

NPN Silicon Power Transistors

Features

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Low $V_{CE(SAT)}$; $V_{CE(SAT)}=1.5V(\text{Max.})@I_C=1.5A$
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Halogen free available upon request by adding suffix "-HF"

Maximum Ratings

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	100	V
V_{CBO}	Collector-Base Voltage	100	V
V_{EBO}	Emitter-Base Voltage	8.0	V
I_C	Collector Current-Continuous	3.0	A
I_{CM}	Collector Current-Peak	5.0	A
I_B	Base Current-Continuous	0.3	A
P_C	Collector power dissipation $T_A=25^\circ\text{C}$ $T_C=25^\circ\text{C}$	2.0 20	W W
T_J	Junction Temperature	-55 to +150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 to +150	$^\circ\text{C}$

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Typ	Max	Units
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OFF CHARACTERISTICS

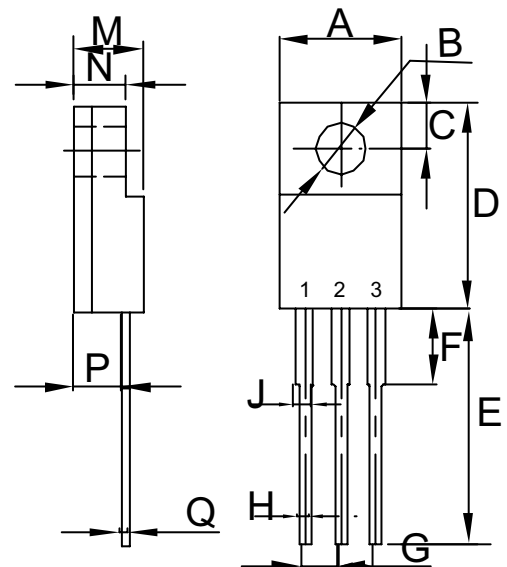
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=10\text{mAdc}$, $I_B=0$)	100	---	---	Vdc
I_{CBO}	Collector-Base Cutoff Current ($V_{CB}=100\text{Vdc}$, $I_E=0$)	---	---	10	μAdc
I_{EBO}	Emitter-Base Cutoff Current ($V_{EB}=8.0\text{Vdc}$, $I_C=0$)	---	---	4.0	mAdc

ON CHARACTERISTICS

$h_{FE(1)}$	DC Current Gain ($I_C=1.0\text{Adc}$, $V_{CE}=2.0\text{Vdc}$)	2000	---	---	---	
$h_{FE(2)}$	DC Current Gain ($I_C=2.0\text{Adc}$, $V_{CE}=2.0\text{Vdc}$)	2000	---	---	---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=1.5\text{Adc}$, $I_B=1.5\text{mAdc}$)	---	---	1.5	Vdc	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=1.5\text{Adc}$, $I_B=1.5\text{mAdc}$)	---	---	2.0	Vdc	
V_{ECF}	C-E Diode Forward Voltage ($I_F=1.0\text{Adc}$)	---	---	2.0	Vdc	
t_{on}	Turn-on Time	$I_{B1}=I_{B2}=1.5\text{mA};$ $R_L=20\Omega; V_{CC}\approx 30V$ $P_W=20\mu s;$ Duty Cycle $\leq 1\%$	---	0.5	---	μs
t_f	Fall time		---	0.5	---	μs
t_{stg}	Storage time		---	2.0	---	μs

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

TO-220F



PIN 1. BASE
PIN 2. COLLECTOR
PIN 3. EMITTER

DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.392	.408	9.96	10.36	
B	.138		3.50		Φ
C	.106		2.70		
D	.583	.598	14.80	15.20	
E	.520		13.20		
F	.142	.158	3.60	4.00	
G	.100		2.54		
H	.020	.035	0.50	0.90	
J	.043	.053	1.10	1.35	
M	.169	.185	4.30	4.70	
N	.104	.126	2.65	3.20	
P	.087	.114	2.20	2.90	
Q	.020	.030	0.50	0.75	



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Ordering Information :

Device	Packing
Part Number-BP	Bulk;5Kpcs/Box

Note : Adding "-HF" suffix for halogen free, eg. Part Number-BP-HF

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