

MRF531

CASE 79-02, STYLE 1
TO-39 (TO-205AD)

HIGH FREQUENCY TRANSISTOR

NPN SILICON



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	100	Vdc
Collector-Base Voltage	V_{CBO}	100	Vdc
Emitter-Base Voltage	V_{EBO}	3.5	Vdc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	2.5 14.3	Watts mW/°C
Storage Temperature	T_{stg}	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	70	°C/W

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage ($I_C = 10\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	100	—	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 0.1\text{ mA}$, $I_E = 0$)	$V_{(BR)CBO}$	100	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 0.1\text{ mA}$, $I_C = 0$)	$V_{(BR)EBO}$	3.5	—	—	Vdc
Collector Cutoff Current ($V_{CE} = 75\text{ Vdc}$, $V_{BE} = 0$)	I_{CES}	—	—	10	μAdc
ON CHARACTERISTICS					
DC Current Gain ($I_C = 5.0\text{ mA}$, $V_{CE} = 10\text{ Vdc}$)	h_{FE}	25	—	—	—
Collector-Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 1.0\text{ mA}$)	$V_{CE(sat)}$	—	—	1.0	Vdc
SMALL SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product ($I_C = 50\text{ mA}$, $V_{CE} = 25\text{ Vdc}$, $f = 100\text{ MHz}$)	f_T	500	800	—	MHz
Output Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{obo}	—	—	4.0	pF
Input Capacitance ($V_{BE} = 3.0\text{ Vdc}$, $I_C = 0$, $f = 1.0\text{ MHz}$)	C_{ibo}	—	9.0	—	pF

FIGURE 1 – CURRENT-GAIN – BANDWIDTH PRODUCT

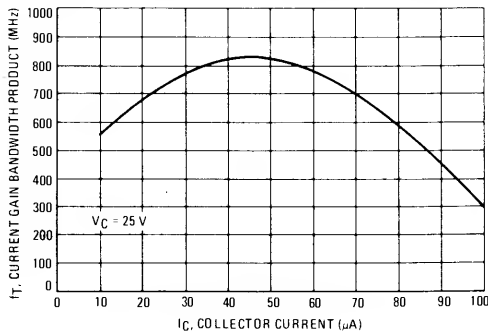


FIGURE 2 – INPUT CAPACITANCE

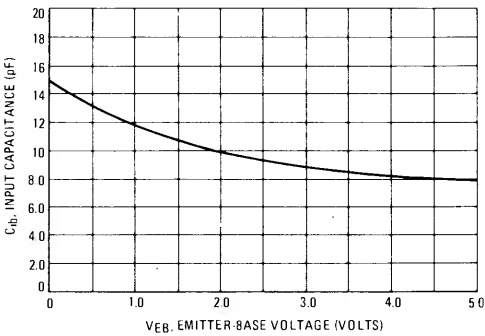


FIGURE 3 – OUTPUT CAPACITANCE

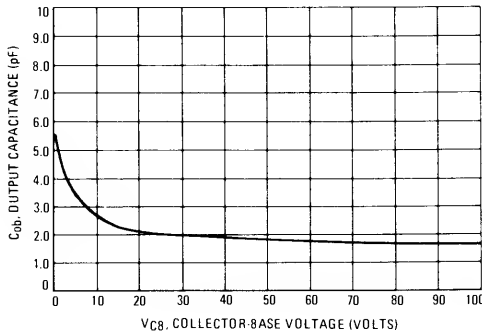


FIGURE 4 – DC SAFE OPERATING AREA

