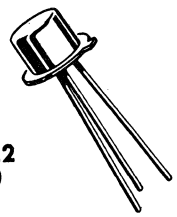
2N3298 (SILICON)



CASE 22
(TO-18)

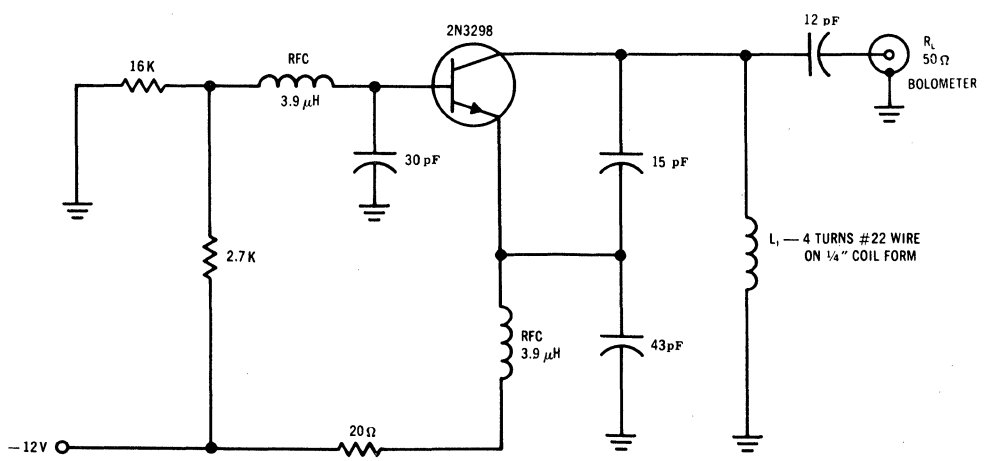
NPN silicon annular transistor for power oscillator applications to 150 MHz.

Collector connected to case

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB}	25	Vdc
Collector-Emitter Voltage	V_{CES}	25	Vdc
Emitter-Base Voltage	V_{EB}	3.0	Vdc
Collector Current	I_C	100	mA
Total Device Dissipation (25°C Case Temperature) Derate Above 25°C	P_D	1.0 6.67	Watt mW/°C
Total Device Dissipation (25°C Ambient Temperature) Derate Above 25°C 2mW/°C	P_D	0.3 2.0	Watt mW/°C
Junction Temperature	T_J	+175	°C
Storage Temperature Range	T_{stg}	-65 to +175	°C

80 MHz OSCILLATOR POWER OUTPUT TEST CIRCUIT

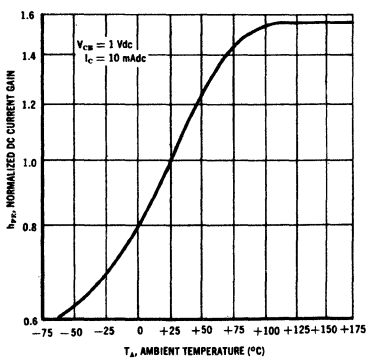


ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Conditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CES}	I_C=25 μAdc, V_{BE}=0	25	35	-	Vdc
Collector-Emitter Open Base Sustaining Voltage	$BV_{CEO(sus)}$ (1)	I_C=10mA, I_B=0	15	24	-	Vdc
Collector Cutoff Current	I_{CBO}	V_{CB}=10 Vdc, I_E=0 V_{CB}=10 Vdc, I_E=0, T_A=150°C	- -	0.01 10	0.5 50	μAdc
Emitter Cutoff Current	I_{EBO}	V_{EB}=3 Vdc, I_C = 0	-	-	10	μAdc
DC Current Gain	h_{FE}	V_{CE}=1 Vdc, I_C=10 mAdc	60	90	120	-
AC Current Gain	$\|h_{fe}\|$	V_{CE}=10 Vdc, I_C=10mAdc, f=100 MHz	2.0	-	-	-
Collector Output Capacitance	C_{ob}	V_{CB}=10 Vdc, I_E=0, f=100 kHz	-	5.0	6.0	pF
Power Output	P_{out}	f=80 MHz V_{CC}=12 Vdc $I_{C(max)}$=20 mA	60	-	100	mW
Efficiency	η		25	40	-	%

(1) Pulse Width = 300 μs, Duty Cycle = 2%

NORMALIZED DC CURRENT GAIN versus AMBIENT TEMPERATURE



f_T versus COLLECTOR CURRENT