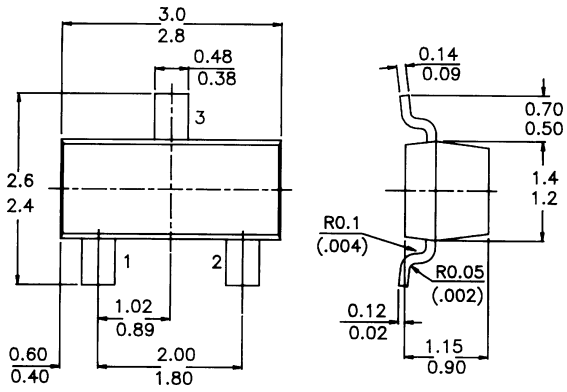
SOT-23 Formed SMD Package **CMBT5551**

SILICON N–P–N HIGH–VOLTAGE TRANSISTOR

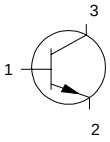
N–P–N transistor

Marking
CMBT5551 = G1

PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm



Pin configuration
1 = BASE
2 = EMITTER
3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

Collector–base voltage (open emitter)	V_{CBO}	*max.*	*180*	*V*
Collector–emitter voltage (open base)	V_{CEO}	*max.*	*160*	*V*
Collector current	I_C	*max.*	*600*	*mA*
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	*max*	*250*	mW
Junction temperature	T_j	*max.*	*150*	*° C*
Collector–emitter saturation voltage				
I_C = 50 mA; I_B = 5 mA	V_{CEsat}	*max.*	*0.2*	*V*
D.C. current gain				
I_C = 10 mA; V_{CE} = 5 V	h_{FE}	*min.*	*80*	

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

Limiting values				
Collector–base voltage (open emitter)	V_{CBO}	*max.*	*180*	*V*
Collector–emitter voltage (open base)	V_{CEO}	*max.*	*160*	*V*
Emitter–base voltage (open collector)	V_{EBO}	*max.*	*6*	*V*

Collector current	I_C	*max.*	*600*	*mA*
Total power dissipation up to T_{amb} *= 25 °C*	P_{tot}	*max*	*250*	mW
Junction temperature	T_j	*max.*	*150*	*° C*
Storage temperature range	T_{stg}		*–55 to +150*	*° C*

THERMAL RESISTANCE

from junction to ambient	$R_{th\ j-a}$		*500*	K/W

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

Collector cut–off current				
I_E *= 0;* V_{CB} *= 120 V*	I_{CBO}	*max.*	*50*	*nA*
I_E *= 0;* V_{CB} *= 120 V;* T_{amb} *= 100 °C*	I_{CBO}	*max.*	*50*	*µA*
Emitter cut–off current				
I_C *= 0;* V_{EB} *= 4 V*	I_{EBO}	*max.*	*50*	*nA*
Breakdown voltages				
I_C *= 1 mA;* I_B *= 0*	$V_{(BR)CEO}$	*min.*	*160*	*V*
I_C *= 100 µA;* I_E *= 0*	$V_{(BR)CBO}$	*min.*	*180*	*V*
I_C *= 0;* I_E *= 10 µA*	$V_{(BR)EBO}$	*min.*	*6*	*V*
Saturation voltages				
I_C *= 10 mA;* I_B *= 1 mA*	V_{CEsat}	*max.*	*0.15*	*V*
	V_{BEsat}	*max.*	*1*	*V*
I_C *= 50 mA;* I_B *= 5 mA*	V_{CEsat}	*max.*	*0.2*	*V*
	V_{BEsat}	*max.*	*1*	*V*
D.C. current gain				
I_C *= 1 mA;* V_{CE} *= 5 V*	h_{FE}	*min.*	*80*	
I_C *= 10 mA;* V_{CE} *= 5 V*	h_{FE}	*min.*	*80*	
		max.	*250*	
I_C *= 50 mA;* V_{CE} *= 5 V*	h_{FE}	*min.*	*30*	
Small–signal current gain				
I_C *= 1 mA;* V_{CE} *= 10 V;* f *= 1 kHz*	h_{fe}	*min.*	*50*	
		max.	*200*	
Output capacitance at f *= 1 MHz*				
I_E *= 0;* V_{CB} *= 10 V*	C_o	*max.*	*6*	*pF*
Input capacitance at f *= 1 MHz*				
I_C *= 0;* V_{EB} *= 0.5 V*	C_i	*max.*	*30*	*pF*
Transition frequency at f *= 100 MHz*				
I_C *= 10 mA;* V_{CE} *= 10 V*	f_T	*min.*	*100*	MHz
		max.	*300*	MHz

Customer Notes

Disclaimer

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