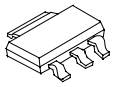
UTC BCP68 NPN EPITAXIAL SILICON TRANSISTOR

NPN MEDIUM POWER TRANSISTOR

FEATURES
* High current (max. 1 A)
* Low voltage (max. 20 V)
* Complementary to UTC BCP69

APPLICATIONS
* General purpose switching and amplification under high current conditions.



SOT-223

1: BASE 2: COLLECTOR 3: EMITTER

ABSOLUTE MAXIMUM RATINGS (Ta = 25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage (Open Emitter)	V_{CBO}	32	V
Collector-Emitter Voltage(Open Base)	V_{CEO}	20	V
Emitter-Base Voltage(Open Collector)	V_{EBO}	5	V
Collector Current (DC)	I_C	1	A
Peak Collector Current	I_{CM}	2	A
Peak Base Current	I_{BM}	200	mA
Total Power Dissipation, Ta ≤ 25℃	P_{tot}	1.37	W
Operating Ambient Temperature	Ta	-65 ~ +150	℃
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-65 ~ +150	℃

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	RATINGS	UNIT
Thermal Resistance From Junction To Ambient	$R_{th\ j\text{-}a}$	Note 1	91	K/W
Thermal Resistance From Junction To Soldering Point	$R_{th\ j\text{-}s}$		10	K/W

Note 1: Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm^2. For other mounting conditions, see “Thermal considerations for SOT223 in the General Part of associated Handbook”.

ELECTRICAL CHARACTERISTICS (T_j = 25℃, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current	I_{CBO}	I_E = 0, V_{CB} = 25V			100	nA
		I_E = 0, V_{CB} = 25V, T_j = 150℃			10	μA
Emitter Cut-off Current	I_{EBO}	I_C = 0, V_{EB} =5V			100	nA
DC Current Gain	h_{FE}	I_C = 5mA, V_{CE} = 10V	50			
		I_C = 500mA, V_{CE} = 1V	85		375	
		I_C = 1A, V_{CE} = 1V	60			
DC Current Gain (BCP68-25)		I_C = 500mA, V_{CE} = 1V	160		375	
Collector-Emitter Saturation Voltage	V_{CEsat}	I_C = 1A, I_B = 100mA			500	mV
Base-Emitter Voltage	V_{BE}	I_C = 5mA, V_{CE} = 10V		620		mV
		I_C = 1A, V_{CE} = 1V			1	V
Collector Capacitance	C_C	I_E = i_e = 0, V_{CB} = 5V, f = 1MHz		38		pF
Transition Frequency	f_T	I_C = 10mA, V_{CE} = 5V, f = 100MHz	40			MHz
DC current gain ratio of the complementary pairs	$\frac{h_{FE1}}{h_{FE2}}$	$\|I_C\|$ = 0.5A, $\|V_{CE}\|$ = 1V			1.6	

DC current gain (typical values)