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2N4928 thru 2N4931 (SILICON)



High-voltage PNP silicon annular transistors for use in general-purpose high-voltage applications.

(TO-39)

Collector connected to case

MAXIMUM RATINGS

Rating	Symbol	2N4928	2N4929	2N4930	2N4931	Unit
Collector-Emitter Voltage	V _{CEO}	100	150	200	250	Vdc
Collector-Base Voltage	v _{CB}	100	150	200	250	Vdc
Emitter-Base Voltage	v _{EB}	4.0	4.0	4.0	4.0	Vdc
Collector Current - Continuous	I _C	100	500	500	500	mAdc
Total Device Dissipation @ $T_A = 25^{\circ}C$ Derate above $25^{\circ}C$	P _D	0.6 3.4	1.0 5.71	1. 0 5. 71	1. 0 5. 71	Watt mW/°C
Total Device Dissipation @ $T_C = 25$ ° C Derate above 25° C	P _D	3. 0 17. 2	5. 0 28. 6	5. 0 28. 6	5. 0 28. 6	Watt mW/°C
Operating & Storage Junction Temperature Range	T _J , T _{stg}	-65 to +200				°C

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Quality Semi-Conductors

2N4928 thru 2N4931 (continued)

ELECTRICAL CHARACTERISTICS (TA = 25°C)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS			 -	
Collector-Emitter, Breakdown Voltage (1) (I _C = 10 mAdc, I _B = 0) 2N4928 2N4929 2N4930 2N4931	BV _{CEO}	100 150 200 250	- - -	Vde
Collector-Base Breakdown Voltage (I _E = 0, I _C = 100 μAdc) 2N4928 2N4929 2N4930 2N4931	вусво	100 150 200 250	- - -	Vdc
Emitter-Base Breakdown Voltage ($I_E = 100 \ \mu Adc, I_C = 0$)	BV _{EBO}	4.0	-	Vdc
Collector Cutoff Current ($V_{CB} = 50 \text{ Vdc. } I_{E} = 0$) 2N4928 ($V_{CB} = 75 \text{ Vdc. } I_{E} = 0$) 2N4929 ($V_{CB} = 150 \text{ Vdc. } I_{E} = 0$) 2N4930, 2N4931	I _{СВО}	-	0.5 0.5 1.0	μ A dc
Emitter Cutoff Current (V _{BE} = 3.0 Vdc, I _C = 0) (V _{BE} = 3.0 Vdc, I _C = 0) 2N4928, 2N4929 2N4930, 2N4931	I _{EBO}	-	0.5 1.0	μAdc
ON CHARACTERISTICS				
DC Current Gain ($I_C = 1.0 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) All Types ($I_C = 10 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) (10 2N4928, 2N4929 ($I_C = 10 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) (11 2N4930, 2N4931 ($I_C = 50 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) (12 2N4930, 2N4931 ($I_C = 30 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) (13 2N4930, 2N4931 ($I_C = 30 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) (14 2N4930, 2N4931	h _{FE}	20 25 20 20 20	- 200 200 - -	
Collector-Emitter Saturation Voltage (1) (I _C = 10 mAdc, I _B = 1.0 mAdc) 2N4928, 2N4929 2N4930, 2N4931	V _{CE(sat)}	-	0. 5 5. 0	Vdc
Base-Emitter On Voltage (IC = 10 mAdc, VCE = 10 Vdc)	V _{BE(on)}	-	1.0	Vdc
DYNAMIC CHARACTERISTICS				
Current-Gain-Gandwidth Product (I _C = 20 mAdc, V _{CE} = 20 Vdc, f = 100 MHz) 2N4928. 2N4929 (I _C = 20 mAdc, V _{CE} = 20 Vdc, f = 20 MHz) 2N4930. 2N4931	t _T	100	1,000 200	МН2
Collector-Base Capacitance (V _{CB} = 20 Vdc, I _E = 0, f = 140 kHz) 2N4928 (V _{CB} = 20 Vdc, I _E = 0, f = 140 kHz) 2N4929 (V _{CB} = 20 Vdc, I _E = 0, f = 140 kHz) 2N4930, 2N4931	^C cb	-	6, 0 10 20	pF
Emitter-Base Capacitance (V _{BE} = 2.0 Vdc, I _C = 0, f = 140 kHz) 2N4928 (V _{BE} = 1.0 Vdc, I _C = 0, f = 140 kHz) 2N4929 (V _{BE} = 0.5 Vdc, I _C = 0, f = 140 kHz) 2N4930, 2N4931	C _{eb}	-	40 80 400	pF

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