

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

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

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-Emitter	20	Vdc
V_{CBO}	Collector-Base Voltage	40	Vdc
V_{EBO}	Emitter-Base Voltage	2.0	Vdc
I_C	Collector Current	400	mA

THERMAL DATA

Symbol	Parameter	Value	Unit
P_D	Total Device Dissipation @ $T_A = 25^\circ$ Derate above 25°C	1.0 5.71	Watts mW/ $^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
STATIC OFF					
B _{V_{CER}}	Collector-Emitter Sustaining Voltage (I _C = 5.0 mAdc, R _{BE} = 10 ohms)	40	-	-	Vdc
B _{V_{CEO}}	Collector-Emitter Sustaining Voltage (I _C = 5.0 mAdc, I _B = 0)	20	-	-	Vdc
I _{CEO}	Collector Cutoff Current (V _{CE} = 12 Vdc, I _B = 0)	-	-	20	μA
I _{CEX}	Collector Cutoff Current (V _{CE} = 40 Vdc, V _{BE} = -1.5 Vdc)	-	-	100	μA
I _{EBO}	Emitter Cutoff Current (V _{EB} = 2.0 Vdc, I _C = 0)	-	-	100	μA
STATIC ON					
H _{FE}	DC Current Gain (I _C = 100 mAdc, V _{CE} = 5.0 Vdc) (I _C = 360 mAdc, V _{CE} = 5.0 Vdc)	10 5	- -	200 -	-
V _{CE(sat)}	Collector-Emitter Saturation Voltage (I _C = 100 mAdc, I _B = 20 mAdc)	-	-	0.5	Vdc
DYNAMIC					
f _T	Current-Gain - Bandwidth Product (I _C = 50 mAdc, V _{CE} = 15 Vdc, f = 200 MHz)	500	-	-	MHz
C _{OB}	Output Capacitance (V _{CB} = 12 Vdc, I _E = 0, f = 1.0 MHz)	-	4.0	-	pF

2N4427

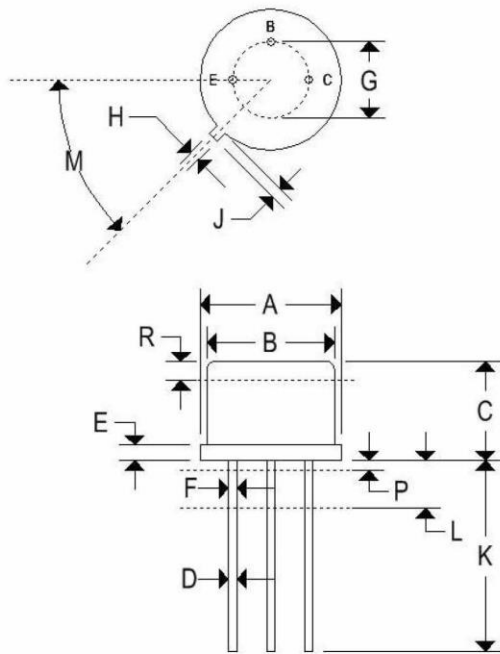
RF & MICROWAVE DISCRETE LOW POWER TRANSISTOR

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise specified)

Symbol	Test Conditions		Value			Unit
FUNCTIONAL						
G _{PE}	Power Gain	Pin = 0.1 W, V _{CE} = 12 Vdc, f = 175 MHz	10	-	-	dB
P _{out}	Output Power	Pin = 0.1 W, V _{CE} = 12 Vdc, f = 175 MHz	1.0	-	-	Watts
η _c	Collector Efficiency	Pin = 0.1 W, V _{CE} = 12 Vdc, f = 175 MHz	45	-	-	%

MECHANICAL CHARACTERISTICS

Case:	TO-39
Marking:	Alpha-numeric
Polarity:	Cathode band



	TO-39			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.350	0.370	8.890	9.400
B	0.315	0.335	8.000	8.510
C	0.240	0.260	6.10	6.60
D	0.016	0.021	0.406	0.533
E	0.009	0.125	0.2269	3.180
F	0.016	0.019	0.406	0.533
G	0.190	0.210	4.830	5.33
H	0.028	0.034	0.711	0.864
J	0.029	0.040	0.737	1.020
K	0.500	-	12.700	-
L	0.250	-	6.350	-
M	45° NOM		45° NOM	
P	-	0.050	-	1.270
Q	90° NOM		90° NOM	
R	0.100	-	2.540	-

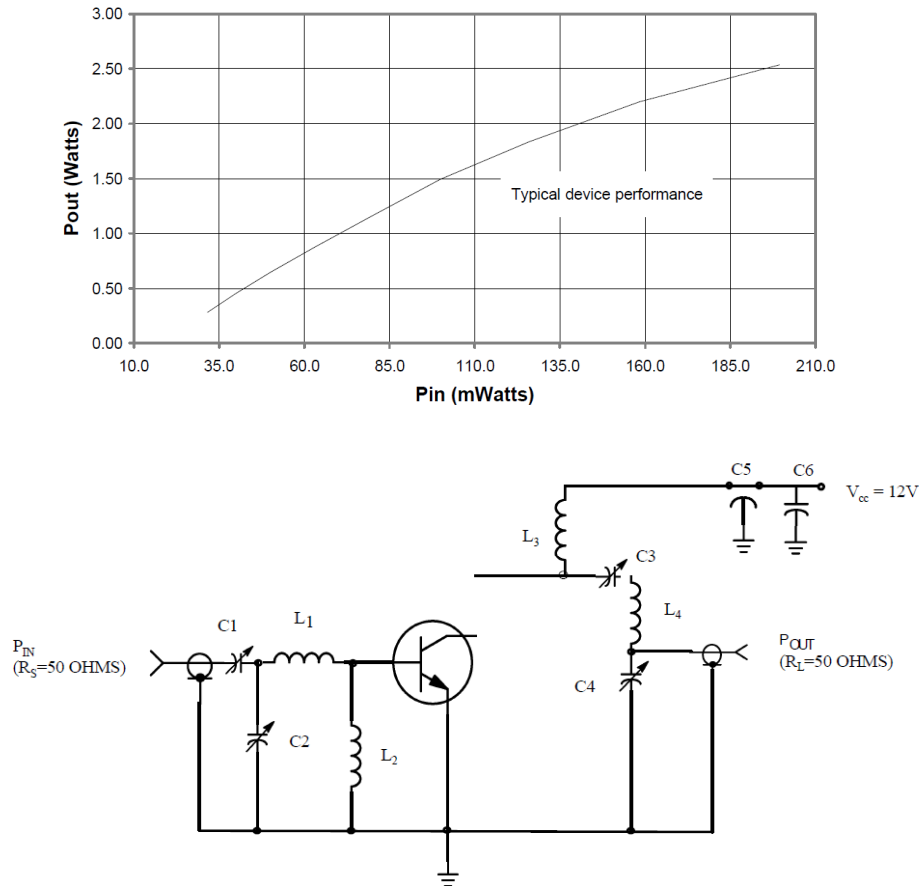


Figure 1 - 175 MHz RF AMPLIFIER CIRCUIT FOR G_{PE} , P_{OUT} , AND EFFICIENCY SPECIFICATIONS.

L_1 : 2 TURNS No. 16 wire, 3/16" ID, 1/4" long

L_3 : 2 TURNS No. 16 wire, 1/4" ID, 1/4" long

Capacitor values in pF unless

L_2 : Ferrite choke, $Z=450$ ohms

L_4 : 4 TURNS No. 16 wire, 3/8" ID, 3/8" long

Tuning capacitors are air variable
otherwise indicated.