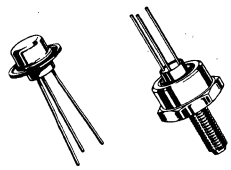
2N1561 (GERMANIUM)
2N1562
2N1692
2N1693



PNP germanium mesa transistors for VHF power amplifier applications.

CASE 23 (TO-107): 2N1561, 2N1562

CASE 24 (TO-102): 2N1692, 2N1693

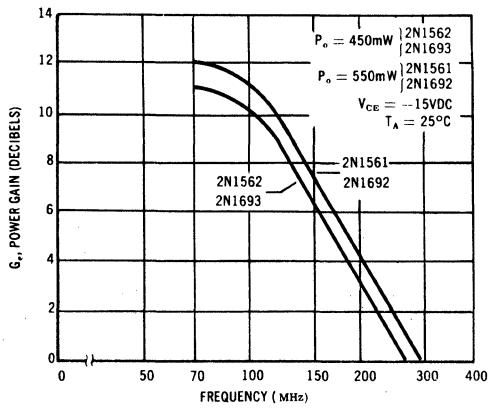
Collector connected to case; stud isolated from case

MAXIMUM RATINGS

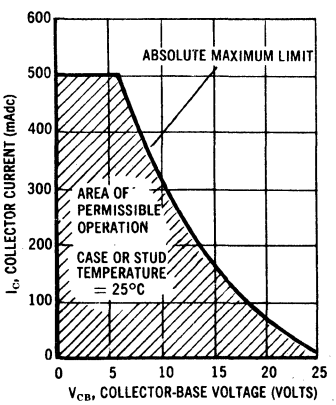
Rating	Symbol	2N1561	2N1562	2N1692	2N1693	Unit
Collector-Emitter Voltage	V_{CE}	25	25	25	25	Vdc
Collector-Base Voltage	V_{CB}	25	25	25	25	Vdc
Emitter-Base Voltage*	V_{EB}*	3.0	2.0	3.0	2.0	Vdc
Collector Current-Continuous Peak	I_C	250 500	250 500	250 500	250 500	mAdc
Total Device Dissipation @ $T_A = 25^oC$ Derate above 25^oC	P_D	250 3.33	250 3.33	350 4.67	350 4.67	mW $mW/^oC$
Total Device Dissipation @ $T_C = 25^oC$ Derate above 25^oC	P_D	3.0 40	3.0 40	3.0 40	3.0 40	Watts $mW/^oC$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to 100				^oC

*May be exceeded provided total rated device dissipation is not exceeded.

POWER GAIN versus FREQUENCY



SAFE OPERATING AREA

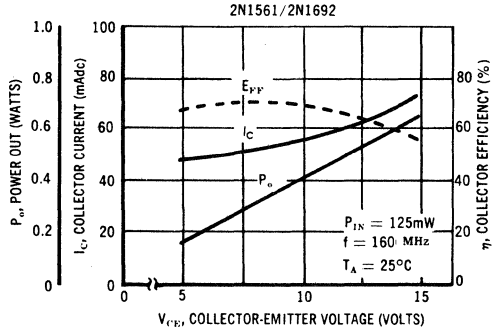


ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

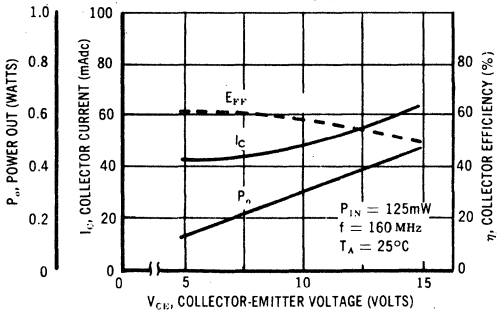
Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (I_C = 100 μAdc, V_{BE} = 0)		BV_{CES}	25	-	-	Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)		BV_{CBO}	25	-	-	Adc
Collector Cutoff Current (V_{CB} = 10 Vdc, I_E = 0)		I_{CBO}	-	1.5	10	μAdc
Emitter Cutoff Current (V_{BE} = 0.4 Vdc, I_C = 0)	2N1562, 2N1693	I_{EBO}	-	5.0	-	mAdc
(V_{BE} = 1.0 Vdc, I_C = 0)	2N1561, 2N1692		-	5.0	-	
ON CHARACTERISTICS						
Collector-Emitter Saturation Voltage (I_C = 200 mAdc, I_B = 40 mAdc)	2N1561, 2N1692	$V_{CE(sat)}$	-	-	3.0	Vdc
(I_C = 200 mAdc, I_B = 40 mAdc)	2N1562, 2N1693		-	-	4.0	
DYNAMIC CHARACTERISTICS						
Current-Gain — Bandwidth Product (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)	2N1561, 2N1692	f_T	-	500	-	MHz
(I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)	2N1562, 2N1693		-	450	-	
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)		C_{ob}	-	7.0	10	pF
Small-Signal Current Gain (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 160 MHz)	2N1561, 2N1692	h_{fe}	-	10	-	dB
	2N1562, 2N1693		-	9.0	-	
Extrinsic Base Resistance (I_E = 20 mAdc, V_{CB} = 10 Vdc, f = 300 MHz)		r'_b	-	25	-	Ohms
FUNCTIONAL TEST						
Power Gain (I_C = 100 mAdc, V_{CE} = 15 Vdc, P_{out} = 0.5 W, f = 160 MHz)	2N1561, 2N1692	G_{pe}	6.0	-	-	dB
(I_C = 100 mAdc, V_{CE} = 15 Vdc, P_{out} = 0.4 W, f = 160 MHz)	2N1562, 2N1693		5.0	-	-	
Power Output (I_C = 100 mAdc, V_{CE} = 15 Vdc, P_{in} = 125 mW, f = 160 MHz)	2N1561, 2N1692	P_{out}	0.5	-	-	Watt
	2N1562, 2N1693		0.4	-	-	

POWER OUT, COLLECTOR CURRENT AND COLLECTOR EFFICIENCY versus COLLECTOR-EMITTER VOLTAGE

2N1561/2N1692

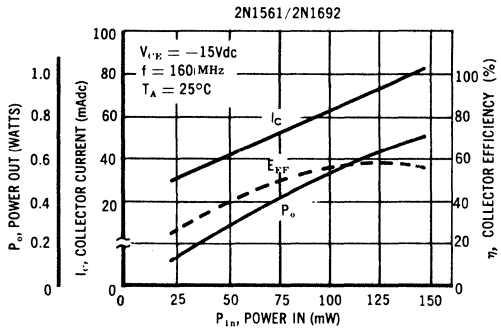


2N1562/2N1693

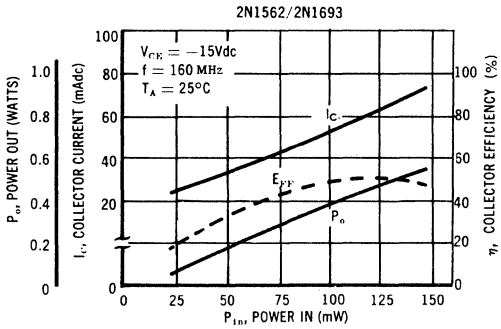


POWER OUT, COLLECTOR CURRENT AND COLLECTOR EFFICIENCY versus POWER IN

2N1561/2N1692

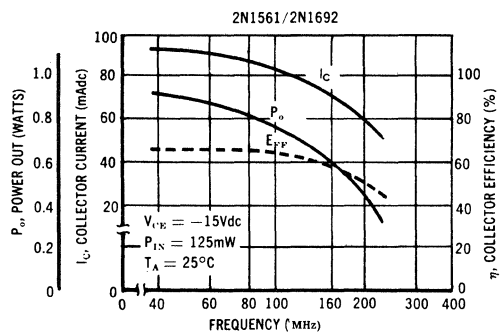


2N1562/2N1693



POWER OUT, COLLECTOR CURRENT AND COLLECTOR EFFICIENCY versus FREQUENCY

2N1561/2N1692



2N1562/2N1693