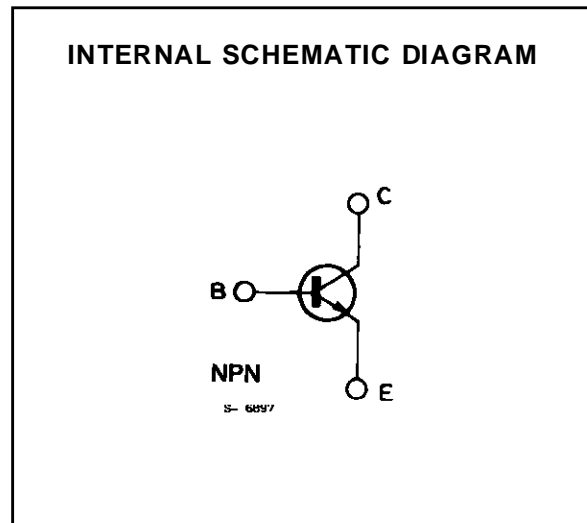
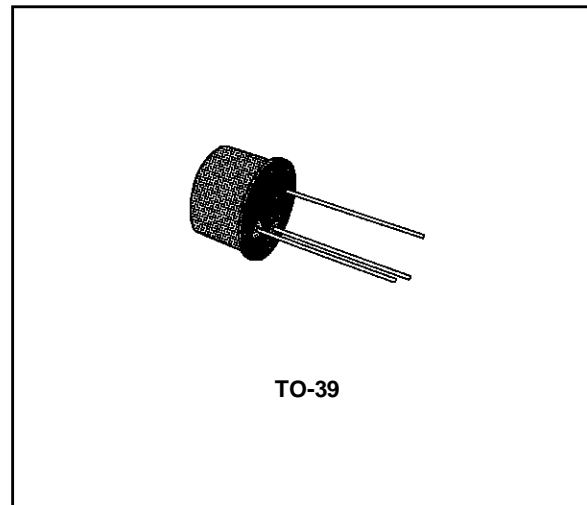


AMPLIFIERS AND SWITCH

DESCRIPTION

The 2N3053 is a silicon planar epitaxial NPN transistor in Jedec TO-39 metal case, intended for medium-current switching and amplifier applications.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	60	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	40	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	700	mA
P_{tot}	Total Power Dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$	5	W
T_{stg}, T_j	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	35	°C/W
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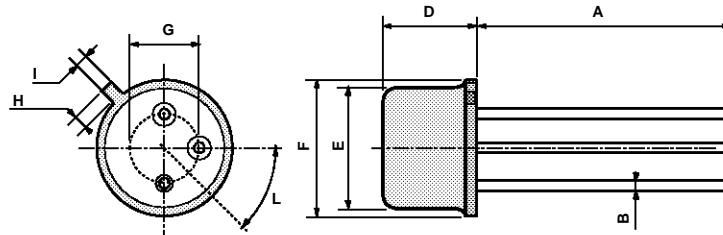
ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Collector Cutoff Current ($V_{BE} = -1.5\text{ V}$)	$V_{CE} = 60\text{ V}$			250	nA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 100\text{ }\mu\text{A}$	60			V
$V_{(BR)CEO}$	Collector-emitter Breakdown Voltage ($I_B = 0$)	$I_C = 100\text{ }\mu\text{A}$	40			V
$V_{(BR)CER}^*$	Collector-emitter Breakdown Voltage ($R_{BE} \leq 10\text{ }\Omega$)	$I_C = 10\text{ mA}$	50			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = 100\text{ }\mu\text{A}$	5			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 150\text{ mA}$ $I_B = 15\text{ mA}$			1.4	V
V_{BE}^*	Base-emitter Voltage	$I_C = 150\text{ mA}$ $V_{CE} = 2.5\text{ V}$			1.7	V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 150\text{ mA}$ $I_B = 15\text{ mA}$			1.7	V
h_{FE}^*	DC Current Gain	$I_C = 150\text{ mA}$ $V_{CE} = 2.5\text{ V}$ $I_C = 150\text{ mA}$ $V_{CE} = 10\text{ V}$	25 50		250	
f_T	Transition Frequency	$I_C = 50\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 20\text{ MHz}$		100		MHz
C_{EBO}	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = 0.5\text{ V}$ $f = 1\text{ MHz}$			80	pF
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10\text{ V}$ $f = 1\text{ MHz}$			15	pF

* Pulse : pulse duration = 300 μs , duty cycle = 1 %.

TO39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



P008B

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