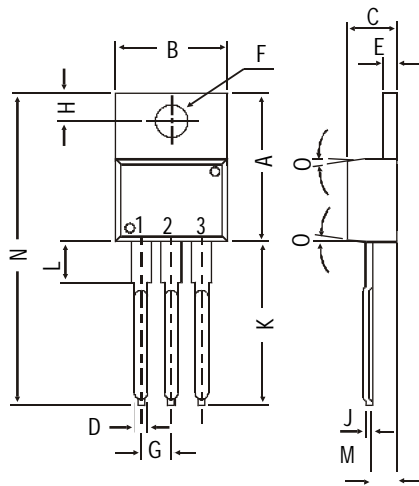
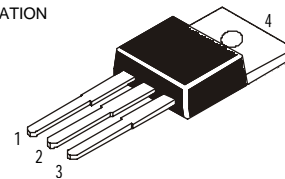


TO-220 Plastic Package

CSC2335

**CSC2335 NPN PLASTIC POWER TRANSISTOR**  
*High Speed, High Voltage Switching*

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



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	

All dimensions in mm.

**ABSOLUTE MAXIMUM RATINGS**

Collector-base voltage (open emitter)  
Collector-emitter voltage (open base)  
Collector current (D.C.)  
Total power dissipation up to  $T_C = 25^\circ\text{C}$   
Junction temperature  
Collector-emitter saturation voltage  
 $I_C = 3\text{A}; I_B = 0.6\text{A}$   
D.C. current gain  
 $I_C = 0.1\text{A}; V_{CE} = 5\text{V}$

$V_{CB0}$	max.	500 V
$V_{CE0}$	max.	400 V
$I_C$	max.	7.0 A
$P_{tot}$	max.	40 W
$T_j$	max.	150 °C
$V_{CEsat}$	max.	1.0 V
$h_{FE}$	min.	20
	max.	80

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

Limiting values  
Collector-base voltage (open emitter)  
Collector-emitter voltage (open base)  
Emitter-base voltage (open collector)  
Collector current (DC)

$V_{CB0}$	max.	500 V
$V_{CE0}$	max.	400 V
$V_{EBO}$	max.	7.0 V
$I_C$	max.	7.0 A

Collector current (Pulse value) (1)	$I_C$	max.	15 A
Base current (DC)	$I_B$	max.	3.5 A
Total power dissipation up to $T_C = 25^\circ\text{C}$	$P_{tot}$	max.	40 W
Total power dissipation up to $T_A = 25^\circ\text{C}$	$P_{tot}$	max.	1.5 W
Junction temperature	$T_j$	max.	150 °C
Storage temperature	$T_{stg}$		-65 to +150 °C

**THERMAL CHARACTERISTICS**

From junction to case	$R_{thj-c}$		3.125 °C/W
-----------------------	-------------	--	------------

**CHARACTERISTICS**

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

**Collector cutoff current**

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

$$R_{BE} = 51\Omega; V_{CE} = 400V; T_A = 125^\circ\text{C}$$

$$V_{BE(off)} = 1.5V; V_{CE} = 400V$$

$$V_{BE(off)} = 1.5V; V_{CE} = 400V; T_A = 125^\circ\text{C}$$

**Emitter cut-off current**

$$I_C = 0; V_{EB} = 5V$$

**Breakdown voltages**

$$I_C = 3 \text{ A}; I_{B1} = 0.6 \text{ A}; L = 1 \text{ mH}$$

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

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

**Saturation voltages**

$$I_C = 3 \text{ A}; I_B = 0.6 \text{ A}$$

**D.C. current gain**

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

$$I_C = 1 \text{ A}; V_{CE} = 5V^{**}$$

$$I_C = 3 \text{ A}; V_{CE} = 5V$$

**Switching time**

$$I_C = 3 \text{ A}; R_L = 50\Omega$$

$$I_{B1} = -I_{B2} = 0.6 \text{ A}; V_{CC} = 150V$$

**Turn on time****Storage time****Fall time**

$$I_{CBO} \quad \text{max.} \quad 10 \mu\text{A}$$

$$I_{CER} \quad \text{max.} \quad 1.0 \text{ mA}$$

$$I_{CEX} \quad \text{max.} \quad 10 \mu\text{A}$$

$$I_{CEX} \quad \text{max.} \quad 1.0 \text{ mA}$$

$$I_{EBO} \quad \text{max.} \quad 10 \mu\text{A}$$

$$V_{CEO(sus)}^* \quad \text{min.} \quad 400 \text{ V}$$

$$V_{CBO} \quad \text{min.} \quad 500 \text{ V}$$

$$V_{EBO} \quad \text{min.} \quad 7.0 \text{ V}$$

$$V_{CEsat}^* \quad \text{max.} \quad 1.0 \text{ V}$$

$$V_{BEsat}^* \quad \text{max.} \quad 1.2 \text{ V}$$

$$h_{FE}^* \quad \text{min.} \quad 20$$

$$\text{max.} \quad 80$$

$$h_{FE}^* \quad \text{min.} \quad 20$$

$$\text{max.} \quad 80$$

$$h_{FE}^* \quad \text{min.} \quad 10$$

$$t_{on} \quad \text{max.} \quad 1.0 \mu\text{s}$$

$$t_s \quad \text{max.} \quad 2.5 \mu\text{s}$$

$$t_f \quad \text{max.} \quad 1.0 \mu\text{s}$$

\* Pulse test:  $P_W \leq 350 \mu\text{s}$ ; duty cycle  $\leq 2\%$  pulsed.

(1)  $P_W \leq 300 \mu\text{s}$ ; duty cycle  $\leq 10\%$ .

\*\*  $h_{FE}$  classification: **R: 20-40 O: 30-60 Y: 40-80**

## Notes

### Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/ CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of  
**Continental Device India Limited**

C-120 Naraina Industrial Area, New Delhi 110 028, India.  
Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290  
e-mail sales@cdil.com www.cdil.com