

UNA0206 (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

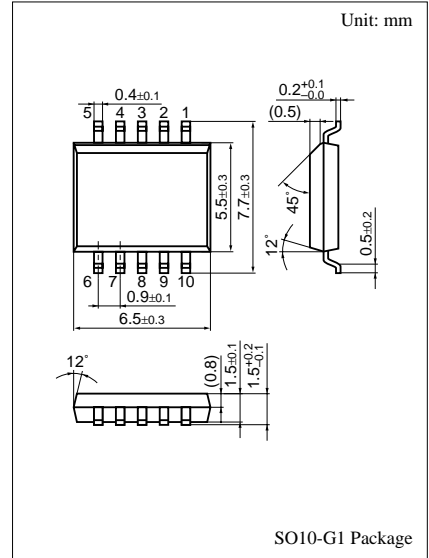
- Video cameras
- Cameras
- Portable CD players
- Small motor drive circuits in general for electronic equipment.

■ Absolute Maximum Ratings (Ta=25±2°C)

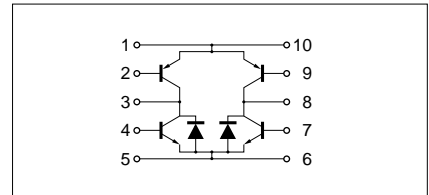
Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	±20	V
Collector to emitter voltage	V_{CEO}	±18	V
Emitter to base voltage	V_{EBO}	±5	V
Collector current	I_C	±1	A
Total power dissipation	P_T^*	0.5	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

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

* $T_C = 25^\circ\text{C}$ only when the elements are active



Internal Connection



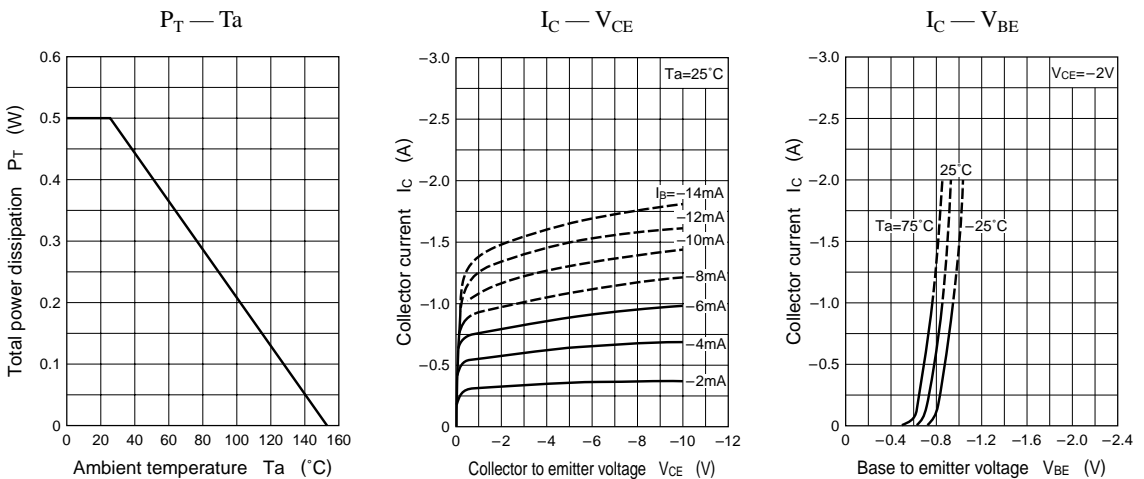
Note.) The Part number in the Parenthesis shows conventional part number.

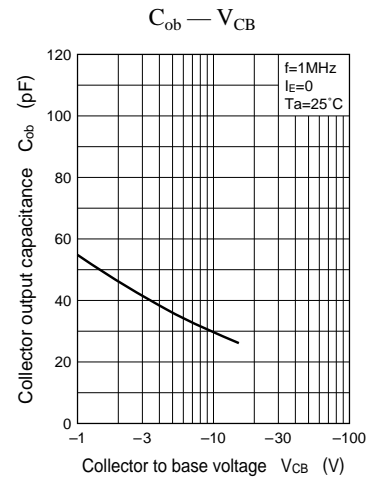
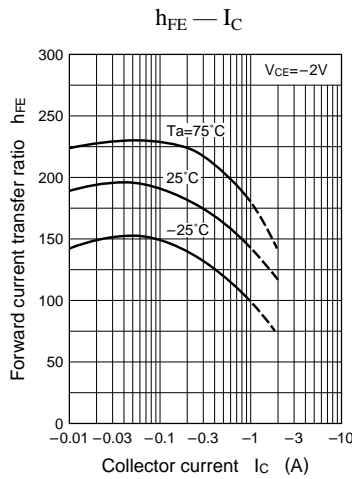
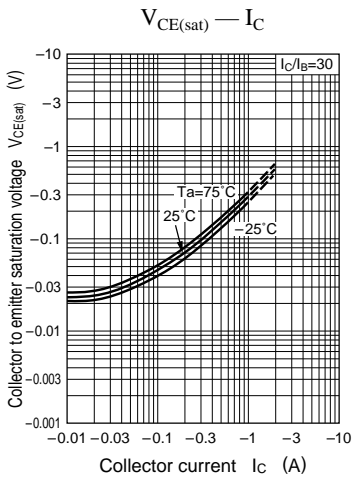
■ Electrical Characteristics (Ta=25±2°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I _{CB0}	(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		

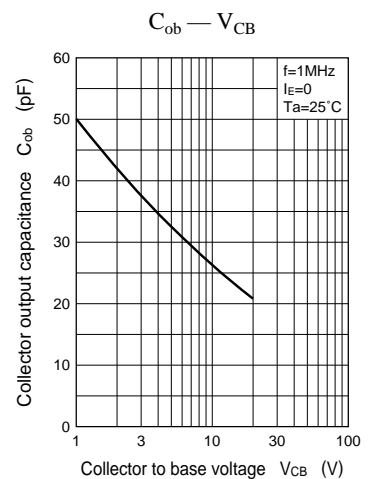
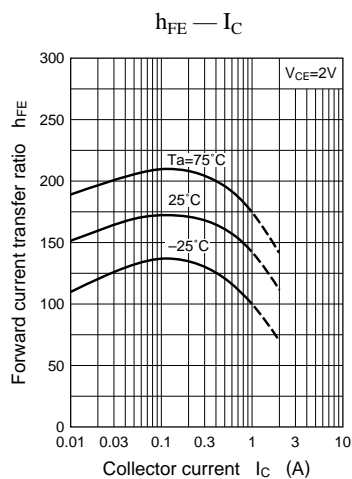
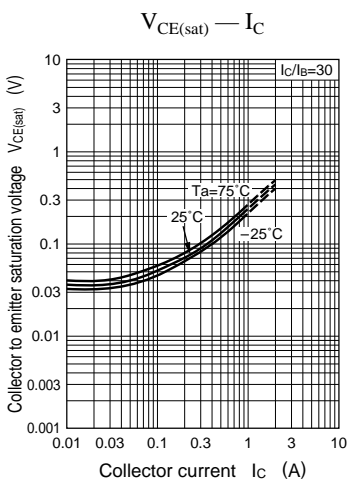
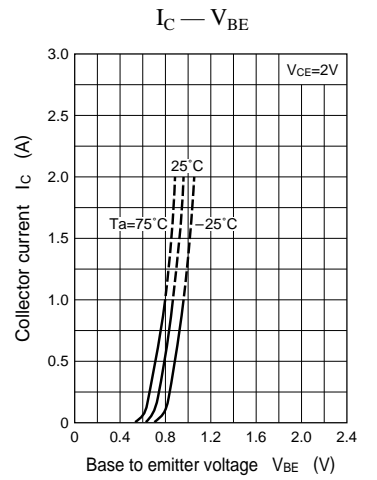
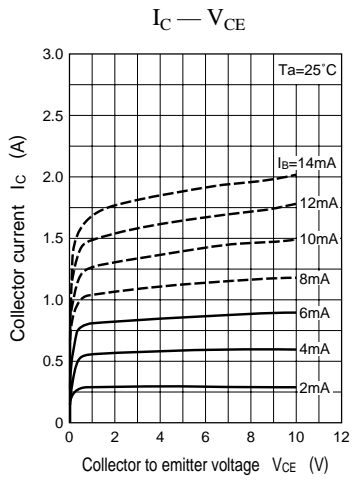
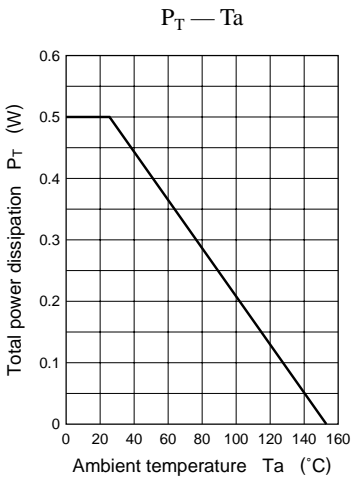
*Pulse measurement

Characteristics charts of PNP transistor block





Characteristics charts of NPN transistor block



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