

UNA0228 (UN228)

Transistor array to drive the small motor

Features

- Small and lightweight
- Low power consumption
- Low-voltage drive
- With 4 elements incorporated

Applications

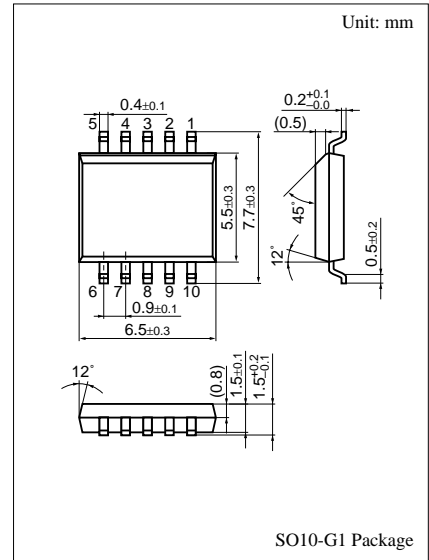
- For motor drives
- Small motor drive circuits in general

Absolute Maximum Ratings (Ta=25±3°C)

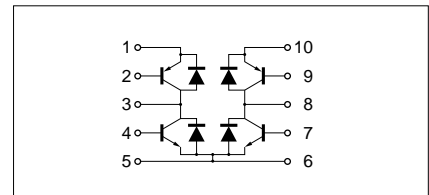
Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	±12	V
Collector to emitter voltage	V_{CEO}	±10	V
Emitter to base voltage	V_{EBO}	±7	V
Collector current	I_C	±1	A
Peak collector current	I_{CP}	±2.5	A
Total power dissipation	P_T^*	0.5	W
Junction temperature	T_j	150	°C
Storage temperature	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



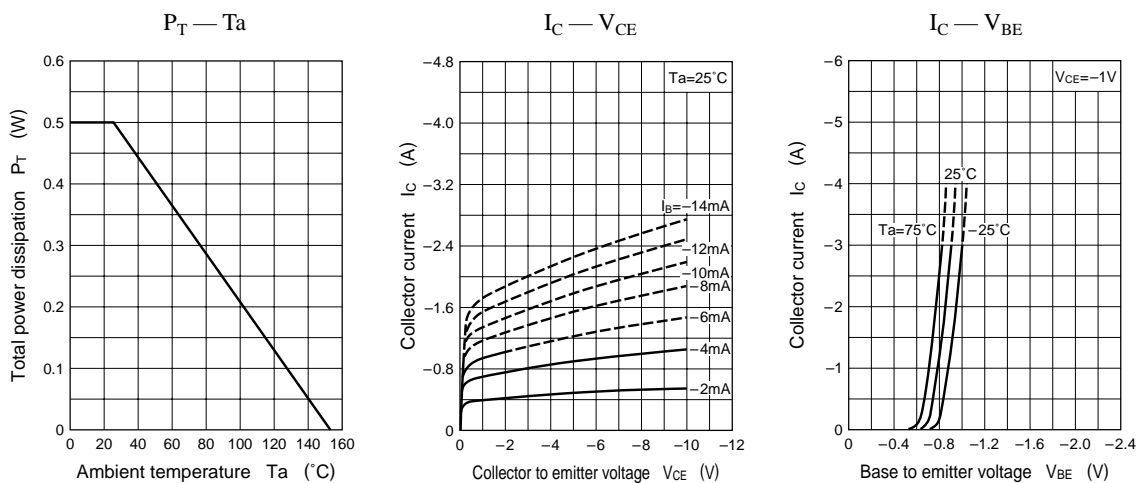
Note.) The Part number in the Parenthesis shows conventional part number.

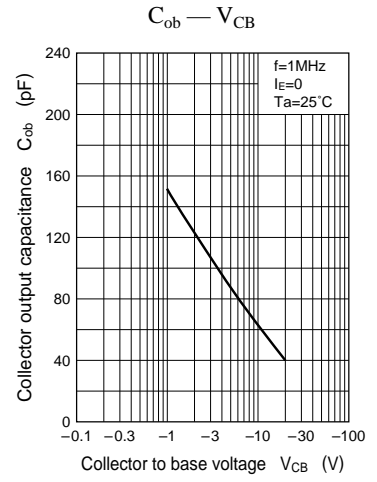
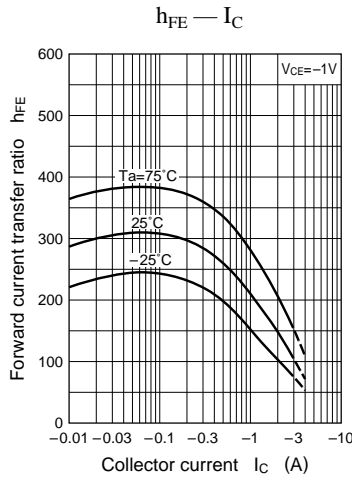
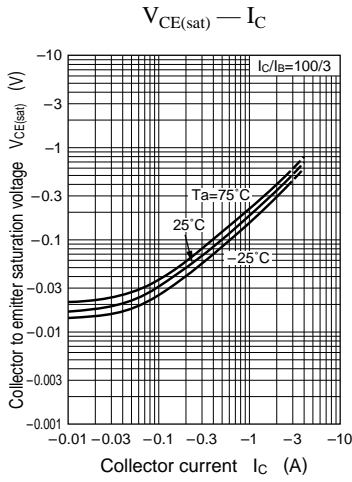
■ Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V _{CB0}	(NPN) I _C = 10μA, I _E = 0	12			V
		(PNP) I _C = -10μA, I _E = 0	-12			
Collector to emitter voltage	V _{CEO}	(NPN) I _C = 1mA, I _B = 0	10			V
		(PNP) I _C = -1mA, I _B = 0	-10			
Emitter to base voltage	V _{EBO}	(NPN) I _E = 10μA, I _C = 0	7			V
		(PNP) I _E = -10μA, I _C = 0	-7			
Collector cutoff current	I _{CBO}	(NPN) V _{CB} = 10V, I _E = 0			1	μA
		(PNP) V _{CB} = -10V, I _E = 0			-1	
Forward current transfer ratio	h _{FE}	(NPN) V _{CE} = 1V, I _C = 0.5A*	200		800	
		(PNP) V _{CE} = -1V, I _C = 0.5A*	200		800	
Collector to emitter saturation voltage	V _{CE(sat)}	(NPN) I _C = 1A, I _B = 30mA*		0.2	0.3	V
		(PNP) I _C = -1A, I _B = -30mA*		-0.2	-0.3	
Transition frequency	f _T	(NPN) V _{CB} = 6V, I _E = -50mA, f = 200MHz		150		MHz
		(PNP) V _{CB} = -6V, I _E = 50mA, f = 200MHz		150		
Collector output capacitance	C _{ob}	(NPN) V _{CB} = 10V, I _E = 0, f = 1MHz		50		pF
		(PNP) V _{CB} = -10V, I _E = 0, f = 1MHz		65		
Forward voltage	V _F	(NPN) I _F = 1A			1.5	V
		(PNP) I _F = -1A			-1.5	

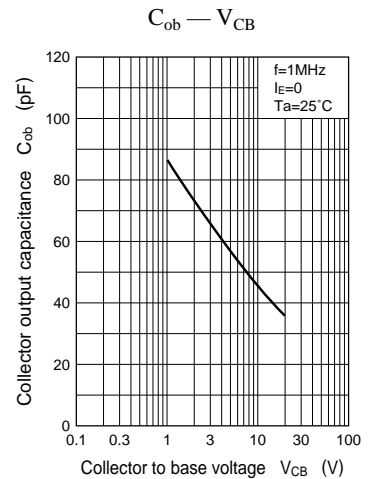
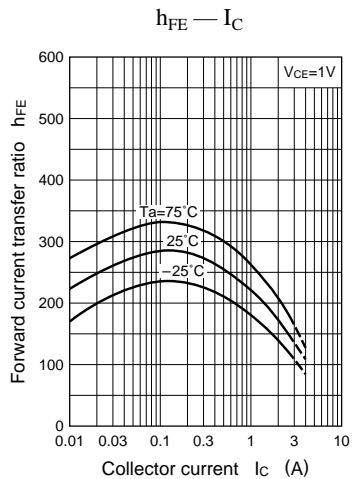
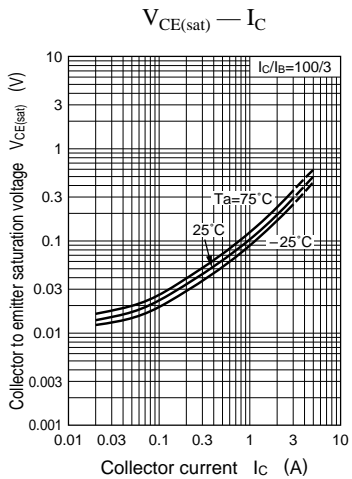
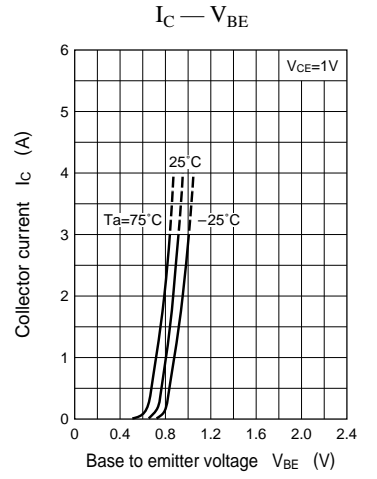
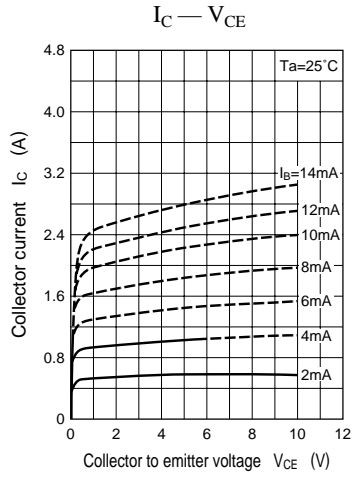
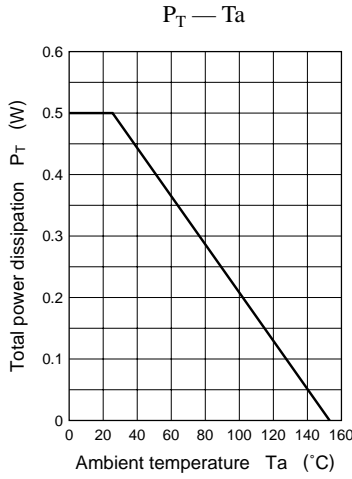
*Pulse measurement

Characteristics charts of PNP transistor block





Characteristics charts of NPN transistor block



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