STA434A

PNP + NPN Darlington
H-bridge

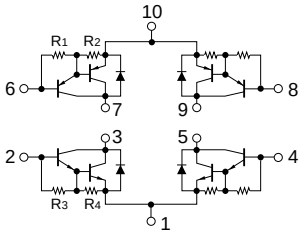
External dimensions Ⓓ ··· STA (10-pin)

Absolute maximum ratings

(Ta=25°C)

Symbol	Ratings		Unit
	NPN	PNP	
V_{CBO}	80	–60	V
V_{CEO}	60	–60	V
V_{EBO}	6	–6	V
I_C	4	–4	A
I_{CP}	8 (PW≤10ms, Du≤50%)	–8 (PW≤10ms, Du≤50%)	A
P_T	4 (Ta=25°C)		W
	20 (Tc=25°C)		
T_j	150		°C
T_{stg}	–40 to +150		°C

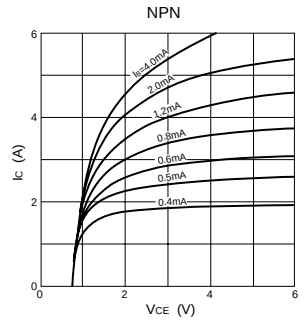
■Equivalent circuit diagram

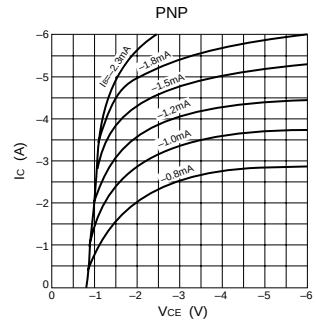


R1: 2kΩ typ R2: 150Ω typ R3: 3kΩ typ R4: 200Ω typ

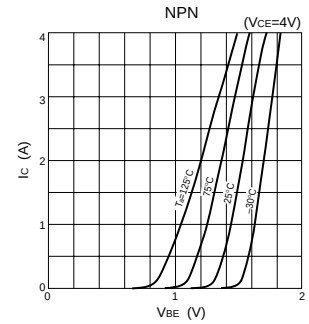
Characteristic curves

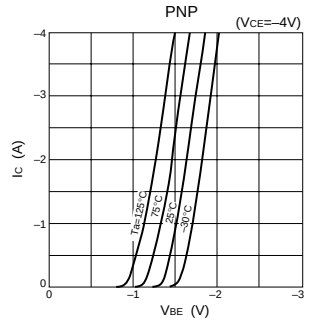
IC-VCE Characteristics (Typical)



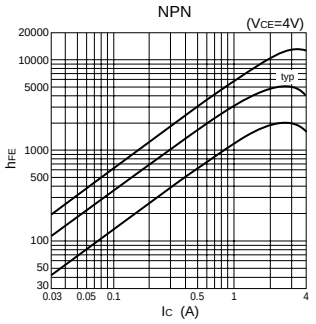


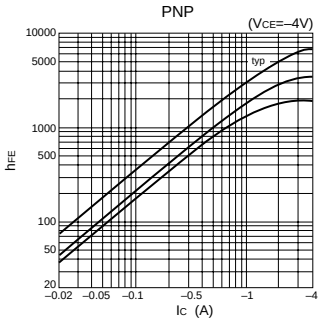
IC-VBE Temperature Characteristics (Typical)



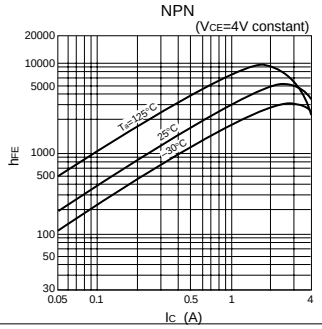


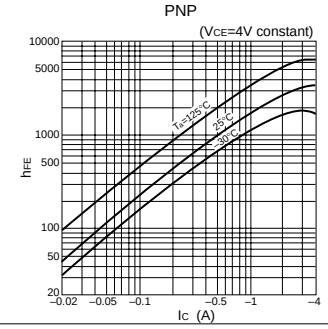
hFE-IC Characteristics (Typical)





hFE-IC Temperature Characteristics (Typical)





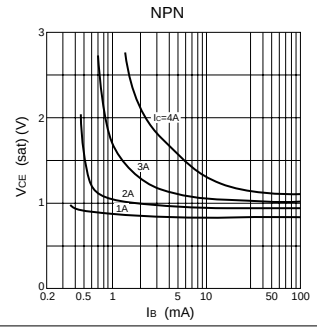
Electrical characteristics

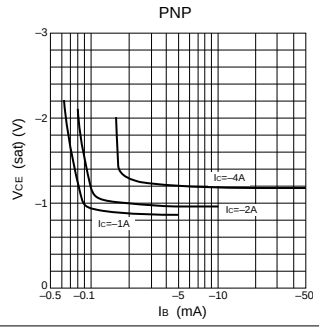
(T_a=25°C)

Symbol	NPN					PNP				
	Specification			Unit	Conditions	Specification			Unit	Conditions
	min	typ	max			min	typ	max		
I_{CBO}			100	μA	V_{CB}=80V			–100	μA	V_{CB}=–60V
I_{EBO}			10	mA	V_{EB}=6V			–10	mA	V_{EB}=–6V
V_{CEO}	60			V	I_C=10mA	–60			V	I_C=–10mA
h_{FE}	1000				V_{CE}=4V, I_C=3A	1000				V_{CE}=–4V, I_C=–3A
V_{CE}(sat)			2.0	V	I_C=3A, I_B=10mA			–2.0	V	I_C=–2A, I_B=–10mA
t_{on}		1.0		μs	V_{CC}≒30V,		0.4		μs	V_{CC}≒–30V,
t_{stg}		4.0		μs	I_C=3A,		0.8		μs	I_C=–3A,
t_f		1.5		μs	I_{B1}=–I_{B2}=10mA		0.6		μs	I_{B1}=–I_{B2}=–10mA

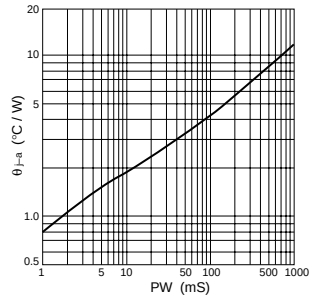
Characteristic curves

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

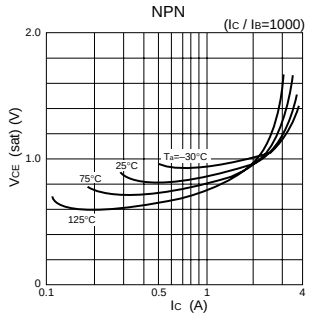


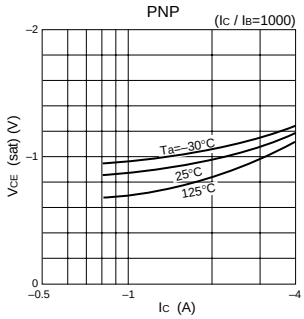


θ_{j-a}-PW Characteristics

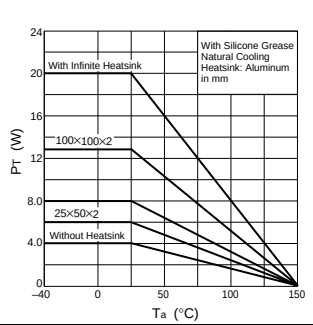


V_{CE}(sat)-I_C Temperature Characteristics (Typical)





P_T-T_a Characteristics



Safe Operating Area (SOA)

