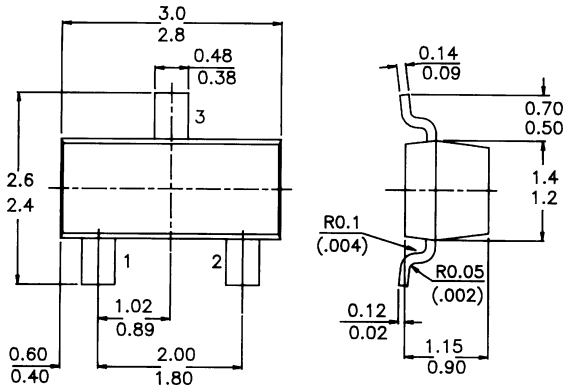
SOT-23 Formed SMD Package **CMBT6517**

HIGH–VOLTAGE TRANSISTOR

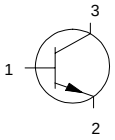
N–P–N transistor

Marking
CMBT6517 = 1Z

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.*	*350*	*V*
Collector–emitter voltage (open base)	$-V_{CEO}$	*max.*	*350*	*V*
Emitter–base voltage (open collector)	$-V_{EBO}$	*max.*	*5*	*V*
Collector current (d.c.)	$-I_C$	*max.*	*500*	*mA*
Total power dissipation at T_{amb} *= 25°C*	P_{tot}	*max*	*225*	*mW*
D.C. current gain				
$-I_C$ *= 10 mA;* $-V_{CE}$ *= 10 V*	h_{FE}	*min.*	*30*	

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

Collector–base voltage (open emitter)	$-V_{CBO}$	*max.*	*350*	*V*
Collector–emitter voltage (open base)	$-V_{CEO}$	*max.*	*350*	*V*
Emitter–base voltage (open collector)	$-V_{EBO}$	*max.*	*5*	*V*
Collector current (d.c.)	$-I_C$	*max.*	*500*	*mA*
Total power dissipation at T_{amb} *= 25°C*	P_{tot}	*max*	*225*	*mW*
Storage temperature	T_{stg}		*–55 to +150*	*° C*
Junction temperature	*Tj*	*max.*	*150*	*° C*

THERMAL CHARACTERISTICS

$T_j = P\ (R_{th\ j-t} + R_{th\ s-a}) + T_{amb}$

Thermal resistance				
from junction to ambient	$R_{th\ j-a}$		556	°C/mW

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

Collector–emitter breakdown voltage				
$-I_C$ = 1 mA	$-V_{(BR)CEO}$	min.	350	V
Collector–base breakdown voltage				
$-I_C$ = 100 µA	$-V_{(BR)CBO}$	min.	350	V
Emitter–base breakdown voltage				
$-I_E$ = 10 µA	$-V_{(BR)EBO}$	min.	5	V
Collector cut–off current				
$-V_{CB}$ = 250 V	$-I_{CBO}$	max.	50	nA
Emitter cut-off current				
$-V_{EB}$ = 5V	$-I_{EBO}$	max.	50	nA
Output capacitance at f = 1 MHz				
$-V_{CB}$ = 20 V	C_c	max.	5	pF
Input capacitance at f = 1 MHz				
$-V_{EB}$ = 0.5 V	C_e	max.	80	pF
Saturation voltages				
$-I_C$ = 10 mA; $-I_B$ = 1 mA	$-V_{CEsat}$	max.	0.3	V
	$-V_{BEsat}$	max.	0.75	V
$-I_C$ = 20 mA; $-I_B$ = 2 mA	$-V_{CEsat}$	max.	0.35	V
	$-V_{BEsat}$	max.	0.85	V
$-I_C$ = 30 mA; $-I_B$ = 3 mA	$-V_{CEsat}$	max.	0.5	V
	$-V_{BEsat}$	max.	0.9	V
$-I_C$ = 50 mA; $-I_B$ = 5 mA	$-V_{CEsat}$	max.	1.0	V
D.C. current gain				
$-I_C$ = 1 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	20	
$-I_C$ = 10 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	30	
$-I_C$ = 30 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	30	
		max.	200	
$-I_C$ = 50 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	20	
		max.	200	
$-I_C$ = 100 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	15	
Base emitter voltage				
I_C = 100 mA; V_{CE} = 10 V	$V_{BE(on)}$	max.	2	V
Transition frequency				
I_C = 10 mA; V_{CE} = 20 V; f = 20 MHz	f_T	min.	40	MHz
		max.	200	MHz

Customer Notes

Disclaimer

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