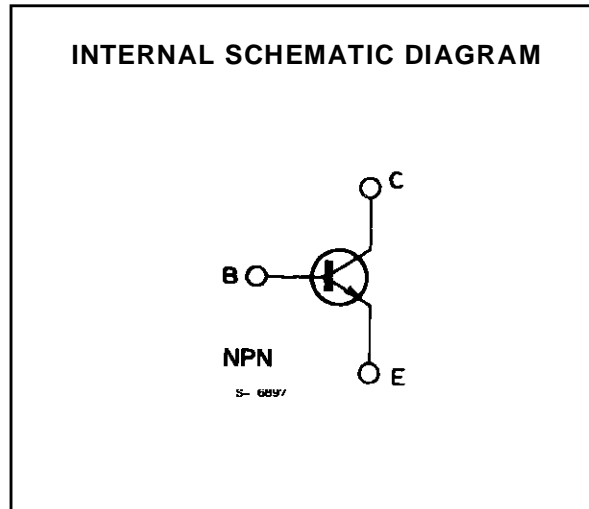
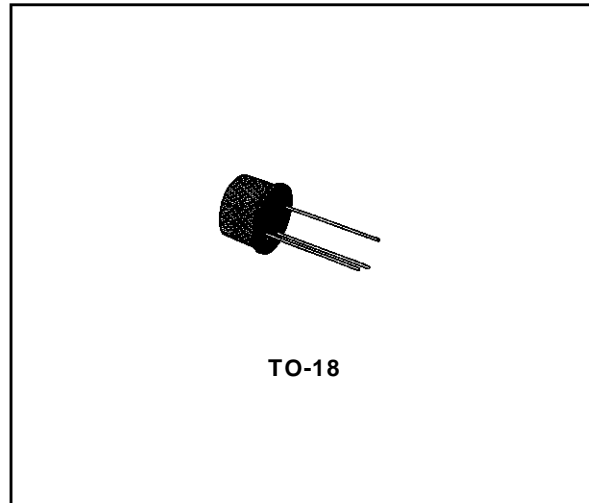


**HIGH-SPEED SATURATED SWITCH**

**DESCRIPTION**

The 2N708 is a silicon planar epitaxial NPN transistor in Jedec TO-18 metal case, designed for very fast switching applications.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	40	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	15	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	5	V
$I_C$	Collector Current	200	mA
$P_{tot}$	Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$	0.36	W
		1.2	W
$T_{stg}, T_g$	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

## THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	146	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	486	$^{\circ}C/W$

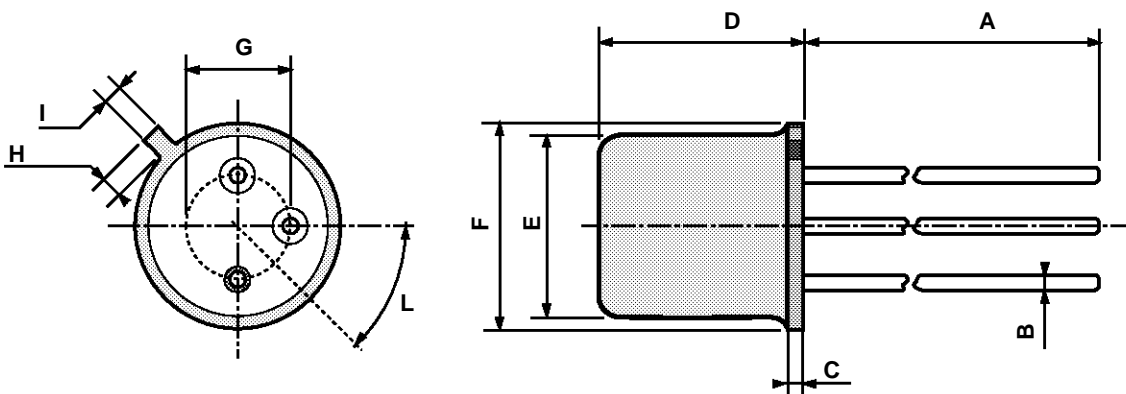
ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\ ^{\circ}C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cutoff Current ( $I_E = 0$ )	$V_{CB} = 20\ V$ $V_{CB} = 20\ V$ $T_{amb} = 150\ ^{\circ}C$			25 15	nA $\mu A$
$V_{(BR)CBO}$	Collector–base Breakdown Voltage ( $I_E = 0$ )	$I_C = 100\ \mu A$	40			V
$V_{(BR)CEO}^*$	Collector–emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = 10\ mA$	15			V
$V_{(BR)EBO}$	Emitter–base Breakdown Voltage ( $I_C = 0$ )	$I_E = 10\ \mu A$	5			V
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 4\ V$			100	nA
$V_{CE(sat)}^*$	Collector–emitter Saturation Voltage	$I_C = 10\ mA$ $I_B = 1\ mA$			0.4	V
$V_{BE(sat)}^*$	Base–emitter Saturation Voltage	$I_C = 10\ mA$ $I_B = 1\ mA$			0.9	V
$h_{FE}^*$	DC Current Gain	$I_C = 0.5\ mA$ $V_{CE} = 1\ V$ $I_C = 10\ mA$ $V_{CE} = 1\ V$ $T_{amb} = -55\ ^{\circ}C$ $I_C = 10\ mA$ $V_{CE} = 1\ V$	15 30 15		120	– – –
$h_{fe}$	High Frequency Current Gain	$I_C = 10\ mA$ $V_{CE} = 10\ V$ $f = 100\ MHz$	3			–
$C_{CBO}$	Collector–base Capacitance	$I_E = 0$ $V_{CB} = 10\ V$ $f = 1\ MHz$			6	pF
$t_s$	Storage Time	$I_C = 10\ mA$ $V_{CC} = 10\ V$ $I_{B1} = - I_{B2} = 10\ mA$			25	ns
$t_{on}$	Turn–on Time	$I_C = 10\ mA$ $V_{CC} = 10\ V$ $I_{B1} = 3\ mA$			40	ns
$t_{off}$	Turn–off Time	$I_C = 10\ mA$ $V_{CC} = 10\ V$ $I_{B1} = 3\ mA$ $I_{B2} = -1\ mA$			75	ns

\* Pulsed : pulse duration = 300  $\mu s$ , duty cycle = 1 %.

## TO-18 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		12.7			0.500	
B			0.49			0.019
D			5.3			0.208
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			1.16			0.045
L	45°			45°		



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