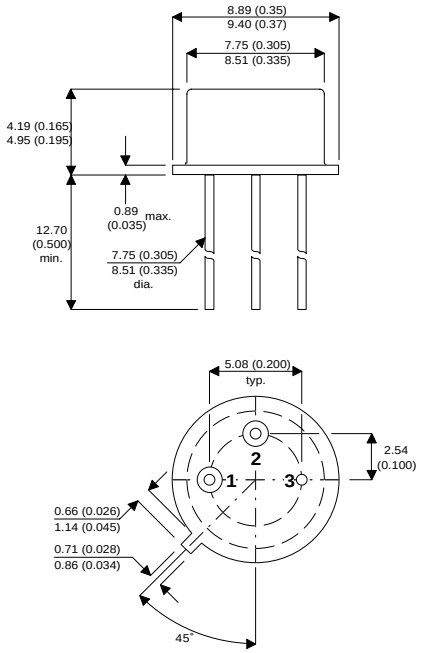
2N3053

MECHANICAL DATA
Dimensions in mm (inches)

MEDIUM POWER SILICON NPN PLANAR TRANSISTOR



TO39 PACKAGE

Underside View

Pin 1 = Emitter Pin 2 = Base Pin 3 = Collector

FEATURES

- V_{CEO} = 40V
- I_C = 0.7A
- P_{tot} = 5W

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage	60V
V_{CEO}	Collector – Emitter Voltage	40V
V_{CER}	Collector – Emitter Sustaining Voltage	50V
V_{CEX}	Collector - Emiiter Voltage	60V
V_{EBO}	Emitter-Base Voltage	5V
I_C	Collector Current	0.7A
P_{TOT}	Power Dissipation T_{amb} = 25°C	1W
	T_{case} = 25°C	5W
T_j	Junction Temperature	200°C
T_{stg}	Storage Temperature	–65 to 200°C
$R_{th(jc)}$	Thermal Resistance Junction to Case	35°C / W
$R_{th(ja)}$	Thermal Resistance Junction to Ambient	175°C / W

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ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
$V_{CEO(SUS)}$	Collector – Emitter Voltage	I_C = 100mA	I_B = 0	40			V
$V_{CER(SUS)}$*	Collector – Emitter Voltage	R_{BE} = 10Ω	I_C = 100mA	50			
$V_{(BR)CBO}$*	Collector – Base Breakdown Voltage	I_C = 0.1mA	I_E = 0	60			
$V_{(BR)EBO}$*	Emitter – Base Breakdown Voltage	I_E = 0.1mA	I_C = 0	5			
I_{CBO}	Collector – Base Cut-off Current	V_{CB} = 30V	I_E = 0			0.25	µA
I_{EBO}	Emitter - Base Cut-off Current	V_{EB} = 4V	I_C = 0			0.25	
$V_{CE(sat)}$*	Collector – Emitter Saturation Voltage	I_C = 0.15A	I_B = 0.015A			1.4	V
$V_{BE(sat)}$*	Base – Emitter Saturation Voltage	I_C = 0.15A	I_B = 0.015A			1.7	
h_{21E}*	Static Forward Current Transfer ratio	I_C = 0.15A	V_{CE} = 10V	50		250	—
f_T	Transistion Frequency	V_{CE} = 10V f = 100MHz	I_C = 0.05A	100			MHz
C_{22b}	Output Capacitance	V_{CB} = 10V	f =1MHz			15	pF
C_{11b}	Input Capacitance	V_{EB} = 10V	f =1MHz			80	

* Pulsed tp = 300µS $\delta \leq$ 2 %