



NPN 2N2894

HIGH-SPEED SATURATED SWITCHES

The 2N2894 are silicon planar epitaxial PNP transistors mounted in TO-18 metal package. They are intended for high speed, low saturation switching applications up to 100 mA.

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	-12	V
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	-12	V
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)	-12	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	-4	V
I_C	Collector Current	-200	mA
P_D	Total Power Dissipation	@ $T_{amb} = 25^\circ$	0.36
		@ $T_{case} = 25^\circ$	1.2
		@ $T_{case} < 100^\circ$	1
T_J	Junction Temperature	-65 to +200	$^\circ\text{C}$
T_{Stg}	Storage Temperature range	-65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-a}	Thermal Resistance, Junction-ambient	486	$^\circ\text{C}/\text{W}$
R_{thJ-c}	Thermal Resistance, Junction-case	146	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS

TC=25 $^\circ\text{C}$ unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
I_{CBO}	Collector Cutoff Current	$V_{CB} = -6\text{ V}, I_E = 0\text{V}, T_J = 125^\circ\text{C}$	-	-	-10	μA
I_{CES}	Collector Cutoff Current	$V_{BE} = 0\text{ V}, V_{CE} = -6\text{ V}$	-	-	-80	nA
V_{CEO}^*	Collector Emitter Breakdown Voltage	$I_C = -10\text{ mA}, I_B = 0$	-12	-	-	V
V_{CES}	Collector Emitter Breakdown Voltage	$V_{BE} = 0\text{ V}, I_C = -10\text{ }\mu\text{A}$	-12	-	-	V
V_{CBO}	Collector Base Breakdown Voltage	$I_C = -10\text{ }\mu\text{A}, I_E = 0$	-12	-	-	V
V_{EBO}	Emitter Base Breakdown Voltage	$I_E = -100\text{ }\mu\text{A}, I_C = 0$	-4	-	-	V

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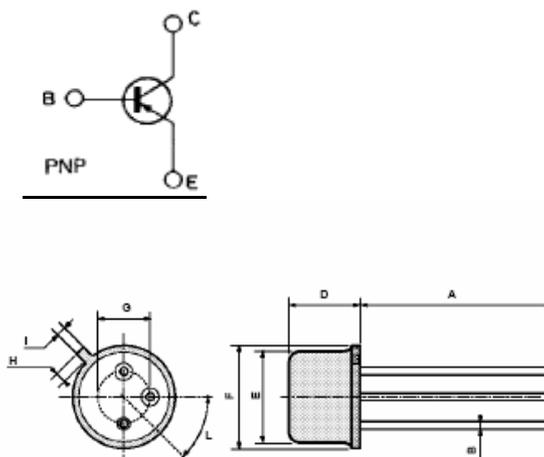
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$h_{FE} (*)$	DC Current Gain	$I_C = -10 \text{ mA}, V_{CE} = -0.3 \text{ V}$	30	-	-	-
		$I_C = -30 \text{ mA}, V_{CE} = -0.5 \text{ V}$	40	-	150	
		$I_C = -100 \text{ mA}, V_{CE} = -1 \text{ V}$	25	-	-	
		$I_C = 150 \text{ mA}, V_{CE} = 10 \text{ V}$ $T_{amb} = -55^\circ$	17	-	-	
$V_{CE(SAT)} (*)$	Collector-Emitter saturation Voltage	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$	-	-	-0.15	V
		$I_C = -30 \text{ mA}, I_B = -3 \text{ mA}$	-	-	-0.2	
		$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}$	-	-	-0.5	
$V_{BE(SAT)} (*)$	Base-Emitter saturation Voltage	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$	-0.78	-	-0.98	V
		$I_C = -30 \text{ mA}, I_B = -3 \text{ mA}$	-0.85	-	-1.2	
		$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}$	-	-	-1.7	

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
f_T	Transition frequency	$I_C = -30 \text{ mA}, V_{CE} = -10 \text{ V}$ $f = 100 \text{ MHz}$	400	-	-	MHz
C_{CBO}	Collector-Base Capacitance	$I_E = 0, V_{CB} = -5 \text{ V}$ $f = 1 \text{ MHz}$	-	-	6	pF
C_{EBO}	Emitter-Base Capacitance	$I_C = 0, V_{EB} = -0.5 \text{ V}$ $f = 1 \text{ MHz}$	-	-	6	pF
t_{on}	Turn-on Time	$I_C = -30 \text{ mA}, V_{CC} = -2 \text{ V}$ $I_{B1} = -1.5 \text{ mA}$	-	-	60	ns
t_{off}	Turn-off Time	$I_C = -30 \text{ mA}, V_{CC} = -2 \text{ V}$ $I_{B1} = -I_{B2} = -1.5 \text{ mA}$	-	-	90	

(*) Pulse conditions : $t_p < 300 \mu\text{s}, \delta = 1\%$

MECHANICAL DATA CASE TO-18

DIMENSIONS		
	mm	inches
A	12,7	0,5
B	0,49	0,019
D	5,3	0,208
E	4,9	0,193
F	5,8	0,228
G	2,54	0,1
H	1,2	0,047
I	1,16	0,045
L	45°	45°



Information furnished is believed to be accurate and reliable. However, CS assumes no responsibility for the consequences of use of such information nor for errors that could appear.

Data are subject to change without notice.