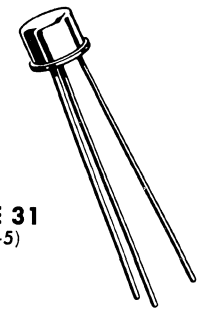
2N3137 (SILICON)
MM1803



CASE 31
(TO-5)

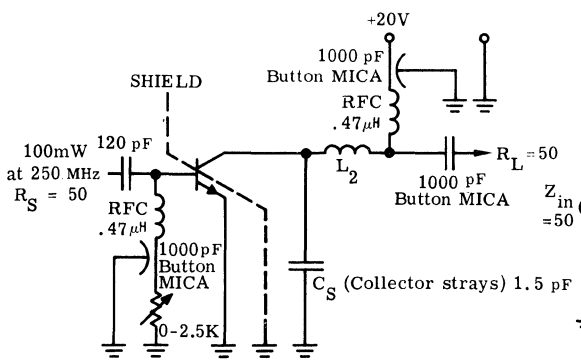
Collector connected to case

NPN silicon annular transistors for large signal VHF and UHF applications.

MAXIMUM RATINGS

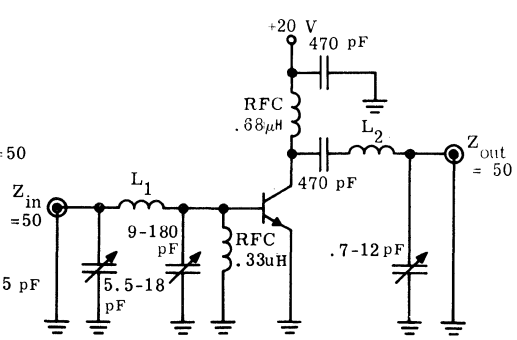
Rating	Symbol	2N3137	MM1803	Units
Collector-Base Voltage	V_{CB}	40	50	Vdc
Collector-Emitter Voltage	V_{CEO}	20	25	Vdc
Emitter-Base Voltage	V_{EB}	4.0	5.0	Vdc
Collector Current (Continuous)	I_C	150	150	mAdc
Power Dissipation @25° C Case Temperature @25° C Ambient Temperature	P_D	2.0 0.8		Watts
Operating Junction Temperature Storage Temperature Range	T_J, T_{stg}	-65 to +200		°C
Thermal Resistance Junction to Case	θ_{JC}	87.5		°C/ Watt
Thermal Resistance Junction to Ambient	θ_{JA}	153		°C/ Watt

250 MHz POWER GAIN TEST CIRCUIT (2N3137)



L_2 = .075 μH (5.5 turns #16ga. ID = 3/16" length 1/2")

250 MHz POWER GAIN TEST CIRCUIT (MM1803)



L_1 = 3/4 turn No. 14 tinned wire 3/8" ID
L_2 = 4 turns No. 18 tinned wire 1/4" ID 7/16" long

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

Characteristic		Symbol	Min	Typical	Max	Unit
Collector-Base Breakdown Voltage I_C = 0.1mAdc, I_E = 0	2N3137 MM1803	V_{CBO}	40 50			Vdc
Collector-Emitter Open Base Sus. Voltage I_C = 15mAdc, I_B = 0	2N3137 MM1803	$V_{CEO(sus)}$	20 25			Vdc
Collector Cutoff Current V_{CB} = 20Vdc, I_E = 0, T_C = +150°C		I_{CBO}			50	μAdc
Collector Cutoff Current V_{CB} = 20Vdc, I_E = 0		I_{CBO}			.05	μAdc
Emitter-Base Breakdown Voltage I_E = 100μA, I_C = 0	2N3137 MM1803	V_{EBO}	4.0 5.0			Vdc
DC Current Gain V_{CE} = 5Vdc, I_C = 50mAdc	2N3137 MM1803	h_{FE}	20 40		120 160	
Collector-Emitter Saturation Voltage I_C = 50mAdc, I_E = 5mAdc		$V_{CE(sat)}$			0.3	Vdc
Small Signal Current Gain V_{CE} = 10Vdc, I_C = 50mAdc, f = 100 MHz		$\|h_{fe}\|$	5.0			
Common-base Output Capacitance V_{CB} = 10Vdc, I_C = 0, f = 100 kHz		C_{ob}			3.5	pF
Power Output		P_{out}	400	600		mWatts
Power Gain P_{in} = 100mw, f = 250 MHz	2N3137	G_e	6.0	7.7		dB
Efficiency V_{CE} = 20Vdc		η	40	65		%
Power Output		P_{out}	560	700		mWatts
Power Gain P_{in} = 100mw, f = 250 MHz	MM1803	G_e	7.5	8.5		db
Efficiency V_{CE} = 20V		η	45	60		%

*Pulse Width ≈ 300 μs, Duty cycle = 1%