

RF2127

RF POWER BIPOLAR TRANSISTORS VHF MOBILE APPLICATIONS

FEATURES SUMMARY

- 175 MHz
- 12.5 VOLTS
- COMMON EMITTER
- POUT = 100 W MIN. WITH 6.0 dB GAIN

DESCRIPTION

The RF2127 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF FM communications. This device utilizes diffused emitter resistors to withstand extremely high VSWR under rated operating conditions, and is internally input matched to optimize power gain and efficiency over the 136 - 175 MHz band.

Figure 1. Package

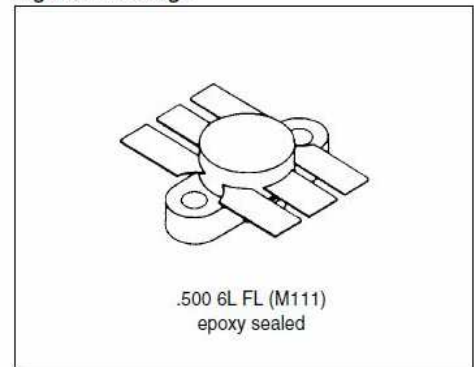


Figure 2. Pin Connection

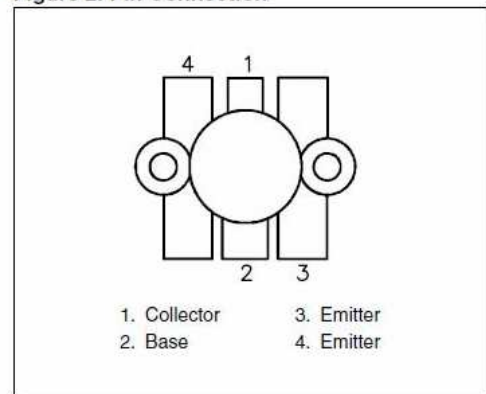


Table 1. Order Codes

Order Codes	Marking	Package	Packaging
RF2127	RF2127	M111	PLASTIC TRAYS

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	20	A
P_{DISS}	Power Dissipation	270	W
T_J	Junction Temperature	+200	$^{\circ}C$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}C$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.65	$^{\circ}C/W$
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ELECTRICAL SPECIFICATIONS ($T_{case} = 25^{\circ}C$)

STATIC

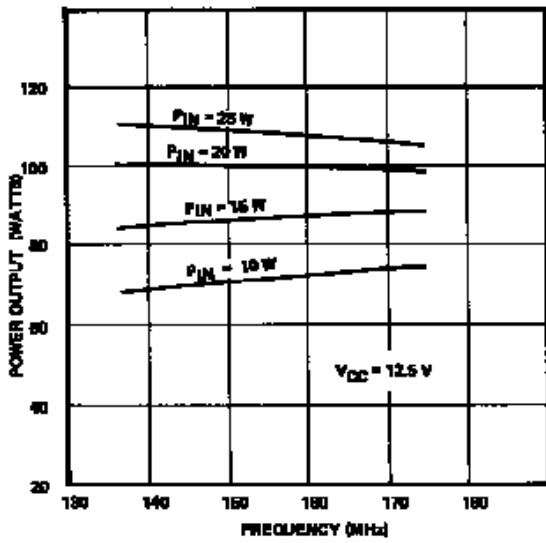
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 50mA$	$I_E = 0mA$	36	—	—	V
BV_{CES}	$I_C = 100mA$	$V_{BE} = 0V$	36	—	—	V
BV_{CEO}	$I_C = 100mA$	$I_B = 0mA$	18	—	—	V
BV_{EBO}	$I_E = 10mA$	$I_C = 0mA$	4.0	—	—	V
I_{CES}	$V_{CE} = 15V$	$I_E = 0mA$	—	—	15	mA
h_{FE}	$V_{CE} = 5V$	$I_C = 5A$	10	—	—	—

DYNAMIC

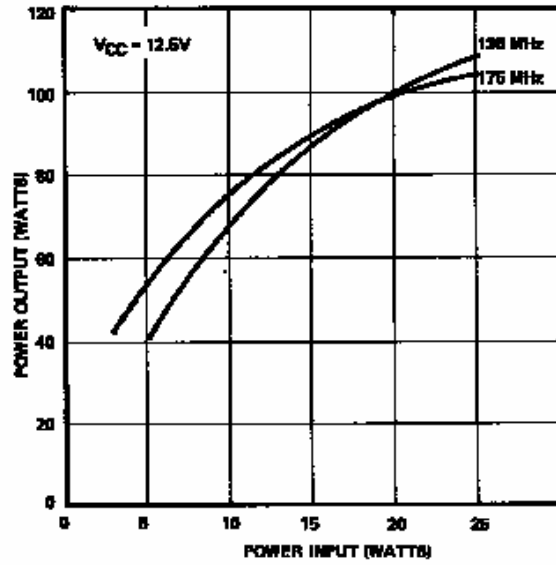
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 175 MHz$	$P_{IN} = 25 W$	$V_{CC} = 12.5 V$	100	—	—	W
G_P	$f = 175 MHz$	$P_{IN} = 25 W$	$V_{CC} = 12.5 V$	6.0	—	—	dB
C_{OB}	$f = 1 MHz$	$V_{CB} = 12.5 V$		—	350	—	pF

TYPICAL PERFORMANCE

POWER OUTPUT vs FREQUENCY

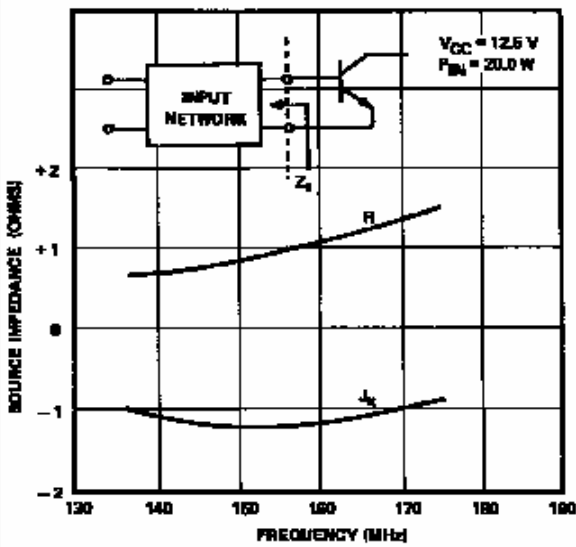


POWER OUTPUT vs POWER INPUT

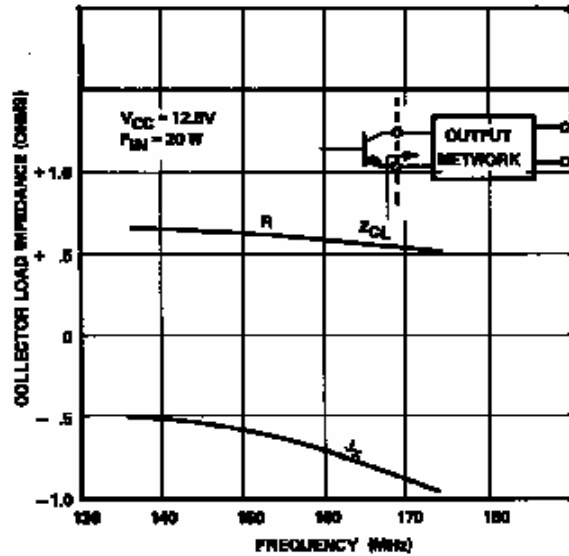


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE



TYPICAL COLLECTOR LOAD IMPEDANCE



FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
175 MHz	$1.5 - j 0.9$	$0.5 - j 1.0$