

UN227

Transistor array to drive the small motor

■ Features

- Small and lightweight
- Low power consumption
- Low-voltage drive
- With 8 elements incorporated

■ Applications

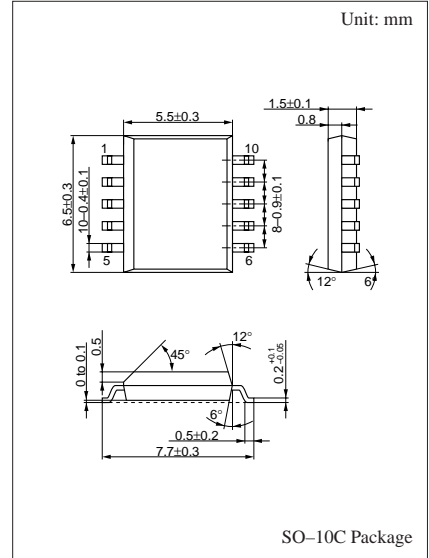
- For motor drives
- Small motor drive circuits in general

■ Absolute Maximum Ratings (Ta=25±3°C)

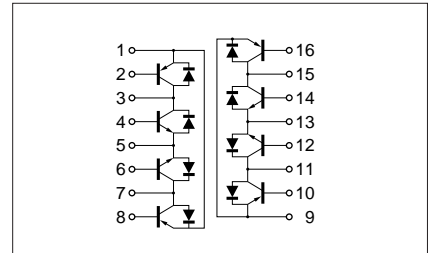
Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	±10	V
Collector to emitter voltage	V_{CEO}	±10	V
Emitter to base voltage	V_{EBO}	±7	V
Collector current	I_C	±1.5	A
Peak collector current	I_{CP}	±2	A
Total power dissipation	P_T^*	0.5	W
Junction temperature	T_j	150	°C
Storage temperature	T_{sig}	-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



■ Electrical Characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V_{CBO}	(NPN) $I_{\text{C}} = 10\mu\text{A}$, $I_{\text{E}} = 0$	10			V
		(PNP) $I_{\text{C}} = -10\mu\text{A}$, $I_{\text{E}} = 0$	-10			
Collector to emitter voltage	V_{CEO}	(NPN) $I_{\text{C}} = 1\text{mA}$, $I_{\text{B}} = 0$	10			V
		(PNP) $I_{\text{C}} = -1\text{mA}$, $I_{\text{B}} = 0$	-10			
Emitter to base voltage	V_{EBO}	(NPN) $I_{\text{E}} = 10\mu\text{A}$, $I_{\text{C}} = 0$	7			V
		(PNP) $I_{\text{E}} = -10\mu\text{A}$, $I_{\text{C}} = 0$	-7			
Collector cutoff current	I_{CBO}	(NPN) $V_{\text{CB}} = 7\text{V}$, $I_{\text{E}} = 0$			1	μA
		(PNP) $V_{\text{CB}} = -7\text{V}$, $I_{\text{E}} = 0$			-1	
Collector cutoff current	I_{CEO}	(NPN) $V_{\text{CE}} = 10\text{V}$, $I_{\text{B}} = 0$			2	μA
		(PNP) $V_{\text{CE}} = -10\text{V}$, $I_{\text{B}} = 0$			-2	
Forward current transfer ratio	h_{FE}	(NPN) $V_{\text{CE}} = 1\text{V}$, $I_{\text{C}} = 400\text{mA}^*$	200		700	
		(PNP) $V_{\text{CE}} = -1\text{V}$, $I_{\text{C}} = -400\text{mA}^*$	200		700	
Collector to emitter saturation voltage	$V_{\text{CE(sat)}}$	(NPN) $I_{\text{C}} = 1\text{A}$, $I_{\text{B}} = 25\text{mA}^*$			0.25	V
		(PNP) $I_{\text{C}} = -1\text{A}$, $I_{\text{B}} = -25\text{mA}^*$			-0.35	
Transition frequency	f_{T}	(NPN) $V_{\text{CB}} = 6\text{V}$, $I_{\text{E}} = -50\text{mA}$, $f = 200\text{MHz}$		120		MHz
		(PNP) $V_{\text{CB}} = -6\text{V}$, $I_{\text{E}} = 50\text{mA}$, $f = 200\text{MHz}$		120		
Collector output capacitance	C_{ob}	(NPN) $V_{\text{CB}} = 6\text{V}$, $I_{\text{E}} = 0$, $f = 1\text{MHz}$		25		pF
		(NPN) $V_{\text{CB}} = -6\text{V}$, $I_{\text{E}} = 0$, $f = 1\text{MHz}$		35		
Forward voltage	V_{F}	(NPN) $I_{\text{F}} = 0.5\text{A}$			1.3	V
		(PNP) $I_{\text{F}} = -0.5\text{A}$			-1.3	

*Pulse measurement