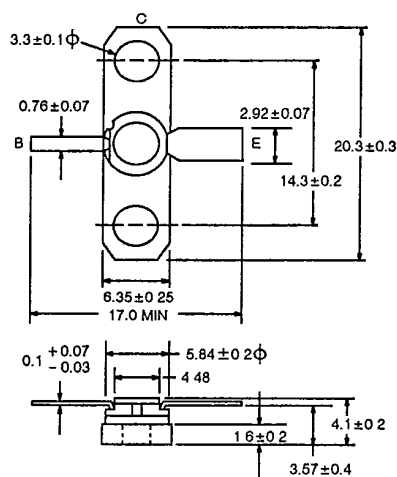
PART NUMBER PACKAGE OUTLINE			NEX2301 64, 65, 87	NEX2302 64, 65	NEX2303 64, 65
SYMBOLS	CHARACTERISTICS	UNITS	RATINGS	RATINGS	RATINGS
V_{CB0}	Collector to Base Voltage	V	45	45	45
V_{CE0}	Collector to Emitter Voltage	V	20	20	20
V_{EB0}	Emitter to Base Voltage	V	3	3	3
I_C	Collector Current	A	0.6	1.1	2
T_J	Junction Temperature	$^\circ\text{C}$	200	200	200
T_{STG}	Storage Temperature	$^\circ\text{C}$	-65 to +200	-65 to +200	-65 to +200

OUTLINE DIMENSIONS (Units in mm)

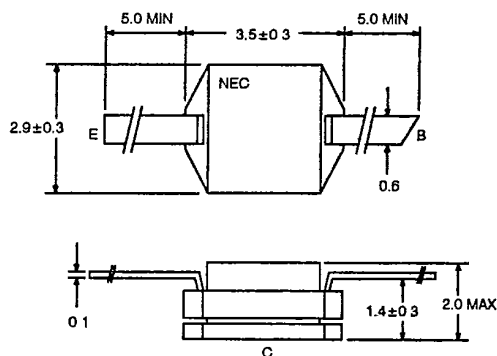
OUTLINE 64



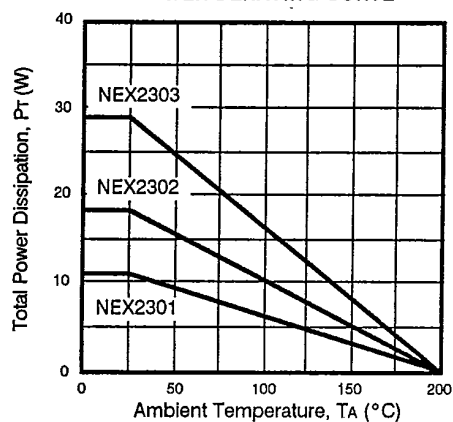
OUTLINE 65



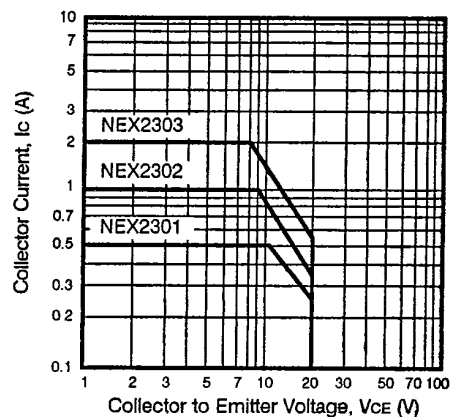
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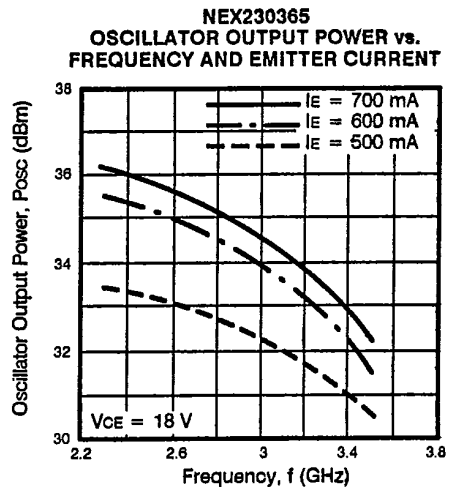
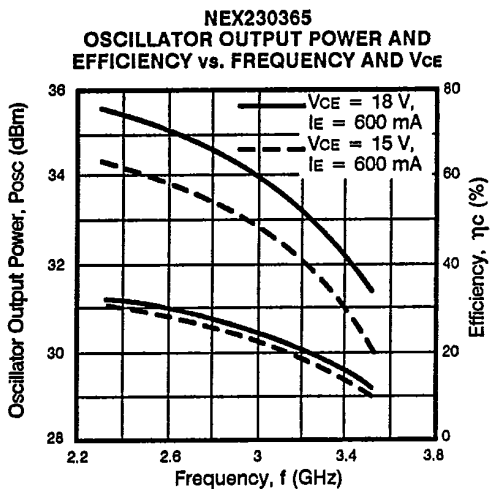
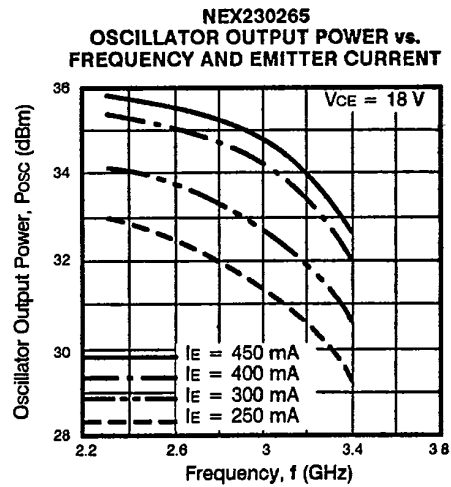
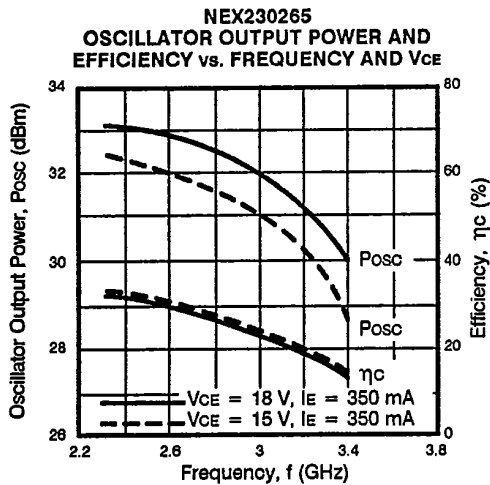
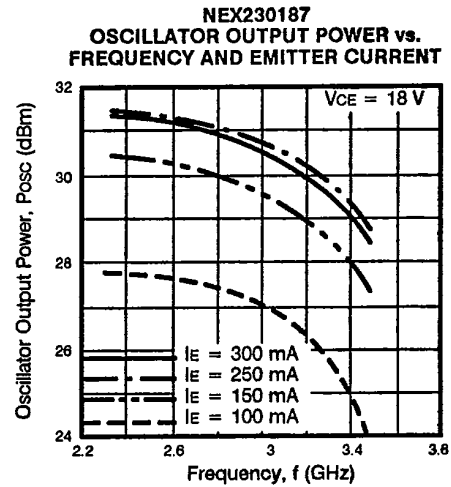
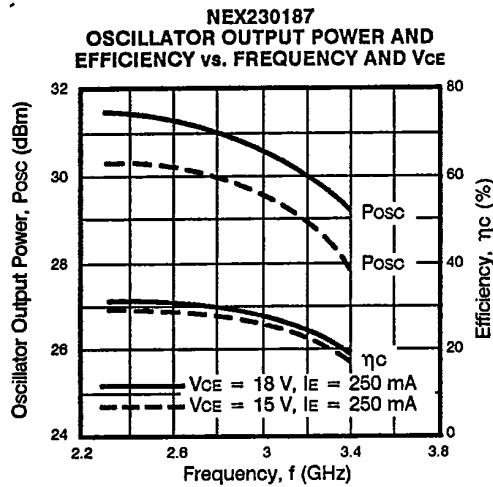
TYPICAL DEVICE CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

POWER DERATING CURVE



DC SAFE OPERATING REGION



T-33-07
T-33-09TYPICAL PERFORMANCE CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

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