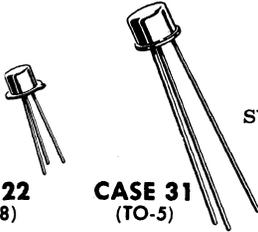


2N2800 (SILICON)
2N2801
2N2837
2N2838



PNP silicon annular transistors for medium-speed switching applications.

CASE 22 (TO-18)
 2N2837
 2N2838

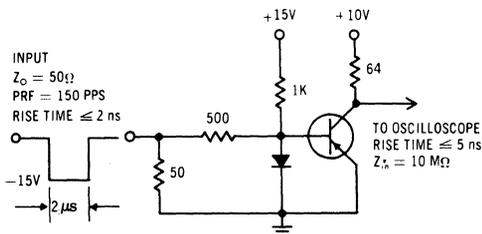
CASE 31 (TO-5)
 2N2800
 2N2801

Collector connected to case

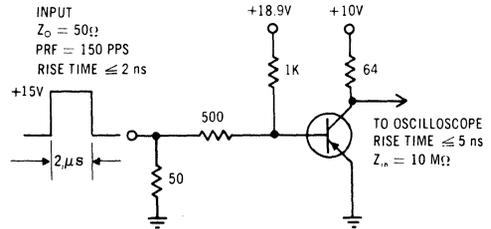
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB}	50	Vdc
Collector-Emitter Voltage	V_{CEO}	35	Vdc
Emitter-Base Voltage	V_{EB}	5.0	Vdc
Collector Current	I_C	800	mA
Total Device Dissipation @ 25°C Ambient Temperature 2N2800, 2N2801 – TO-5 Derating Factor Above 25°C	P_D	0.8	Watt
		4.57	mW/°C
2N2837, 2N2838 – TO-18 Derating Factor Above 25°C	P_D	0.5	Watt
		2.86	mW/°C
Total Device Dissipation @ 25°C Case Temperature 2N2800, 2N2801 – TO-5 Derating Factor Above 25°C	P_D	3.0	Watts
		17.3	mW/°C
2N2837, 2N2838 – TO-18 Derating Factor Above 25°C	P_D	1.8	Watts
		10.3	mW/°C
Junction Temperature, Operating	T_J	+200	°C
Storage Temperature	T_{stg}	-65 to +200	°C

DELAY AND RISE TIME TEST CIRCUIT



STORAGE AND FALL TIME TEST CIRCUIT



2N2800, 2N2801, 2N2837, 2N2838 (Continued)

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Collector-Base Breakdown Voltage ($I_C = 10 \mu\text{Adc}$, $I_E = 0$)	V_{CB0}	50	-	Vdc
Emitter-Base Breakdown Voltage ($I_E = 100 \mu\text{Adc}$, $I_C = 0$)	V_{EBO}	5.0	-	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 100 \text{ mAdc}$, $I_B = 0$)	V_{CEO}	35	-	Vdc
Collector Cutoff Current ($V_{CE} = 25 \text{ Vdc}$, $V_{BE} = 0.5 \text{ Vdc}$)	I_{CEX}	-	100	nAdc
Base Cutoff Current ($V_{CE} = 25 \text{ Vdc}$, $V_{BE} = 0.5 \text{ Vdc}$)	I_{BL}	-	100	nAdc
DC Forward Current Transfer Ratio ($I_C = 0.1 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) 2N2800, 2N2837 2N2801, 2N2838 ($I_C = 150 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) ⁽¹⁾ 2N2800, 2N2837 2N2801, 2N2838 ($I_C = 150 \text{ mAdc}$, $V_{CE} = 1 \text{ Vdc}$) ⁽¹⁾ 2N2800, 2N2837 2N2801, 2N2838 ($I_C = 500 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) ⁽¹⁾ 2N2800, 2N2837 2N2801, 2N2838	h_{FE}	20 30 30 75 15 30 25 40	- - 90 225 - - -	-
Collector Saturation Voltage ($I_C = 150 \text{ mAdc}$, $I_B = 15 \text{ mAdc}$) ($I_C = 500 \text{ mAdc}$, $I_B = 50 \text{ mAdc}$)	$V_{CE(sat)}$	- -	0.4 1.2	Vdc
Base-Emitter Saturation Voltage ($I_C = 150 \text{ mAdc}$, $I_B = 15 \text{ mAdc}$) ($I_C = 500 \text{ mAdc}$, $I_B = 50 \text{ mAdc}$)	$V_{BE(sat)}$	- -	1.3 1.8	Vdc
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $f = 100 \text{ kHz}$)	C_{ob}	-	25	pF
Current-Gain - Bandwidth Product ($I_C = 50 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 100 \text{ MHz}$)	f_T	120	-	MHz

SWITCHING CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Typical	Maximum	Unit
Delay Time	t_d	9	25	ns
Rise Time	t_r	25	45	ns
Storage Time	t_s	100	225	ns
Fall Time	t_f	30	45	ns

(1) Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$