

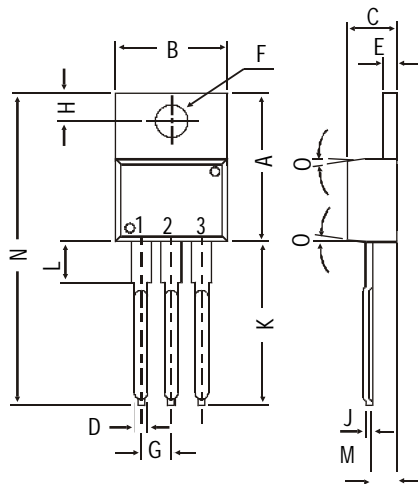
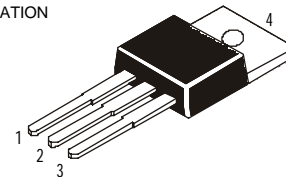
TO-220 Plastic Package

CSC3968

CSC3968 NPN PLASTIC POWER TRANSISTOR
High Voltage Switching Applications

PIN CONFIGURATION

1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR



All dimensions in mm.

DIM	MIN.	MAX.
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D		0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J		0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N		31.24
O	DEG 7	

ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)

V_{CBO} max. 400 V

Collector-emitter voltage (open base)

V_{CEO} max. 400 V

Collector current (D.C.)

I_C max. 2.0 A

Total power dissipation up to $T_C = 25^\circ\text{C}$

P_{tot} max. 20 W

Junction temperature

T_j max. 150 °C

Collector-emitter saturation voltage

$I_C = 1\text{A}; I_B = 0.2\text{A}$

V_{CEsat} max. 1.0 V

D.C. current gain

$I_C = 0.1\text{A}; V_{CE} = 5\text{V}$

h_{FE} min. 16

max. 50

RATINGS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Limiting values

Collector-base voltage (open emitter)

V_{CBO} max. 400 V

Collector-emitter voltage (open base)

V_{CEO} max. 400 V

Emitter-base voltage (open collector)

V_{EBO} max. 7.0 V

Collector current (DC)

I_C max. 2.0 A

Collector current (Pulse) (1)

I_C max. 4.0 A

CSC3968

Total power dissipation up to $T_C = 25^\circ\text{C}$
 Total power dissipation up to $T_A = 25^\circ\text{C}$
 Junction temperature
 Storage temperature

P_{tot}	max.	20 W
P_{tot}	max.	1.5 W
T_j	max.	150 °C
T_{stg}		-65 to +150 °C

CHARACTERISTICS

$T_{amb} = 25^\circ\text{C}$ unless otherwise specified

Collector cutoff current

$I_E = 0$; $V_{CB} = 400\text{V}$

I_{CBO}	max.	10 μA
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Emitter cut-off current

$I_C = 0$; $V_{EB} = 7\text{V}$

I_{EBO}	max.	10 μA
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Breakdown voltages

$I_C = 1\text{ mA}$; $I_B = 0$

V_{CEO}	min.	400 V
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$I_C = 50\text{ }\mu\text{A}$; $I_E = 0$

V_{CBO}	min.	400 V
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$I_E = 50\text{ }\mu\text{A}$; $I_C = 0$

V_{EBO}	min.	7.0 V
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Saturation voltages

$I_C = 1\text{ A}$; $I_B = 0.2\text{ A}$

V_{CEsat}^*	max.	1.0 V
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V_{BEsat}^*	max.	1.5 V
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D.C. current gain

$I_C = 0.1\text{A}$; $V_{CE} = 5\text{V}^{**}$

h_{FE}	min.	16
	max.	50

Output capacitance at $f = 1\text{ MHz}$

$I_E = 0$; $V_{CB} = 10\text{V}$

C_o	typ.	30 pF
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Transition frequency

$I_C = 0.5\text{A}$; $V_{CE} = 10\text{V}$; $f = 5\text{ MHz}$

f_T^*	typ.	10 MHz
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Switching time

$I_C = 0.8\text{A}$; $R_L = 250\Omega$

$I_{B1} = -I_{B2} = 0.08\text{A}$

$V_{CC} = 200\text{V}$

Turn on time

t_{on}	max.	1.0 μs
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Storage time

t_s	max.	2.5 μs
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Fall time

t_f	max.	1.0 μs
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(1) Single Pulse $P_w = 10\text{ ms}$

* Pulse test

** h_{FE} classification: A: 16-34 B: 25-50

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Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com