BF240
BF241

CASE 29-02, STYLE 21
TO-92 (TO-226AA)

AM/FM TRANSISTORS

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	40	Vdc
Collector-Base Voltage	V_{CBO}	40	Vdc
Emitter-Base Voltage	V_{EBO}	4.0	Vdc
Collector Current – Continuous	I_C	25	mAdc
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	$R_{\theta JC}$	125	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JC}$	357	°C/W

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

Characteristic		Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (1) (I_C = 2 mAdc, I_B = 0)		$V_{(BR)CEO}$	40			Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)		$V_{(BR)CBO}$	40			Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		$V_{(BR)EBO}$	4			Vdc
Collector Cutoff Current (V_{CB} = 20 Vdc, I_E = 0)		I_{CBO}			100	nAdc
ON CHARACTERISTICS						
DC Current Gain (I_C = 1 mAdc, V_{CE} = 10 Vdc)	BF240 BF241	h_{FE}	65 35		220 125	—
Base-Emitter On Voltage (I_C = 1.0 mAdc, V_{CE} = 10 Vdc)		$V_{BE(on)}$	.65	.70	.74	Vdc
SMALL-SIGNAL CHARACTERISTICS						
Current Gain–Bandwidth Product (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)	BF240 BF241	f_T		600 470		MHz
Common Emitter Feedback Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz)		C_{re}		.28	.34	pF
Noise Figure (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, R_S = 200 Ω, f = 100 KHz) R_S = 50 Ω, f = 100 MHz		N_f		 2.5	3.5	dB
Output Admittance (I_C = 1 mAdc, V_{CE} = 10 Vdc, f = 450 KHz) (f = 10.7 MHz)		g_{oe}			8.3 10.5	μmho

(1) Pulse test: Pulse Width ≤ 300 μs. Duty cycle ≤ 2.0%.

FIGURE 1 – CURRENT GAIN-BANDWIDTH PRODUCT

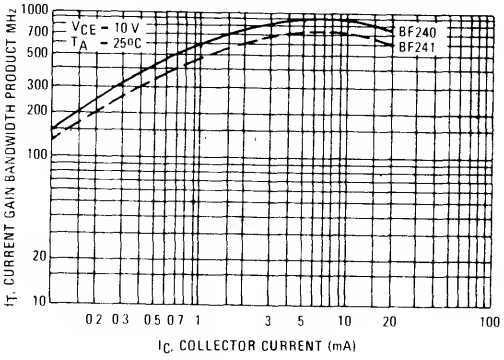

FIGURE 2 – CAPACITANCES

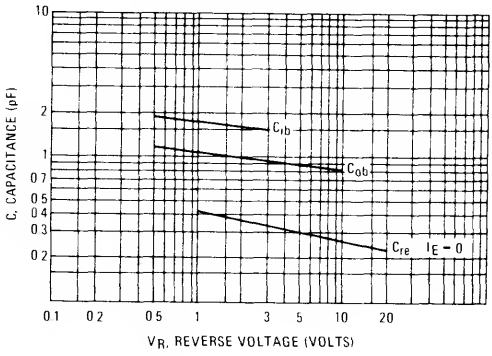

FIGURE 3 – DC CURRENT GAIN

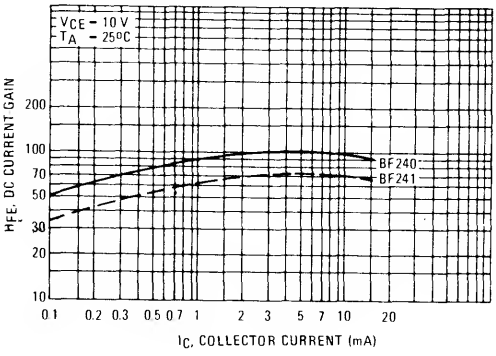

FIGURE 4 – b11e

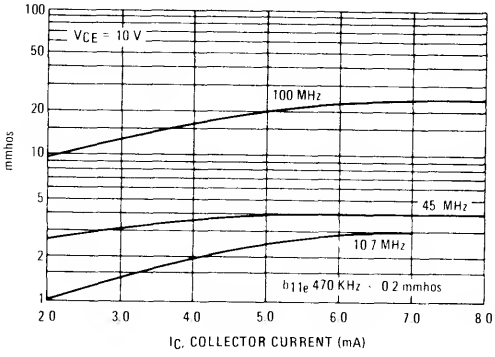

FIGURE 5 – b21e

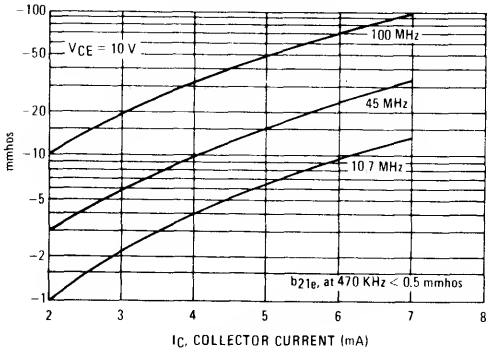

FIGURE 6 – b22e (boe)

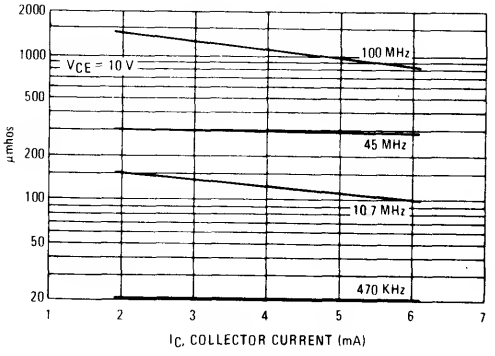

FIGURE 7 – g11e (gie)

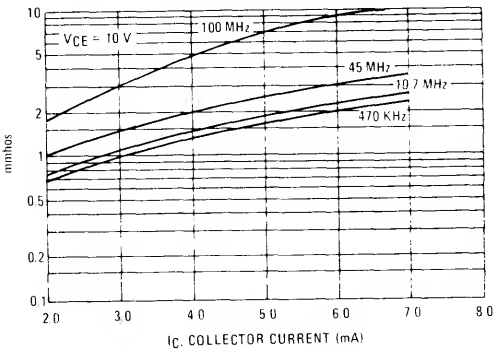

FIGURE 8 – g21e (Yfe)

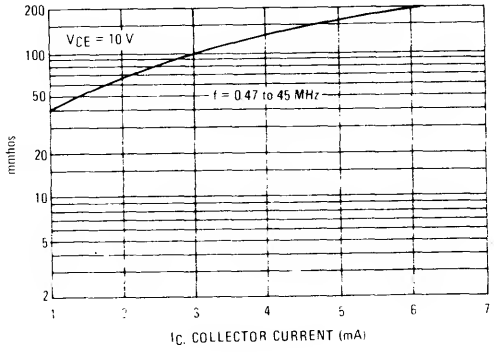

FIGURE 9 – g22e (goe)