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BF254
BF255

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}	20	Vdc
Collector-Base Voltage	V_{CBO}	30	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current – Continuous	I_C	100	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 (I_C = 1.0 mAdc, I_B = 0)		$V_{(BR)CEO}$	20			Vdc
Collector-Base Breakdown Voltage (I_C = 10 μAdc, I_E = 0)		$V_{(BR)CBO}$	30			Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		$V_{(BR)EBO}$	5.0			Vdc
Collector Cutoff Current (V_{CB} = 10 Vdc, I_E = 0)		I_{CBO}			100	nAdc
Emitter Cutoff Current (V_{EB} = 3.0 Vdc, I_C = 0)		I_{EBO}			100	nAdc
ON CHARACTERISTICS						
DC Current Gain (I_C = 1.0 mA, V_{CE} = 10 Vdc)	BF254 BF254-3 BF254-4 BF255 BF255-2 BF255-3	h_{FE}	65 65 100 35 35 65		220 125 220 125 75 125	
Base-Emitter On Voltage (I_C = 1.0 mAdc, V_{CE} = 10 Vdc)	BF254 BF255	$V_{BE(on)}$		.68		Vdc
SMALL-SIGNAL CHARACTERISTICS						
Current Gain–Bandwidth Product (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)	BF254 BF255	f_T		260 200		MHz
Common Emitter Feedback Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz)		C_{re}		0.90		pF
Noise Figure (I_C = 1.0 mAdc, V_{CE} = 10 Vdc, f = 1 MHz, R_S = 50 ohms)		N_f		1.7		dB

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

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

Symbol	f = 450 KHz		f = 10.7 MHz		Unit
	BF254	BF255	BF254	BF255	
g_{11e}	0.20	0.40	0.26	0.5	mmhos
b_{11e}	0.05	0.06	1.2	1.6	mmhos
g_{22e}	3.0	1.5	5.3	4.5	μmhos
b_{22e}	8.0	8.0	190	190	μmhos
b_{12e}	− 5.0	− 5.0	− 130	− 130	μmhos
g_{12e}	− 0.7	− 0.4	− 3.0	− 3.5	μmhos
g_{21e}	30	30	30	30	mmhos
b_{21e}	− 0.003	− 0.004	− 0.7	− 1.0	mmhos

FIGURE 1 – DC CURRENT GAIN

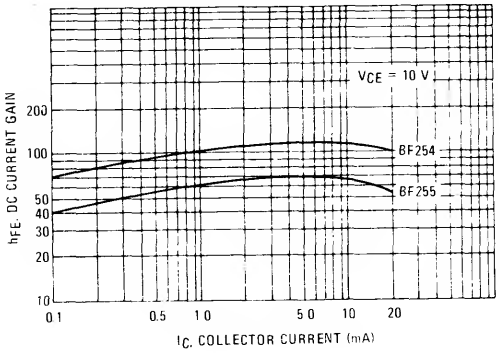

FIGURE 2 – CURRENT GAIN–BANDWITH PRODUCT

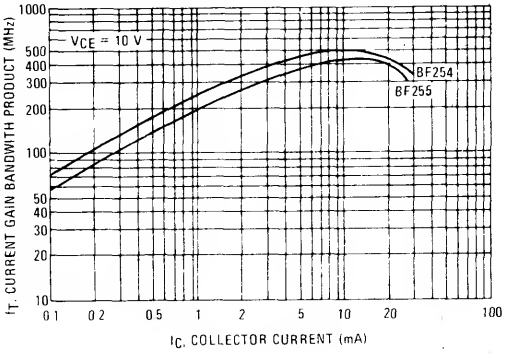

FIGURE 3 – "ON" VOLTAGE

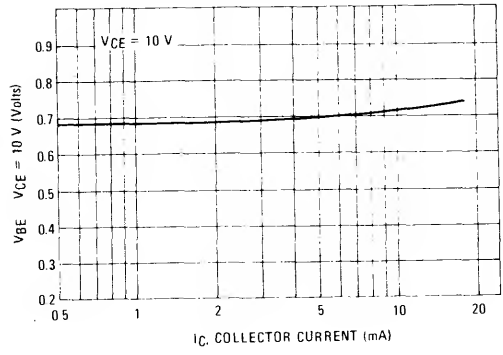

FIGURE 4 – CAPACITANCES