

SOT-23 Formed SMD Package

CMBT2369

SILICON PLANAR EPITAXIAL SWITCHING TRANSISTOR

N-P N transistor

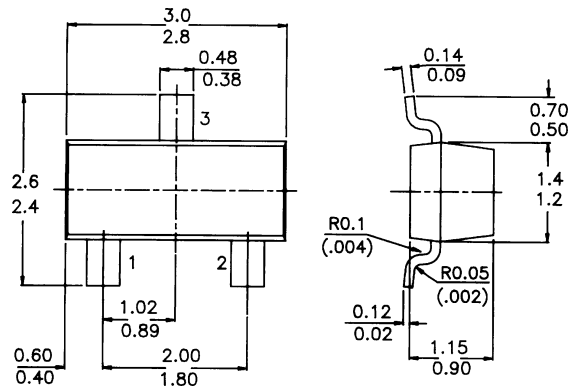
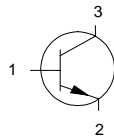
Marking

CMBT2369 = JJ

PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm

Pin configuration

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)	V_{CB0}	max.	40 V
Collector-emitter voltage ($V_{BE} = 0$)	V_{CES}	max.	40 V
Collector-emitter voltage (open base)	V_{CE0}	max.	15 V
Collector current (d.c. value)	I_C	max.	500 mA
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}$	P_{tot}	max.	250 mW
D.C. current gain			
$I_C = 10\text{ mA}; V_{CE} = 1\text{ V}$	h_{FE}		40 to 120
$I_C = 100\text{ mA}; V_{CE} = 2\text{ V}$	h_{FE}	>	20
Storage time			
$I_{Con} = I_{Bon} = I_{Boff} = 10\text{ mA}$	t_s	<	13 ns

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

Limiting values

Collector-base voltage (open emitter)	V_{CB0}	max.	40 V
Collector-emitter voltage ($V_{BE} = 0$)	V_{CES}	max.	40 V
Collector-emitter voltage (open base)	V_{CE0}	max.	15 V
Emitter-base voltage (open collector)	V_{EB0}	max.	4,5 V
Collector current (d.c. value)	I_C	max.	500 mA
Total power dissipation up to $T_{amb} = 25^\circ\text{C}$	P_{tot}	max.	250 mW
Storage temperature	T_{stg}		-55 to 150°C
Junction temperature	T_j	max.	150°C

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\ j-a}$	=	500 K/W
--------------------------------------	---------------	---	---------

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

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

Collector cut-off current

$I_E = 0; V_{CB} = 20\text{ V}$	I_{CB0}	<	400 nA
$I_E = 0; V_{CB} = 20\text{ V}; T_j = 125^\circ\text{C}$	I_{CB0}	<	30 mA

Saturation voltages

$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	V_{CEsat}	<	0,25 V
	V_{BEsat}		0,70 to 0,85 V

D.C. current gain

$I_C = 10\text{ mA}; V_{CE} = 1\text{ V}$	h_{FE}		40 to 120
$I_C = 10\text{ mA}; V_{CE} = 1\text{ V}; T_{amb} = -55^\circ\text{C}$	h_{FE}	>	20
$I_C = 100\text{ mA}; V_{CE} = 2\text{ V}$	h_{FE}	>	20

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

$I_E = 0; V_{CB} = 5\text{ V}$	C_o	<	4,0 pF
--------------------------------	-------	---	--------

Small-signal current gain

$I_C = 1,0\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}; T_{amb} = 25^\circ\text{C}$	h_{fe}	>	5,0
---	----------	---	-----

Breakdown voltages

$I_C = 10\text{ mA}; I_B = 0$	$V_{(BR)CEO}$	min.	15 V
$I_C = 10\text{ mA}; I_E = 0$	$V_{(BR)CBO}$	min.	40 V
$I_C = 0; I_E = 10\text{ mA}$	$V_{(BR)EBO}$	min.	4,5 V
$I_C = 10\text{ mA}; V_{BE} = 0$	$V_{(BR)CES}$	min.	40 V

Switching times at $T_{amb} = 25^\circ\text{C}$

Storage time		typ.	5,0 ns
$I_{Con} = I_{Bon} = -I_{Boff} = 10\text{ mA}$	t_s	<	13 ns

Turn-on time

$I_C = 10\text{ mA}; I_{Bon} = 3\text{ mA}; V_{CC} = 3\text{ V}$	t_{on}	typ.	8,0 ns
	t_{on}	<	12 ns

Turn-off time

$I_C = 10\text{ mA}; I_{Bon} = 3\text{ mA}; I_{Boff} = 1,5\text{ mA}; V_{CC} = 3\text{ V}$	t_{off}	typ.	10 ns
	t_{off}	<	18 ns

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