



Micro Commercial Components

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2N3053

**Medium Power
 Silicon NPN
 Planar Transistor**

Features

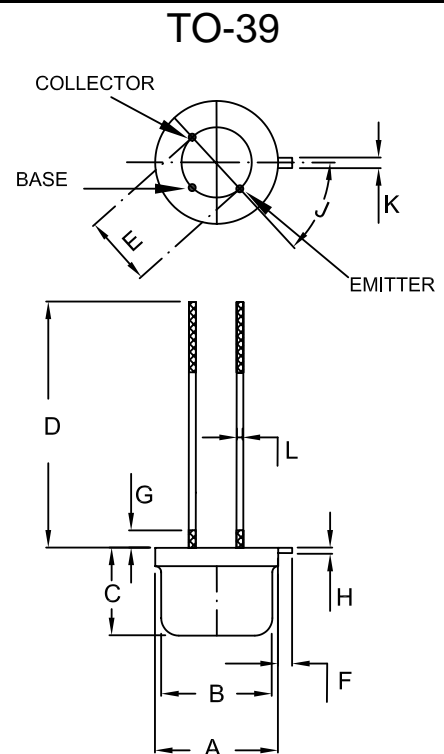
- $V_{CE0}=40V$
- $I_C=0.7A$
- $P_{tot}=1.0W$
- $R_{th(jc)}$ is $35^{\circ}C/W$, $R_{th(ja)}$ is $175^{\circ}C/W$
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)

Maximum Ratings

Symbol	Rating	Rating	Unit
V_{CE0}	Collector-Emitter Voltage	40	V
V_{CBO}	Collector-Base Breakdown Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current	700	mA
T_J	Operating Junction Temperature	-55 to +150	$^{\circ}C$
T_{STG}	Storage Temperature	-55 to +150	$^{\circ}C$

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{CE0(SUS)}$	Collector-Emitter Voltage* ($I_C=100\mu A$, $I_B=0$)	40	---	Vdc
$V_{CER(SUS)}$	Collector-Emitter Voltage* ($R_{BE}=10\text{ OHM}$, $I_C=10\text{mA}$)	50	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=0.1\text{mA}$, $I_E=0$)	60	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C=0.1\text{mA}$, $I_C=0$)	5.0	---	Vdc
I_{CBO}	Collector-Base Cutoff Current ($V_{CB}=30\text{Vdc}$, $I_E=0$)	---	0.25	μA
I_{EBO}	Emitter-Base Cutoff Current ($V_{EB}=4.0\text{Vdc}$, $I_C=0$)	---	0.25	μA
ON CHARACTERISTICS				
h_{FE}	Static Forward Current Transfer ratio ($I_C=0.15\text{A}$, $V_{CE}=10\text{Vdc}$)	50	250	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=150\text{mA}$, $I_B=15\text{mA}$)	---	1.4	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=150\text{mA}$, $I_B=15\text{mA}$)	---	1.7	Vdc
f_T	Transition Frequency ($V_{CE}=10\text{Vdc}$, $I_C=0.05\text{A}$, $f=20\text{MHz}$)	100	---	MHz
C_{OBO}	Output Capacitance ($V_{CB}=10\text{Vdc}$, $f=1.0\text{MHz}$)	---	15	pF
C_{IBO}	Input Capacitance ($V_{EB}=10\text{Vdc}$, $f=1.0\text{MHz}$)	---	80	pF



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.335	.370	8.509	9.40	Φ
B	.305	.335	7.747	8.509	Φ
C	.240	.260	6.096	6.604	
D	.50	.75	12.7	19.05	
E	.200		5.08		Φ TYP
F	.029	.045	7.366	11.43	
G	----	.050	----	1.27	
H	.009	.031	0.229	7.874	
J	44°	46°	44°	46°	
K	.028	.034	0.711	0.864	
L	.016	.021	0.406	0.533	

Notes:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.



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Ordering Information

Device	Packing
(Part Number)-BP	Bulk;50pcs/Box

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