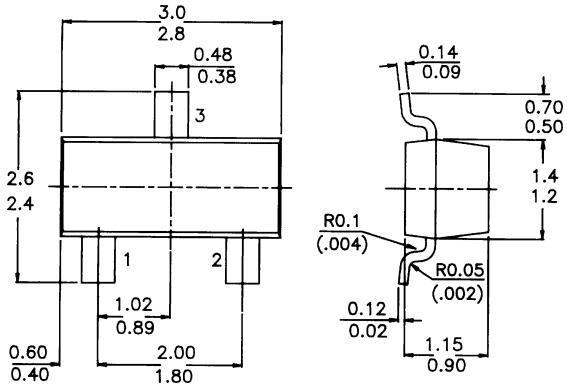
SOT-23 Formed SMD Package **CMBT2369**

SILICON PLANAR EPITAXIAL SWITCHING TRANSISTOR

N–P N transistor

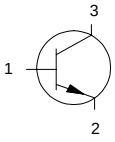
Marking
***C**MBT2369 = lJ*

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 °C	P_{tot}	*max.*	*250 mW*
D.C. current gain			
I_C = 10mA; V_{CE} = 1 V	h_{FE}		*40 to 120*
I_C = 100 mA; V_{CE} = 2 V	h_{FE}	>	*20*
Storage time			
I_{Con} = I_{Bon} = I_{Boff} = 10 mA	t_S	<	*13 ns*

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RATINGS *(at T_A = 25°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 °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°C unless otherwise specified)*

T_j = 25 °C unless otherwise specified

Collector cut–off current			
I_E = 0; V_{CB} = 20 V	I_{CB0}	<	*400 nA*
I_E = 0; V_{CB} = 20V; T_j = 125°C	I_{CB0}	<	*30 µA*
Saturation voltages			
I_C = 10 mA; l_B = 1 mA	V_{CEsat}	<	*0,25 V*
	V_{BEsat}	*0,70 to*	*0,85 V*
D.C. current gain			
I_C = 10mA; V_{CE} = 1 V	h_{FE}	*40 to*	*120*
I_C = 10mA; V_{CE} = 1 V; T_{amb} = –55°C	h_{FE}	>	*20*
I_C = 100 mA; V_{CE} = 2 V	h_{FE}	>	*20*
Output capacitance at f = 1 MHz			
I_E = 0; V_{CB} = 5V	*Co*	<	*4,0 pF*
Small–signal current gain			
I_C = 1,0mA; V_{CE} = 10V; f = 100MHz; T_{amb} = 25°C	h_{fe}	>	*5,0*
Breakdown voltages			
I_C = 10 mA; l_B = 0	$V_{(BR)CEO}$	*min.*	*15 V*
I_C = 10µA; I_E = 0	$V_{(BR)CBO}$	*min.*	*40 V*
I_C = 0; I_E = 10µA	$V_{(BR)EBO}$	*min.*	*4,5 V*
I_C = 10µA; V_{BE} = 0	$V_{(BR)CES}$	*min.*	*40 V*
Switching times at T_{amb} = 25 °C			
Storage time		*typ.*	*5,0 ns*
I_{Con} = I_{Bon} = –I_{Boff} = 10 mA	t_s	<	*13 ns*
Turn–on time	t_{on}	*typ.*	*8,0 ns*
I_C = 10mA; I_{Bon} = 3mA; V_{CC} = 3V	t_{on}	<	*12 ns*
Turn–off time	t_{off}	*typ.*	*10 ns*
I_C = 10mA; I_{Bon} = 3mA; I_{Boff} = 1,5mA; V_{CC} = 3V	t_{off}	<	*18 ns*

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Customer Notes

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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

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