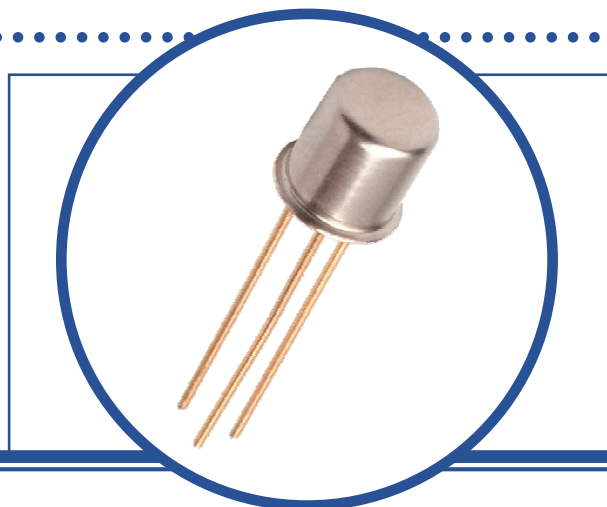


SILICON EPITAXIAL NPN TRANSISTOR

BC378

- Hermetic TO-18 Metal Package
- Designed For General Purpose Amplifiers, Driver Stages and Signal Processing Applications
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

V_{CES}	Collector – Emitter Voltage ($V_{EB} = 0V$)	30V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	25V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	6V
I_C	Collector Current	1.0A
I_B	Base Current	0.2A
P_D	Total Power Dissipation at $T_A \leq 25^\circ\text{C}$ $T_C \leq 75^\circ\text{C}$	375mW 1.0W
T_J	Junction Temperature Range	175°C
T_{stg}	Storage Temperature Range	-65 to +175°C

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient			400	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance, Junction To Case			100	$^\circ\text{C/W}$

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

SILICON EPITAXIAL NPN TRANSISTOR BC378

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
I_{CES}	Collector Cut off Current	$V_{BE} = 0\text{V}$ $V_{CE} = 30\text{V}$			15	nA
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 2\text{mA}$ $I_B = 0$	25			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	6			
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 500\text{mA}$ $I_B = 50\text{mA}$			1.2	
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 500\text{mA}$ $I_B = 50\text{mA}$			0.7	
$V_{BE}^{(1)}$	Base-Emitter Voltage	$I_C = 100\text{mA}$ $V_{CE} = 1.0\text{V}$		740		mV
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 100\text{mA}$ $V_{CE} = 1.0\text{V}$	75		260	-
		$I_C = 300\text{mA}$ $V_{CE} = 1.0\text{V}$	35			

DYNAMIC CHARACTERISTICS

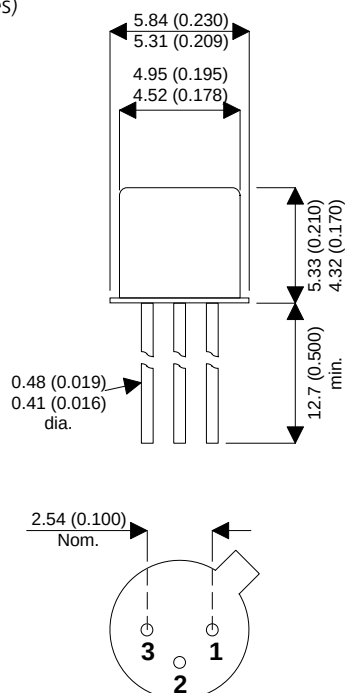
f_T	Transition Frequency	$I_C = 50\text{mA}$ $V_{CE} = 10\text{V}$		100		MHz
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$		10		pF
C_{ibo}	Input Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$		30		pF

Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

MECHANICAL DATA

Dimensions in mm (inches)



TO-18 (TO-206AA) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector