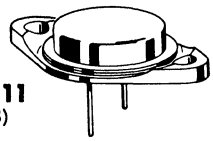
2N242 (GERMANIUM)

2N307, A



CASE 11
(TO-3)

PNP germanium power transistors for general purpose power amplifier and switching applications.

MAXIMUM RATINGS

Rating	Symbol	2N242	2N307, 307A	Unit
Collector-Base Voltage	V_{CB}	45	35	Volts
Collector-Emitter Voltage (R_{BE} = 30 Ω)	V_{CER}	45	—	Volts
Collector-Emitter Voltage	V_{CEO}	—	35	Volts
Emitter-Base Voltage	V_{EB}	—	10	Volts
Collector Current	I_C	5.0	5.0	Amp
Junction Temperature Range	T_J	-65 to +110	-65 to +110	°C
Collector Dissipation (at T_C = 25°C)	P_D	106	106	Watts

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

Characteristic		Symbol	Min	Max	Unit
Collector-Base Cutoff Current		I_{CBO}			mAdc
(V_{CB} = 2 Vdc)	2N307		—	0.5	
(V_{CB} = 25 Vdc)	2N307		—	5.0	
	2N307A		—	2.0	
(V_{CB} = 1 Vdc, I_E = 0, T_C = 85°C)	2N242		—	5.0	
Emitter-Base Cutoff Current		I_{EBO}			mAdc
(V_{EB} = 10 Vdc)			—	2.0	
Collector-Emitter Cutoff Current		I_{CER}			mAdc
(V_{CE} = 45 Vdc, R_{BE} = 30 Ω)	2N242		—	5.0	
(V_{CE} = 25 Vdc, R_{BE} = 30 Ω)	2N242		—	1.0	
(V_{CE} = 35 Vdc, R_{BE} = 30 Ω)	2N307		—	15	
	2N307A		—	7.0	
Base-Emitter Voltage		V_{BE}			Vdc
(V_{CE} = 1.5 Vdc, I_C = 1.0 Adc)	2N242		0.3	0.8	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			Vdc
(I_C = 2.0 Adc, I_B = 200 mAdc)	2N242		—	0.8	
(I_C = 0.2 Adc, I_B = 20 mAdc)	2N307		—	1.0	
(I_C = 1.0 Adc, I_B = 100 mAdc)	2N307A		—	0.8	
DC Current Gain		h_{FE}			—
(V_{CE} = 12 Vdc, I_C = 500 mAdc)	2N242		30	120	
(V_{CE} = 1 Vdc, I_C = 200 mAdc)	2N307		20	—	
	2N307A		30	—	
Common Emitter Cutoff Frequency		$f_{\alpha e}$			kHz
(V_{CE} = 12 V, I_C = 0.5 A)	2N242		5.0	—	
	2N307A		3.5	—	
(V_{CE} = 6 V, I_C = 1 A)	2N307		3.0	—	
Power Gain		G_e			dB
(I_C = 0.5 A, V_{CE} = -14 V, R_L = 30 Ω, R_g = 10 Ω)	2N242		30		