

STA309A

PNP Darlington

General purpose/3-phase motor drive

External dimensions STA (8-pin)

Absolute maximum ratings

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

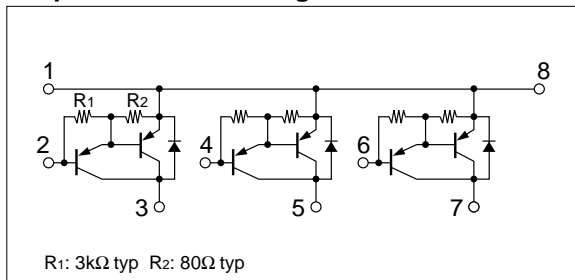
Symbol	Ratings	Unit
V_{CBO}	-250	V
V_{CEO}	-250	V
V_{EBO}	-6	V
I_C	-2.5	A
I_{CP}	-4 (PW \leq 1mS)	A
I_B	-0.5	A
P_T	3 ($T_a=25^\circ\text{C}$)	W
	15 ($T_c=25^\circ\text{C}$)	
T_j	150	$^\circ\text{C}$
T_{stg}	-40 to +150	$^\circ\text{C}$
θ_{j-c}	8.33	$^\circ\text{C/W}$

Electrical characteristics

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

Symbol	Specification			Unit	Conditions
	min	typ	max		
I_{CBO}			-100	μA	$V_{CB}=-250\text{V}$
I_{EBO}			-10	mA	$V_{EB}=-6\text{V}$
V_{CEO}	-250			V	$I_C=-1\text{mA}$
h_{FE}	1000				$V_{CE}=-4\text{V}, I_C=-1\text{A}$
$V_{CE(sat)}$			-1.5	V	$I_C=-2\text{A}, I_B=-4\text{mA}$
$V_{BE(sat)}$			-2.2	V	
V_{FEC}		1		V	$I_{FEC}=1\text{A}$
t_{on}		0.5		μs	$V_{CC}=-100\text{V},$ $I_C=-1\text{A},$ $I_{B1}=-I_{B2}=-10\text{mA}$
t_{stg}		4		μs	
t_f		0.5		μs	
C_{ob}		70		pF	$V_{CB}=-10\text{V}, f=1\text{MHz}$

Equivalent circuit diagram

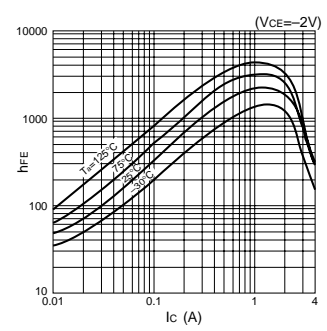
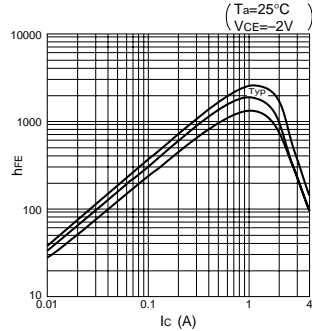


Characteristic curves

I_C - V_{CE} Characteristics (Typical)

h_{FE} - I_C Characteristics (Typical)

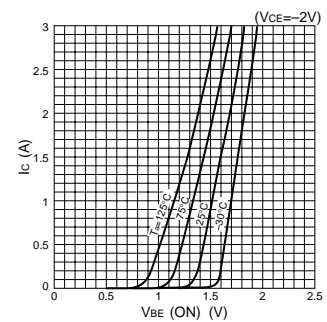
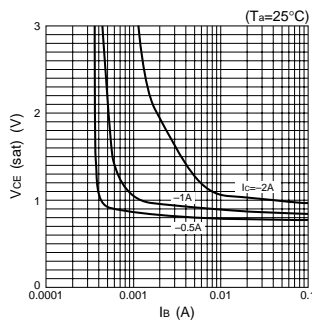
h_{FE} - I_C Temperature Characteristics (Typical)



$V_{CE(sat)}$ - 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)

