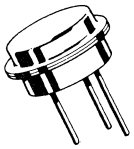
2N2912 (GERMANIUM)



CASE 8

PNP high-speed, high-frequency power transistor especially designed for switching and power converter circuits operating from low-voltage power sources such as solar cells, thermo-electric generators, sea cells, fuel cells and 1.5 volt batteries.

MAXIMUM RATINGS

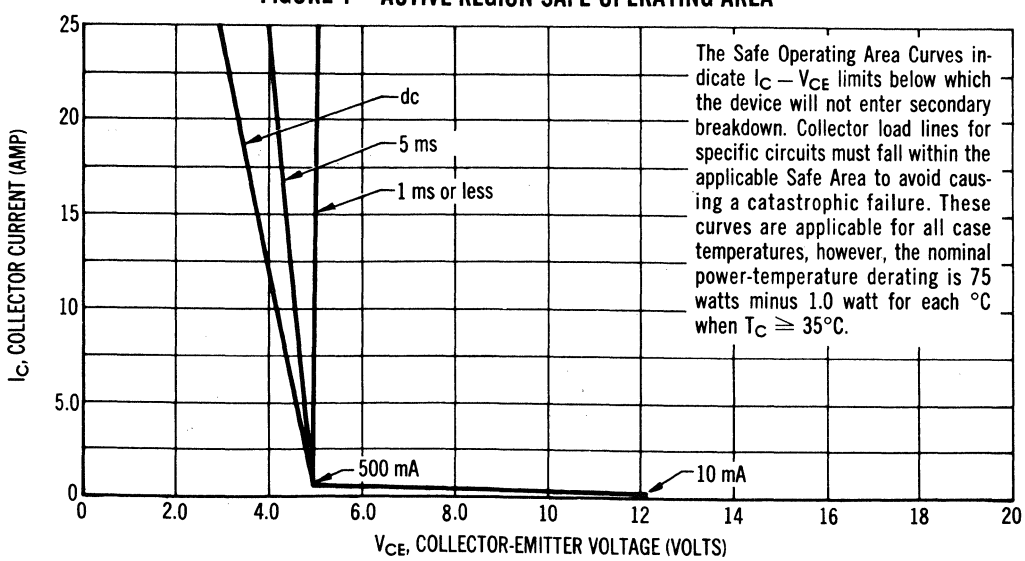
Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	5.0	Vdc
Collector-Base Voltage	V_{CB}	15	Vdc
Emitter-Base Voltage	V_{EB}	1.5	Vdc
Collector Current-Continuous	I_C	25	Adc
Base Current-Continuous	I_B	3.0	Adc
Total Device Dissipation @ T_C = 35°C Derate above 35°C	P_D	75 1.0	Watts W/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +110	°C

Lead temperature 1/16" from case for 10 seconds = 240°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	1.0	°C/W
Thermal Resistance, Case to Ambient	θ_{CA}	30	°C/W

FIGURE 1 — ACTIVE-REGION SAFE OPERATING AREA



2N2912 (continued)

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

Characteristic	Fig. No.	Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage* (I_C = 500 mAdc, I_B = 0)		BV_{CEO}*	5.0	—	Vdc
Collector-Emitter Sustaining Voltage* (I_C = 500 mAdc, I_B = 0)		$BV_{CEO(sus)}$*	5.0	—	Vdc
Collector Cutoff Current (V_{CE} = 15 Vdc, V_{BE} = 0)		I_{CES}	—	10	mAdc
Collector Cutoff Current (V_{CE} = 15 Vdc, R_{BE} = 5.0 ohms)		I_{CER}	—	10	mAdc
Collector Cutoff Current (V_{CE} = 15 Vdc, $V_{BE(off)}$ = 0.2 Vdc) (V_{CE} = 5.0 Vdc, $V_{EB(off)}$ = 0.2 Vdc, T_C = 85°C)		I_{CEX}	— —	10 15	mAdc
Collector Cutoff Current (V_{CB} = 15 Vdc, I_E = 0)		I_{CBO}	—	10	mAdc
Emitter Cutoff Current (V_{BE} = 1.5 Vdc, I_C = 0)		I_{EBO}	—	50	mAdc
ON CHARACTERISTICS					
DC Current Gain (I_C = 10 Adc, V_{CE} = 2.0 Vdc) (I_C = 5.0 Adc, V_{CE} = 2.0 Vdc)	2	h_{FE}	150 200	— 800	—
Collector-Emitter Saturation Voltage (I_C = 5.0 Adc, I_B = 0.5 Adc) (I_C = 25 Adc, I_B = 2.5 Adc)	2	$V_{CE(sat)}$	— —	0.12 0.5	Vdc
Base-Emitter Saturation Voltage (I_C = 5.0 Adc, I_B = 0.5 Adc) (I_C = 25 Adc, I_B = 2.5 Adc)		$V_{BE(sat)}$	— —	0.5 1.2	Vdc
DYNAMIC CHARACTERISTICS					
Current-Gain — Bandwidth Product (I_C = 5.0 Adc, V_{CE} = 2.0 Vdc, f = 1.0 MHz)		f_T	10	—	MHz
Rise Time (V_{CC} = 10 Vdc, I_C = 5.0 Adc)	3	t_r	—	2.0	μs
Storage Time (V_{CC} = 10 Vdc, I_C = 5.0 Adc)	3	t_s	—	10	μs
Fall Time (V_{CC} = 10 Vdc, I_C = 5.0 Adc)	3	t_f	—	2.0	μs

*Sweep Test: 1/2 Cycle sine wave, 60 Hz

FIGURE 2 — TYPICAL COLLECTOR CHARACTERISTICS

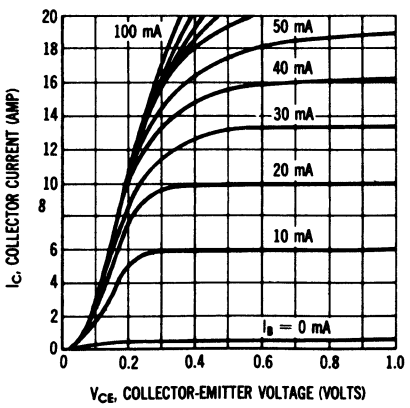


FIGURE 3 — SWITCHING-TIME TEST CIRCUIT