

STA405A

Silicon NPN Triple Diffused Planar Darlington

Maximum Ratings

(Ta = 25°C)

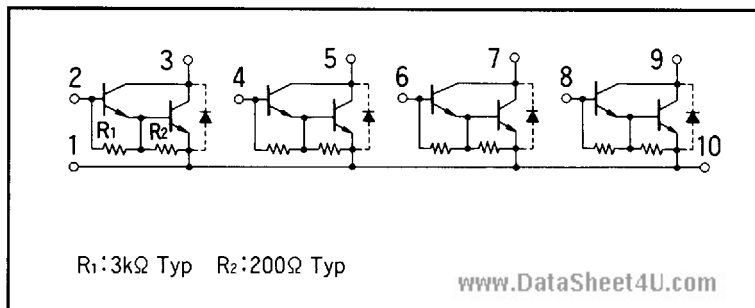
Item	Symbol	Rated	Unit
Collector-to-Base Voltage	V _{CB0}	100	V
Collector-to-Emitter Voltage	V _{CE0}	80	V
Emitter-to-Base Voltage	V _{EB0}	6	V
Collector Current	I _c	4	A
Collector Current	I _{CP}	8 (P _w ≤ 10ms, D _u ≤ 50%)	A
Total Power Dissipation	P _T	4 (Ta = 25°C)	W
		20 (T _c = 25°C)	
Operating Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-40 ~ +150	°C

Electrical Characteristics

(Ta = 25°C)

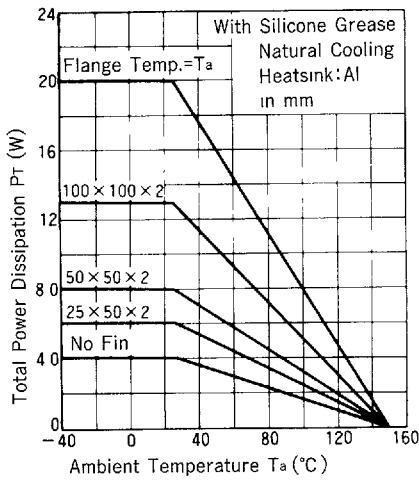
Item	Symbol	Conditions	Specification			Unit
			min	typ	max	
Collector Cut-off Current	I _{CBO}	V _{CB} = 100V			100	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} = 6V			10	mA
Collector-to-Emitter Voltage	V _{CE0}	I _c = 10mA	80			V
DC Forward Current Transfer Ratio	h _{FE}	V _{CE} = 4V, I _c = 3A	1000			
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _c = 3A, I _B = 10mA			2.0	V
Turn on Time	t _{on}	I _c = 3A, I _{B1} = -I _{B2} = 10mA		1.0		μs
Storage Time	t _{stg}			4.0		μs
Fall Time	t _f			1.5		μs

Equivalent Circuit Diagram

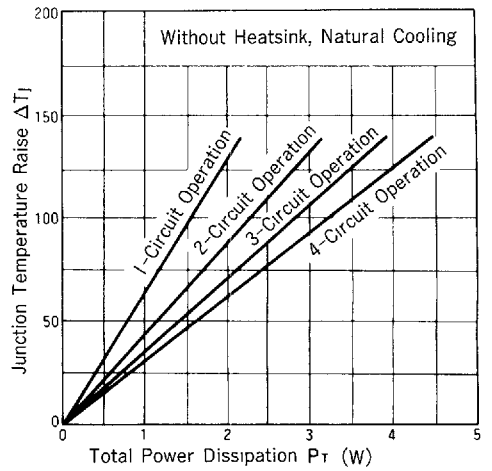


Characteristic Curves

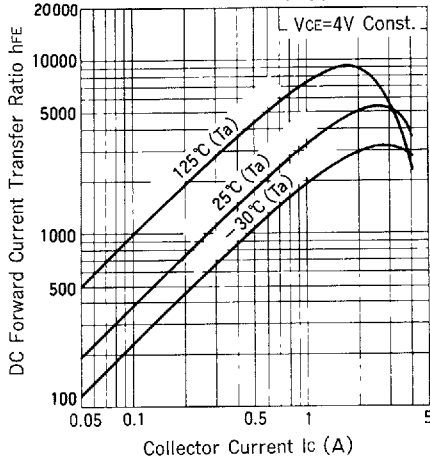
P_T - T_a Characteristics



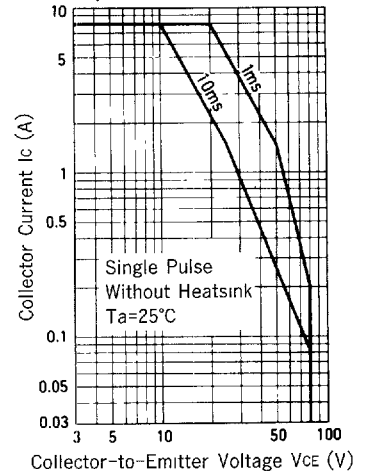
ΔT_j - P_T Characteristics



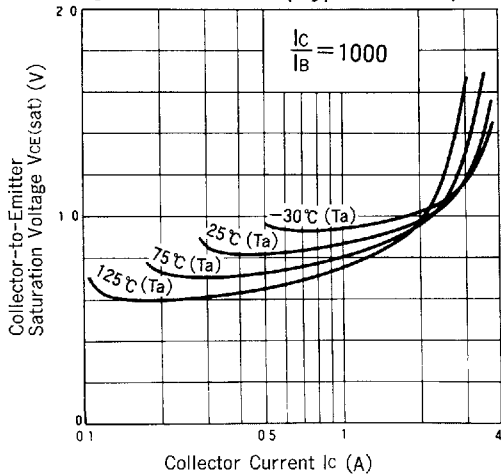
h_{FE} - I_C Temperature Characteristics (Typical Value)



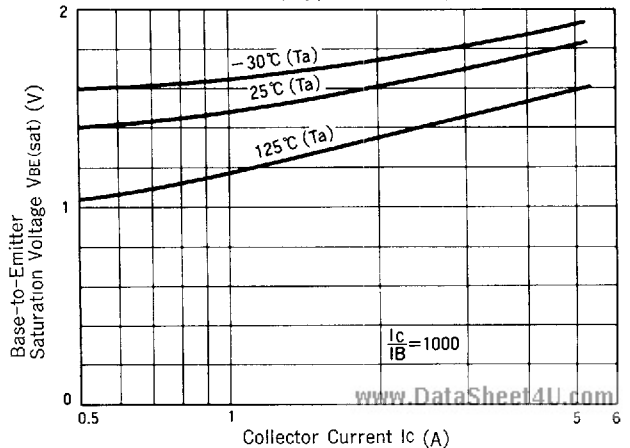
Maximum Areas For Safe Operation (ASO)



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



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



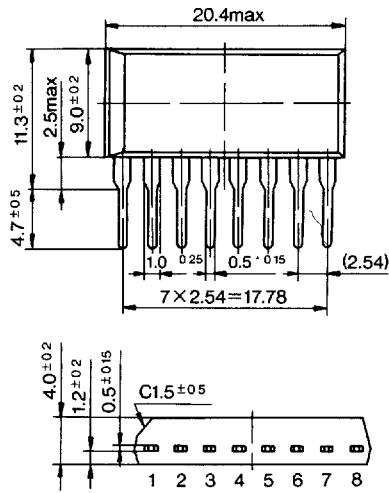
Notes on using products

www.DataSheet4U.com

Outline Drawings (Unit:in mm)

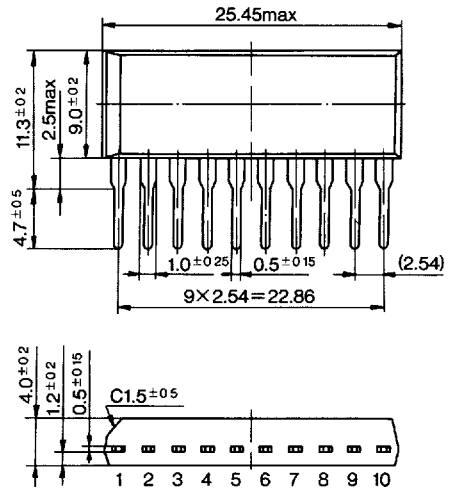
STA Family

STA300 Series



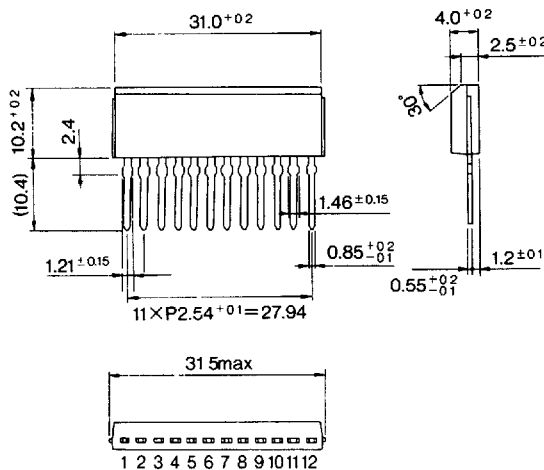
Weight Approx. 2.0g

STA400 Series



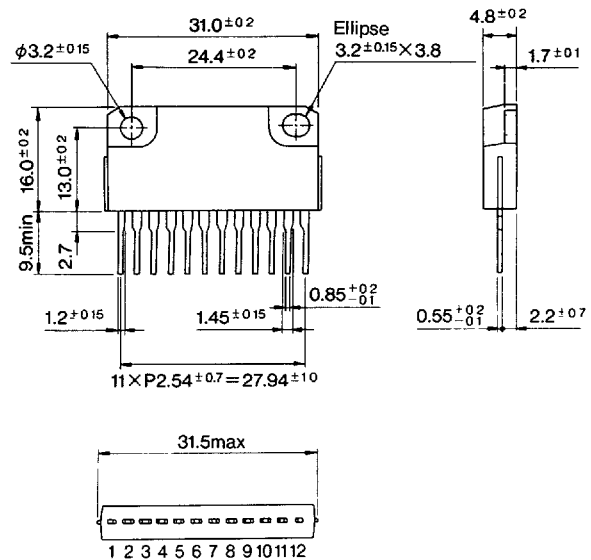
Weight Approx. 2.6g

SMA Family



Weight Approx. 4.0g

SLA Family



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Weight Approx. 6.0g