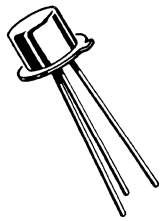
2N741, A (GERMANIUM)



CASE 22
(TO-18)

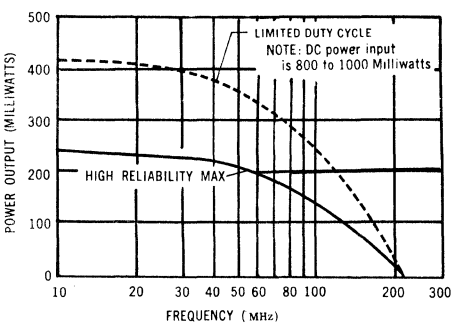
Collector connected to case

PNP germanium mesa transistors for oscillator, frequency multiplier and amplifier applications.

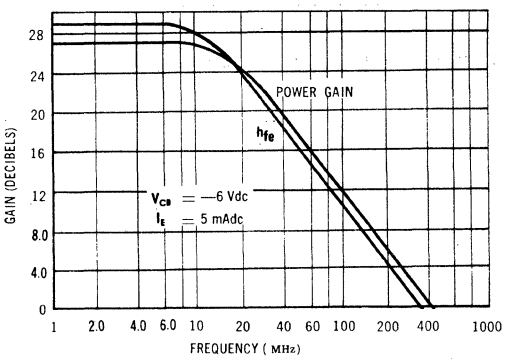
MAXIMUM RATINGS

Rating	Symbol	2N741	2N741A	Unit
Collector-Emitter Voltage	V_{CE}	15	20	Vdc
Collector-Base Voltage	V_{CB}	15	20	Vdc
Emitter-Base Voltage	V_{EB}	1.0		Vdc
Collector Current	I_C	100		mAdc
Total Device Dissipation @ $T_A = 25^oC$ Derate above 25^oC	P_D	150 2.0		mW $mW/^oC$
Total Device Dissipation @ $T_C = 25^oC$ Derate above 25^oC	P_D	300 4.0		mW $mW/^oC$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +100		^oC

POWER OUTPUT versus FREQUENCY, CLASS C AMPLIFIER



POWER GAIN AND COMMON EMITTER CURRENT GAIN versus FREQUENCY



2N741,A (continued)

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

Characteristic		Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS						
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	2N741	BV_{CBO}	15	-	-	Vdc
	2N741A		20	-	-	
Emitter-Base Breakdown Voltage (I_E = 100 μAdc, I_C = 0)		BV_{EBO}	1.0	-	-	Vdc
Collector Cutoff Current (V_{CE} = 15 Vdc, V_{BE} = 0)	2N741	I_{CES}	-	-	100	μAdc
(V_{CE} = 20 Vdc, V_{BE} = 0)	2N741A		-	-	100	
Collector Cutoff Current (V_{CB} = 6 Vdc, I_E = 0)		I_{CBO}	-	0.2	**3.0**	μAdc
ON CHARACTERISTICS						
DC Current Gain (I_C = 5 mAdc, V_{CE} = 6 Vdc)		h_{FE}	10	25	-	-
SMALL-SIGNAL CHARACTERISTICS						
Current-Gain — Bandwidth Product (I_E = 5 mAdc, V_{CB} = 6 Vdc, f = 100 MHz)	2N741	f_T	-	360	-	MHz
	2N741A		300	360	-	
Output Capacitance (V_{CB} = 6 Vdc, I_E = 0, f = 100 kHz)		C_{ob}	-	6.0	10	pF
Collector Capacitance (V_{CB} = 6 Vdc, I_E = 0, f = 100 kHz)		C_c	-	**3.0**	-	pF
Small-Signal Current Gain (I_C = 5 mAdc, V_{CE} = 6 Vdc, f = 1 kHz)		h_{fe}	20	-	-	-
Output Admittance (I_E = 5 mAdc, V_{CB} = 6 Vdc, f = 1 kHz)		h_{ob}	-	45	-	μmhos
Input Impedance (I_E = 5 mAdc, V_{CB} = 6 Vdc, f = 1 kHz)		h_{ib}	-	**8.0**	15	Ohms
Base Resistance (I_E = 5 mAdc, V_{CB} = 6 Vdc, f = 300 MHz)	2N741	r'_b	-	75	-	Ohms
	2N741A		-	65	-	
Noise Figure (I_E = 5 mAdc, V_{CB} = 6 Vdc, f = 30 MHz)		NF	-	7.0	-	dB
Power Gain, Matched, Neutralized (V_{CB} = 6 Vdc, I_E = 5 mAdc, f = 30 MHz)		G_{pe}	16	22	-	dB
Power Output (I_C = 60 mAdc, V_{CB} = 6 Vdc,		P_{out}	-	200	-	mW
G_{pe} = 8 dB, f = 30 MHz)			-	250	-	
Power Output (I_C = 60 mAdc, V_{CB} = 6 Vdc, G_{pe} = 5 dB, f = 70 MHz)		P_{out}	-	200	-	mW