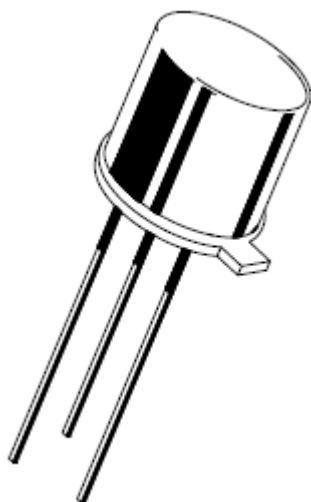


NPN Switching Transistor



TO-18

Features:

- High current (Maximum 600 mA)

Applications:

Designed for high speed switching application at collector current up to 0.5 A and feature useful current gain over a wide range of collector current, low leakage current and low saturation voltage

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - base voltage	60	V
V_{CEO}	Collector - emitter voltage	30	V
V_{EBO}	Emitter - base voltage	6	V
I_C	Collector current	0.8	A
P_{tot}	Total dissipation at $T_A = 25^\circ\text{C}$	0.5	W
	Total dissipation at $T_C = 25^\circ\text{C}$	1.8	W
T_J	Junction temperature	175	$^\circ\text{C}$
T_{stg}	Storage temperature	-65 to 200	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Maximum	Unit
$R_{th\ j-a}$	Thermal resistance, junction to ambient	300	$^\circ\text{C/W}$
$R_{th\ j-c}$	Thermal resistance, junction to case	83.3	$^\circ\text{C/W}$

NPN Switching Transistor



Electrical Characteristics ($T_C = 25^\circ\text{C}$ Unless Otherwise Specified)

Symbol	Parameter	Conditions	Minimum	Maximum	Unit
$V_{(BR) CBO}$	Collector - base breakdown voltage	$I_C = 10 \mu\text{A}; I_E = 0$	60	-	V
$V_{(BR) CEO}$	Collector - emitter Breakdown Voltage	$I_C = 10 \text{ mA}; I_E = 0$	30	-	V
$V_{(BR) EBO}$	Emitter - base breakdown voltage	$I_C = 10 \mu\text{A}; I_E = 0$	5	-	V
I_{CBO}	Collector cut off current	$V_{CE} = 50 \text{ V}; I_B = 0$	-	10	nA
I_{EBO}	Emitter cut off current	$V_{EB} = 3 \text{ V}; I_C = 0$	-	10	nA
$V_{CE (sat) 1}$	Collector - emitter saturation voltage	$I_C = 150 \text{ mA}; I_B = 15 \text{ mA}$	-	0.3	V
$V_{CE (sat) 2}$	Collector - emitter saturation voltage	$I_C = 500 \text{ mA}; I_B = 50 \text{ mA}$	-	1.6	V
$V_{BE (sat) 1}$	Base - emitter saturation voltage	$I_C = 150 \text{ mA}; I_B = 15 \text{ mA}$	-	1.3	V
$V_{BE (sat) 2}$	Base - emitter saturation voltage	$I_C = 500 \text{ mA}; I_B = 50 \text{ mA}$	-	2.6	V
H_{FE1}	DC current gain	$I_C = 0.5 \text{ A}; V_{CE} = 10 \text{ V}$	30	-	-
f_T	Transition frequency	$I_C = 20 \text{ mA}; V_{CE} = 20 \text{ V}; f = 100 \text{ MHz}$	250	-	MHz
C_{CBO}	Collector base capacitance	$I_C = 0; V_{EB} = 10 \text{ V}; f = 100 \text{ MHz}$	-	8	pF

Part Number Table

Description	Part Number
NPN Switching Transistor	2N2222

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