UN206

Transistor array to drive the small motor

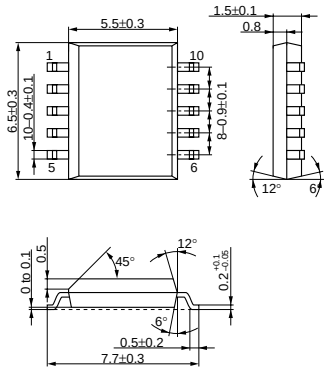
Features

- Small and lightweight
- Low power consumption (low $V_{CE(sat)}$ transistor used)
- Protective diode incorporated (C-E monolithic)
- Low-voltage drive

Applications

- Video cameras
- Cameras
- Portable CD players
- Small motor drive circuits in general for electronic equipment.

Unit: mm



SO–10C Package

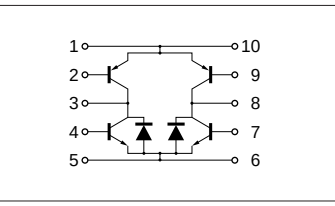
Absolute Maximum Ratings (Ta=25±2˚C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	±20	V
Collector to emitter voltage	V_{CEO}	±18	V
Emitter to base voltage	V_{EBO}	±5	V
Collector current	I_C	±1	A
Total power dissipation	P_T*	0.5	W
Junction temperature	T_j	150	˚C
Storage temperature	T_{stg}	–55 to +150	˚C

Note: ± marks used above: +: NPN part, –: PNP part

* T_C = 25˚C only when the elements are active

Internal Connection



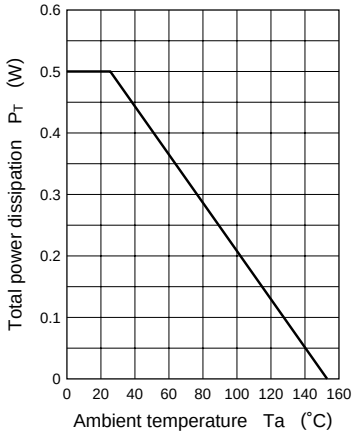
Electrical Characteristics (Ta=25±2˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	(NPN) V_{CB} = 20V, I_E = 0			1	μA
		(PNP) V_{CB} = –20V, I_E = 0			–1	
Collector cutoff current	I_{CER}	(NPN) V_{CE} = 18V, R_{BE} = 100kΩ			10	μA
		(PNP) V_{CE} = –18V, R_{BE} = 100kΩ			–10	
Collector to base voltage	V_{CBO}	(NPN) I_C = 10μA, I_E = 0	20			V
		(PNP) I_C = –10μA, I_E = 0	–20			
Collector to emitter voltage	V_{CEO}	(NPN) I_C = 1mA, I_B = 0	18			V
		(PNP) I_C = –1mA, I_B = 0	–18			
Emitter to base voltage	V_{EBO}	(NPN) I_E = 10μA, I_C = 0	5			V
		(PNP) I_E = –10μA, I_C = 0	–5			
Forward voltage (DC)	V_F	I_F = 1A			1.5	V
Forward current transfer ratio	h_{FE1}	(NPN) V_{CE} = 2V, I_C = 0.5A*	90		360	
		(PNP) V_{CE} = –2V, I_C = – 0.5A*	90		360	
Forward current transfer ratio	h_{FE2}	(NPN) V_{CE} = 2V, I_C = 1.5A*	50			
		(PNP) V_{CE} = –2V, I_C = – 1.5A*	50			
Collector to emitter saturation voltage	$V_{CE(sat)1}$	(NPN) I_C = 0.3A, I_B = 10mA			0.2	V
		(PNP) I_C = – 0.3A, I_B = –10mA			– 0.2	
Collector to emitter saturation voltage	$V_{CE(sat)2}$	(NPN) I_C = 0.7A, I_B = 10mA			0.6	V
		(PNP) I_C = – 0.7A, I_B = –10mA			– 0.6	
Transition frequency	f_T	(NPN) V_{CB} = 6V, I_E = 50mA, f = 200MHz		150		MHz
		(PNP) V_{CB} = –6V, I_E = –50mA, f = 200MHz		200		
Collector output capacitance	C_{ob}	(NPN) V_{CB} = 6V, I_E = 0, f = 1MHz		20		pF
		(PNP) V_{CB} = –6V, I_E = 0, f = 1MHz		40		

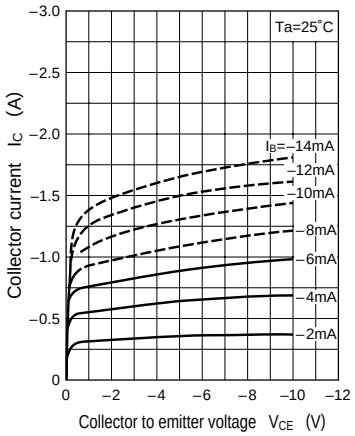
*Pulse measurement

Characteristics charts of PNP transistor block

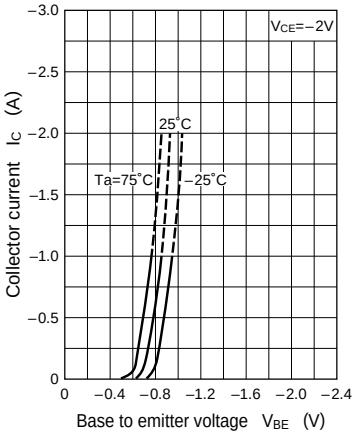
P_T — Ta



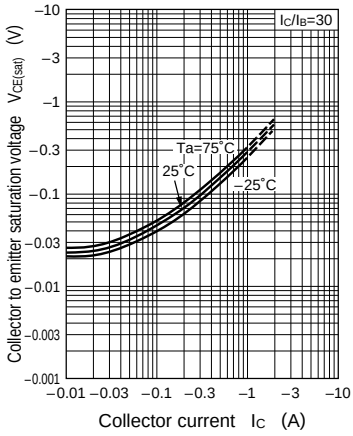
I_C — V_{CE}



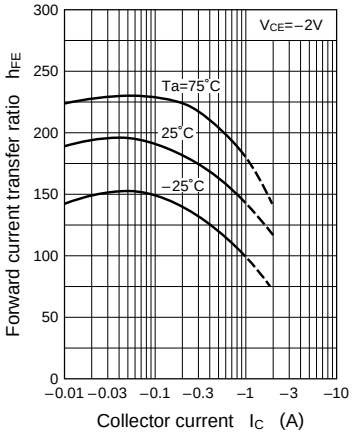
I_C — V_{BE}



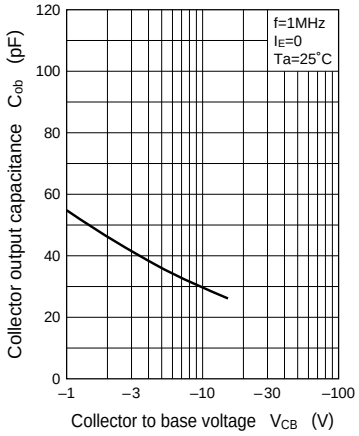
$V_{CE(sat)}$ — I_C



h_{FE} — I_C

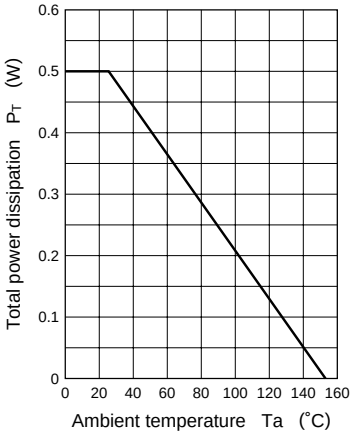


C_{ob} — V_{CB}

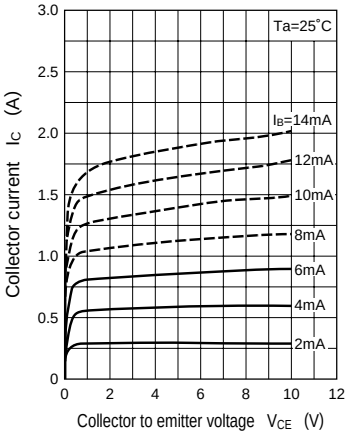


Characteristics charts of NPN transistor block

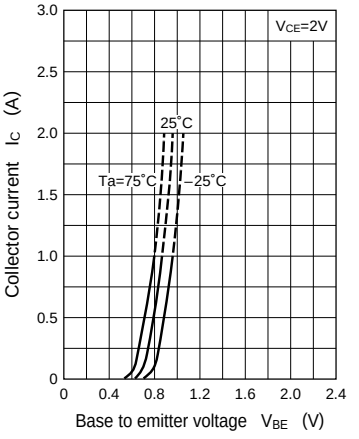
P_T — Ta



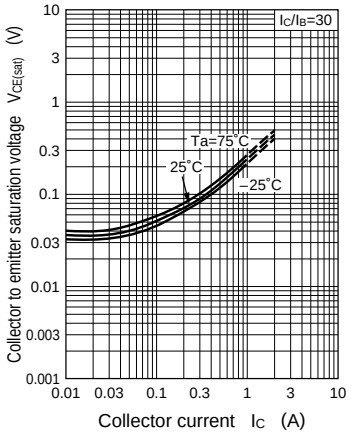
I_C — V_{CE}



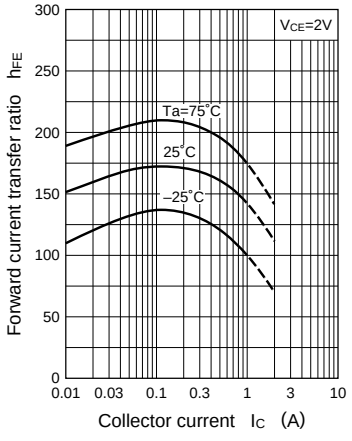
I_C — V_{BE}



$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}