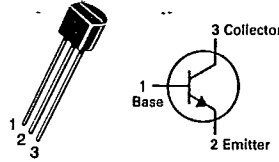


T-31-19

**BF374
BF375, C, D**

CASE 29-04, STYLE 2
TO-92 (TO-226AA)



VHF TRANSISTORS
NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	25	Vdc
Collector-Base Voltage	V _{CBO}	30	Vdc
Emitter-Base Voltage	V _{EBO}	3.0	Vdc
Collector Current - Continuous	I _C	100	mA _{dc}
Total Device Dissipation @ T _A = 25°C Derate above 25°C	P _D	350 2.8	mW mW/°C
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	1.0 8.0	Watt mW/°C
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	125	°C/W
Thermal Resistance, Junction to Ambient	R _{θJA}	357	°C/W

Refer to MPSH10 for graphs.

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

Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I _C = 1.0 mA _{dc} , I _B = 0)	V _{(BR)CEO}	25			Vdc
Collector-Base Breakdown Voltage (I _C = 10 μA _{dc} , I _E = 0)	V _{(BR)CBO}	30			Vdc
Emitter-Base Breakdown Voltage (I _E = 10 μA _{dc} , I _C = 0)	V _{(BR)EBO}	3.0			Vdc
Collector Cutoff Current (V _{CB} = 25 Vdc, I _E = 0)	I _{CBO}			100	nA _{dc}
Emitter Cutoff Current (V _{EB} = 2.0 Vdc, I _C = 0)	I _{EBO}			100	nA _{dc}
ON CHARACTERISTICS					
DC Current Gain (I _C = 1.0 mA _{dc} , V _{CE} = 10 Vdc)	h _{FE}	70 35 70 35		250 120 120 90	
Collector-Emitter Saturation Voltage (I _C = 1.0 mA _{dc} , I _B = 0.1 mA _{dc}) (I _C = 10 mA _{dc} , I _B = 1.0 mA _{dc})	V _{CE(sat)}		50 70		mVdc mVdc
Base-Emitter Saturation Voltage (I _C = 10 mA _{dc} , I _B = 1.0 mA _{dc})	V _{BE(sat)}		830		mVdc
Base-Emitter On Voltage (I _C = 1.0 mA _{dc} , V _{CE} = 10 Vdc) (I _C = 10 mA _{dc} , V _{CE} = 10 Vdc)	V _{BE(on)}		700 770		mVdc mVdc
SMALL-SIGNAL CHARACTERISTICS					
Current Gain-Bandwidth Product (I _C = 1.0 mA _{dc} , V _{CE} = 10 Vdc, f = 100 MHz)	f _T	400	800		MHz
Common Emitter Feedback Capacitance (V _{CB} = 10 Vdc, I _E = 0, f = 1.0 MHz)	C _{re}		0.55	0.6	pF
Collector-Base Time Constant (I _C = 4.0 mA _{dc} , V _{CE} = 10 Vdc, f = 31.8 MHz)	τ _{bC}		6		ps
Noise Figure (I _C = 1.0 mA _{dc} , V _{CE} = 10 Vdc, f = 100 MHz, R _s = 50 ohms)	N _f		4		dB
Common-Emitter Amplifier Power Gain (I _C = 1.0 mA _{dc} , V _{CE} = 10 Vdc, f = 200 MHz)	G _{pe}		20		dB

ELECTRICAL CHARACTERISTICS (continued) ($T_A = 25^\circ\text{C}$ unless otherwise noted)

TYPICAL ADMITTANCE PARAMETERS ($I_C = 1.0\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$, frequency as stated)

Symbol	f = 10.7 MHz	f = 30 MHz	f = 100 MHz	Unit
G _{11e}	0.28	0.4	1.4	mmho
B _{11e}	0.6	1.6	5.0	mmho
G _{22e}	6.5	7	20	μmho
B _{22e}	0.1	0.3	1.0	mmho
G _{21e}	36	34	30	mmho
B _{21e}	-0.8	-2.5	-9	mmho
B _{12e}	-52	-150	-500	μmho

FIGURE 1 — INPUT ADMITTANCE (Output short circuit)

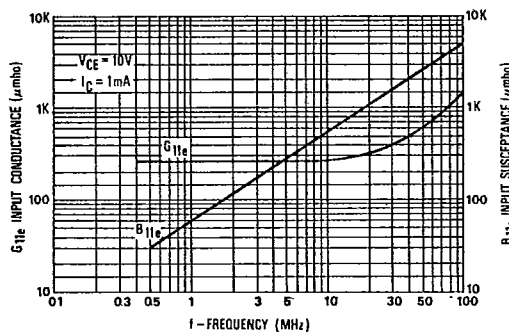


FIGURE 2 — OUTPUT ADMITTANCE (Input short circuit)

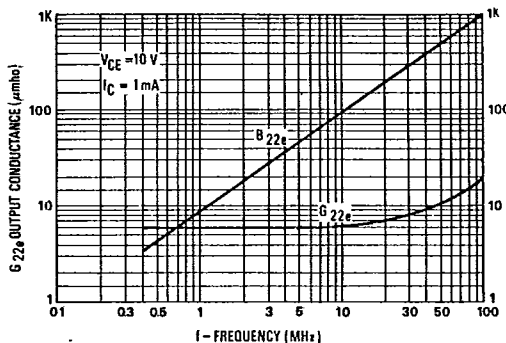


FIGURE 3 — FORWARD TRANSFER ADMITTANCE (Output short circuit)

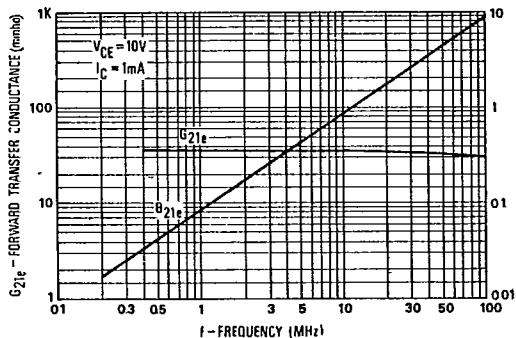


FIGURE 4 — REVERSE TRANSFER ADMITTANCE (Input short circuit)

