

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

FEATURES

- LOW $V_{CE(sat)}$
- High Collector Current
- High DC Current Gain
- Fast Switching Time

APPLICATION

- LCD backlighting
- Flyback converters
- Supply line switching circuits
- Battery Chargers

MARKING

5886

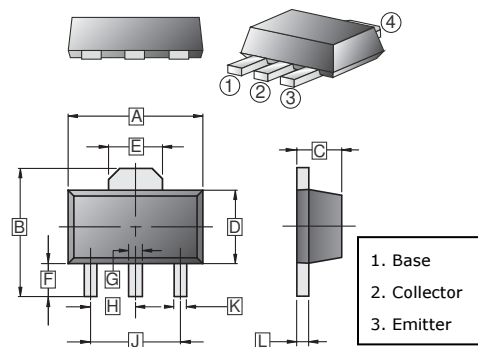
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-89	1K	7 inch

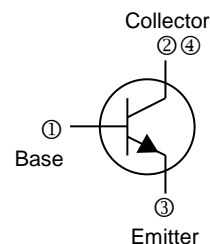
ORDER INFORMATION

Part Number	Type
BCP5886-C	Lead (Pb)-free and Halogen-free

SOT-89



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.60	G	0.40	0.58
B	3.94	4.25	H	1.50 TYP	
C	1.40	1.60	J	3.00 TYP	
D	2.25	2.60	K	0.32	0.52
E	1.55 TYP.		L	0.35	0.44
F	0.89	1.20			



ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Ratings	Unit
Collector-Base Voltage		V_{CBO}	40	V
Collector-Emitter Voltage		V_{CEO}	40	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	5	A
	Pulse ¹		10	
Base Current	Pulse ¹	I_B	2	
Total Power Dissipation ³		P_C	0.5	W
Total Power Dissipation ²			1.5	
Junction, Storage Temperature Range		T_J, T_{STG}	-55~150	$^\circ\text{C}$
Thermal Data				
Thermal Resistance from Junction-Ambient ³		$R_{\theta JA}$	250	$^\circ\text{C/W}$
Thermal Resistance from Junction- Ambient ²			85	

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40	-	-	V	$I_C=100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40	-	-		$I_C=10\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	-	-		$I_E=100\mu\text{A}, I_C=0$
Collector Cut-off Current	I_{CBO}	-	-	100	nA	$V_{CB}=30\text{V}, I_E=0$
Emitter Cut-off Current	I_{EBO}	-	-	100		$V_{EB}=5\text{V}, I_C=0$
DC Current Gain	h_{FE}	300	500	-		$V_{CE}=2\text{V}, I_C=1\text{A}$
		250	450	-		$V_{CE}=2\text{V}, I_C=2\text{A}$
		100	300	-		$V_{CE}=2\text{V}, I_C=5\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	75	120	mV	$I_C=1\text{A}, I_B=10\text{mA}$
		-	210	355		$I_C=5\text{A}, I_B=0.5\text{A}$
Equivalent On-Resistance ¹	$R_{CE(sat)}$	-	40	75	m Ω	$I_C=5\text{A}, I_B=0.5\text{A}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-	1.1	1.3	V	$I_C=5\text{A}, I_B=0.5\text{A}$
Base-Emitter Voltage	$V_{BE(ON)}$	-	0.8	1.1	V	$I_C=2\text{A}, V_{CE}=2\text{V}$
Collector Output Capacitance	C_{ob}	-	60	-	pF	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$
Transition Frequency	f_T	-	130	-	MHz	$V_{CE}=10\text{V}, I_E=-0.1\text{A}$

Notes:

1. Pulse test: pulse width $\leq 100\mu\text{s}$, duty cycle $\leq 2\%$.
2. When mounted on 40x40x0.8mm ceramic substrate.
3. When mounted on Min. copper pad.

TYPICAL CHARACTERISTICS

Fig.1 I_C - $V_{BE(on)}$

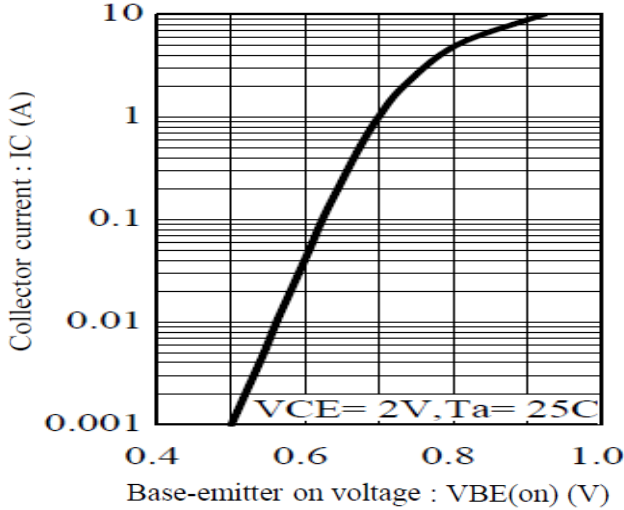


Fig.2 h_{FE} - I_C

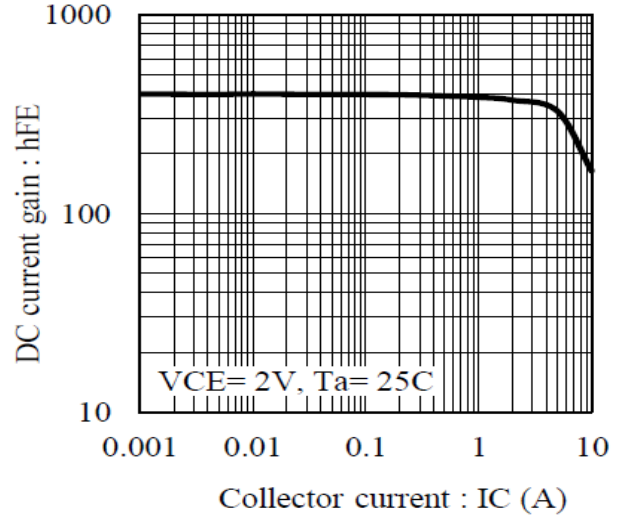


Fig.3 $V_{CE(sat)}$ - I_C

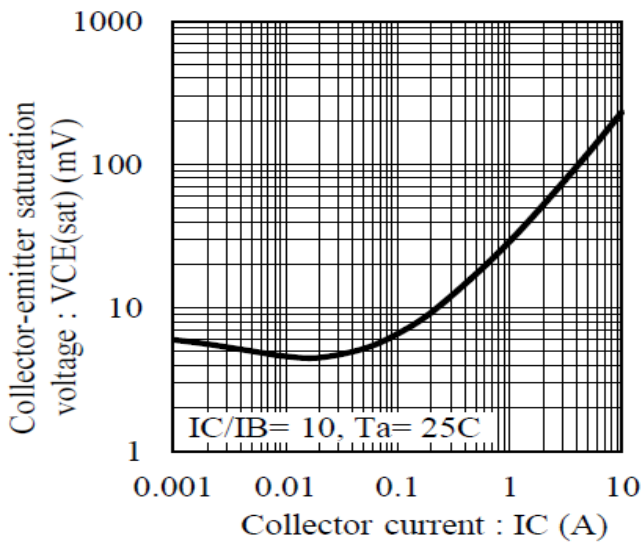


Fig.4 $V_{CE(sat)}$ - I_C

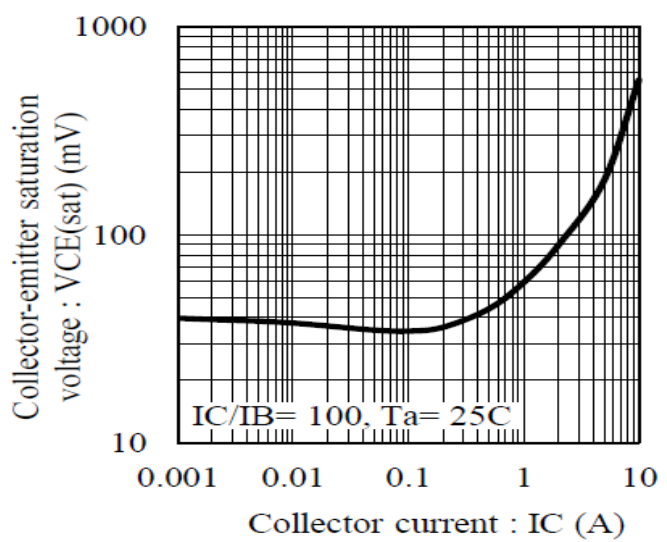


Fig.5 $V_{BE(sat)}$ - I_C

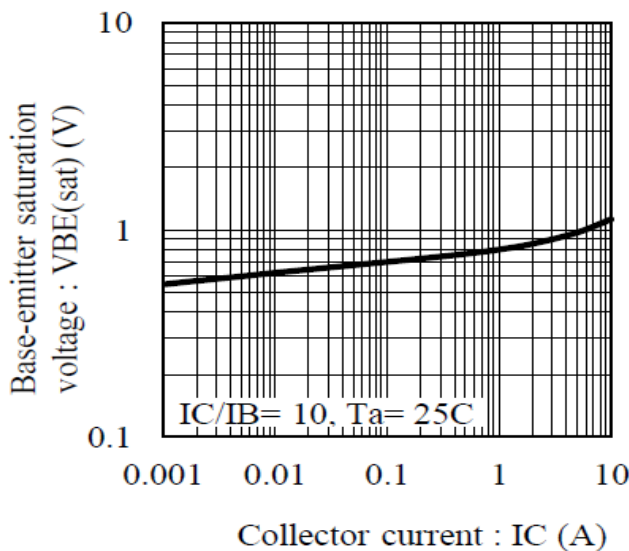
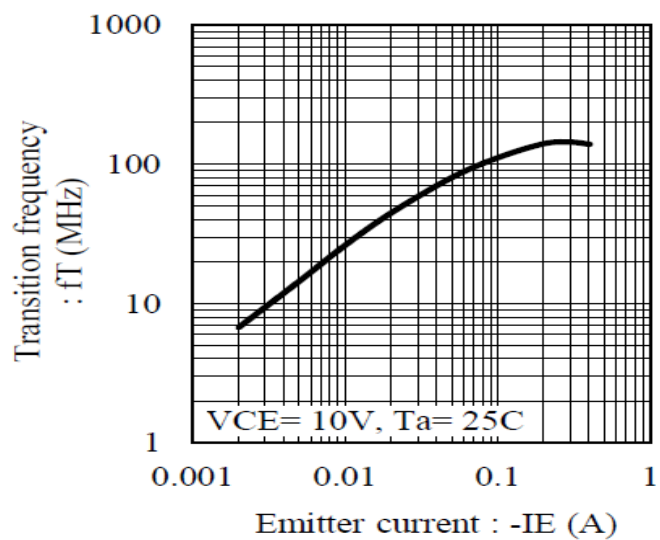


Fig.6 f_T - I_E



TYPICAL CHARACTERISTICS

Fig.7 Cob - VCB

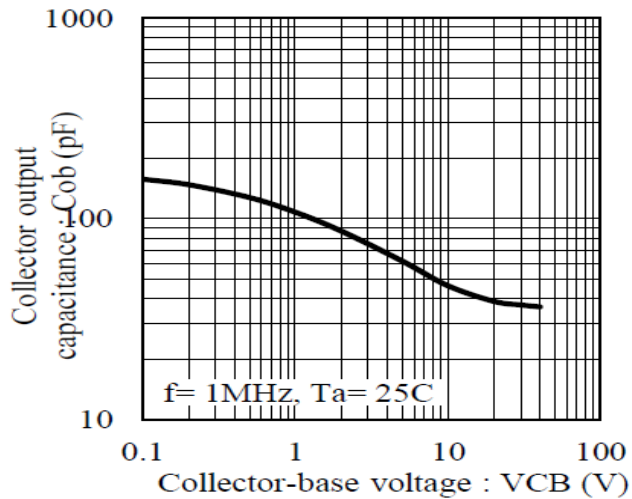


Fig.8 Cib - VEB

