



Micro Commercial Components



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2SD1691-O

2SD1691-Y

2SD1691-G

NPN

**Plastic-Encapsulate
Transistors**

Features

- Low Collector-Emitter Saturation Voltage
- Large Collector Current
- High Power Dissipation
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

Maximum Ratings

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	60	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7.0	V
I_C	Collector Current	5.0	A
P_C	Collector Power Dissipation ($T_a = 25^\circ\text{C}$)	1.3	W
	Collector Power Dissipation ($T_C = 25^\circ\text{C}$)	20	W
T_J	Junction Temperature	-55 to +150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 to +150	$^\circ\text{C}$

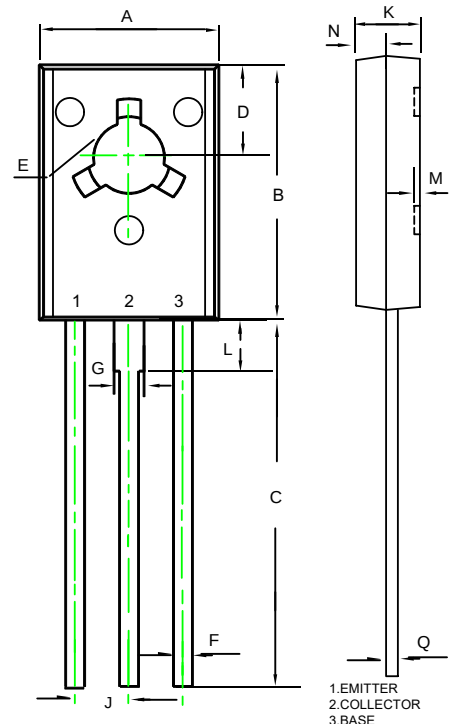
Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=100\text{mA}$, $I_E=0$)	60	---	Vdc
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=1.0\text{mA}$, $I_B=0$)	60	---	Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=100\text{mA}$, $I_C=0$)	7	---	Vdc
I_{CBO}	Collector-Base Cutoff Current ($V_{CB}=50\text{Vdc}$, $I_E=0$)	---	10	μA
I_{EBO}	Emitter-Base Cutoff Current ($V_{EB}=7.0\text{Vdc}$, $I_C=0$)	---	10	μA
h_{FE-1}	DC Current Gain ($I_C=2.0\text{A}$, $V_{CE}=1.0\text{Vdc}$)	100	400	
h_{FE-2}	DC Current Gain ($I_C=0.1\text{A}$, $V_{CE}=1.0\text{Vdc}$)	60	---	
h_{FE-3}	DC Current Gain ($I_C=5.0\text{A}$, $V_{CE}=1.0\text{Vdc}$)	50	---	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage $I_C=2.0\text{A}$, $I_B=0.2\text{A}$	---	0.3	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage $I_C=2.0\text{A}$, $I_B=0.2\text{A}$	---	1.2	Vdc
t_{on}	Turn ON Time	$V_{CC} = 10\text{V}$, $I_C = 2\text{A}$, $I_{B1} = -I_{B2} = 0.2\text{A}$, $R_L = 5\Omega$		
t_{stg}	Storage Time			
t_f	Fall Time			

CLASSIFICATION OF $h_{FE(1)}$

RANK	O	Y	G
RANGE	100-200	160-320	200-400

TO-18



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.291	0.307	7.40	7.80	
B	0.417	0.433	10.60	11.00	
C	0.602	0.618	15.30	15.70	
D	0.154	0.161	3.90	4.10	
E	0.118	0.126	3.00	3.20	
F	0.026	0.034	0.66	0.86	
G	0.046	0.054	1.17	1.37	
J	0.090TYP		2.290TYP		
K	0.098	0.114	2.50	2.90	
L	0.083	0.091	2.10	2.30	
M	0.000	0.012	0.00	0.30	
N	0.043	0.059	1.10	1.50	
Q	0.018	0.024	0.45	0.60	

www.mccsemi.com



Ordering Information :

Device	Packing
Part Number-BP	Bulk; 1Kpcs/Box

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

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