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For any questions, you can email us directly:

sales@integrated-circuit.com

STA303A

NPN Darlington

General purpose/3-phase motor drive

External dimensions STA (8-pin)

Absolute maximum ratings

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

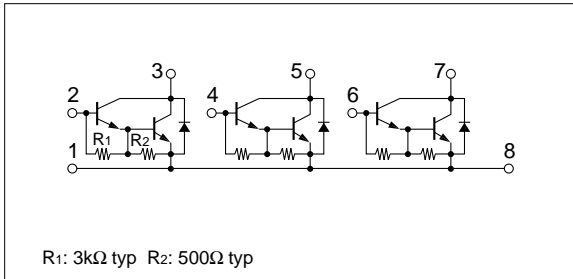
Symbol	Ratings	Unit
V_{CB0}	120	V
V_{CE0}	100	V
V_{EB0}	6	V
I_C	4	A
I_{CP}	8 (PW \leq 10ms, $D_u\leq$ 50%)	A
P_T	3 ($T_a=25^\circ\text{C}$)	W
	15 ($T_c=25^\circ\text{C}$)	
T_j	150	$^\circ\text{C}$
T_{stg}	-40 to +150	$^\circ\text{C}$

Electrical characteristics

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

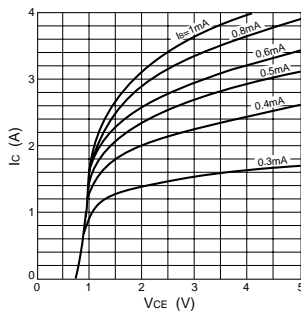
Symbol	Specification			Unit	Conditions
	min	typ	max		
I_{CBO}			100	μA	$V_{CB}=120\text{V}$
I_{EBO}			10	mA	$V_{EB}=6\text{V}$
V_{CE0}	100			V	$I_C=10\text{mA}$
h_{FE}	1000				$V_{CE}=4\text{V}$, $I_C=2\text{A}$
$V_{CE(sat)}$			2.0	V	$I_C=2\text{A}$, $I_B=10\text{mA}$
t_{on}		0.8		μs	$V_{CC}\doteq 40\text{V}$, $I_C=2\text{A}$, $I_{B1}=-I_{B2}=10\text{mA}$
t_{stg}		5.0		μs	
t_f		2.0		μs	

Equivalent circuit diagram

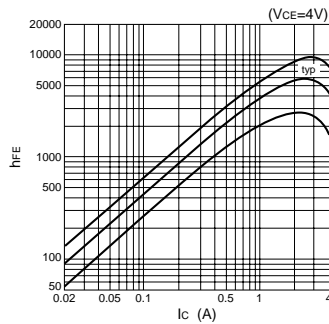


Characteristic curves

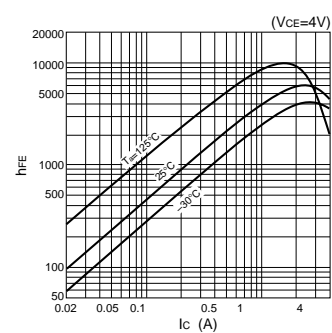
I_C - V_{CE} Characteristics (Typical)



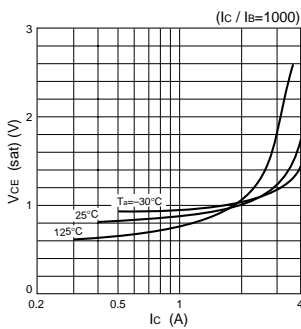
h_{FE} - I_C Characteristics (Typical)



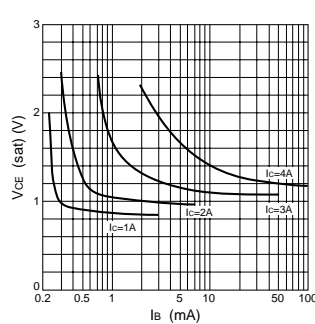
h_{FE} - I_C Temperature Characteristics (Typical)



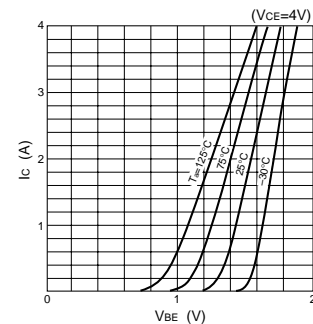
$V_{CE(sat)}$ - I_C Temperature Characteristics (Typical)



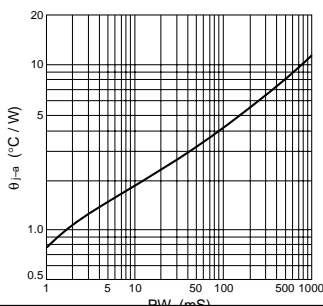
$V_{CE(sat)}$ - I_B Characteristics (Typical)



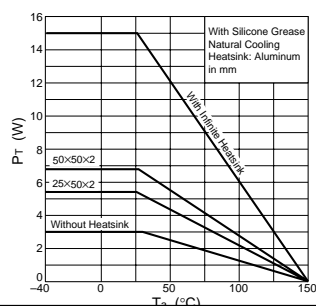
I_C - V_{BE} Temperature Characteristics (Typical)



θ_{j-a} -PW Characteristics



P_T - T_a Characteristics



Safe Operating Area (SOA)

