

SLA4036

NPN Darlington

With built-in flywheel diode

External dimensions SLA (15-pin)

Absolute maximum ratings

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

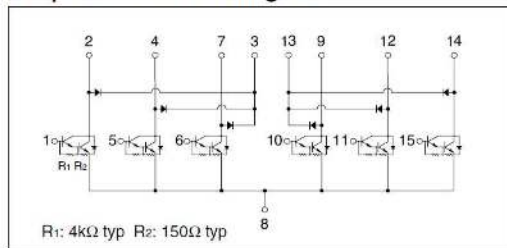
Symbol	Ratings	Unit
V_{CB0}	120	V
V_{CE0}	120	V
V_{E0}	6	V
I_c	2	A
I_{cP}	4 ($PW \leq 1\text{ms}$, $D_u \leq 50\%$)	A
I_b	0.2	A
I_F	2 ($PW \leq 0.5\text{ms}$, $D_u \leq 25\%$)	A
I_{FSM}	4 ($PW \leq 10\text{ms}$, Single pulse)	A
V_R	120	V
P_T	5 ($T_a=25^\circ\text{C}$)	W
	25 ($T_c=25^\circ\text{C}$)	
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_{cB0}			10	μA	$V_{CB}=120\text{V}$
I_{E0}			10	mA	$V_{EB}=6\text{V}$
V_{CE0}	120			V	$I_c=10\text{mA}$
$V_{CE0(SUS)}$	120			V	$I_c=1\text{A}$
h_{FE}	2000	5000	12000		$V_{CE}=4\text{V}$, $I_c=1\text{A}$
$V_{CE(sat)}$		1.1	1.5	V	$I_c=1\text{A}$, $I_b=2\text{mA}$
$V_{BE(sat)}$		1.8	2.2	V	
V_{FEC}		1.3	1.8	V	$I_{FEC}=0.5\text{A}$
t_{on}		0.5		μs	$V_{CC} \approx 30\text{V}$, $I_c=0.5\text{A}$,
t_{stg}		4.5		μs	$I_{B1}=-I_{B2}=1\text{mA}$
t_f		1.2		μs	
f_r		50		MHz	$V_{CE}=12\text{V}$, $I_c=-0.1\text{A}$
C_{ob}		20		pF	$V_{CB}=10\text{V}$, $f=1\text{MHz}$

Equivalent circuit diagram



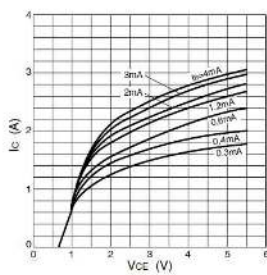
Diode for flyback voltage absorption

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

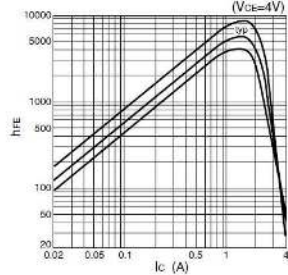
Symbol	Specification			Unit	Conditions
	min	typ	max		
V_R	120			V	$I_R=10\mu\text{A}$
V_F			1.8	V	$I_F=1\text{A}$
I_R			10	μA	$V_R=120\text{V}$
t_{rr}		100		ns	$I_F=\pm 100\text{mA}$

Characteristic curves

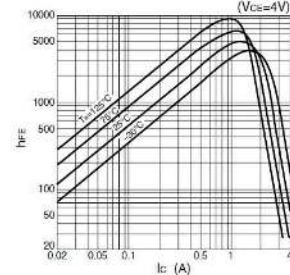
I_c - V_{CE} Characteristics (Typical)



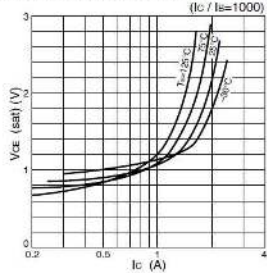
h_{FE} - I_c Characteristics (Typical)



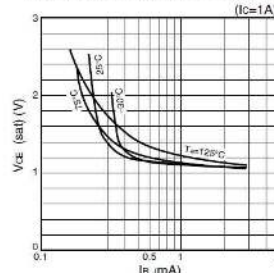
h_{FE} - I_c Temperature Characteristics (Typical)



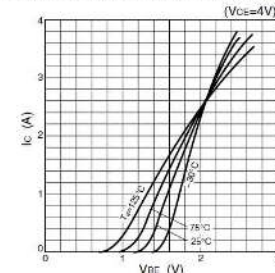
$V_{CE(sat)}$ - I_c Temperature Characteristics (Typical)



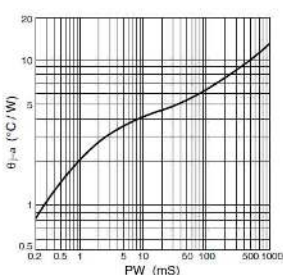
$V_{CE(sat)}$ - I_b Characteristics (Typical)



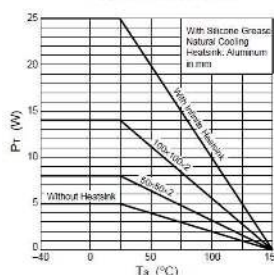
I_c - V_{BE} Temperature Characteristics (Typical)



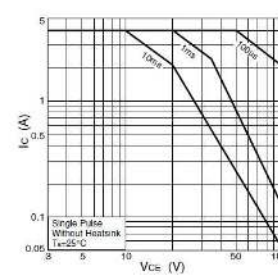
θ_{j-a} - PW Characteristics



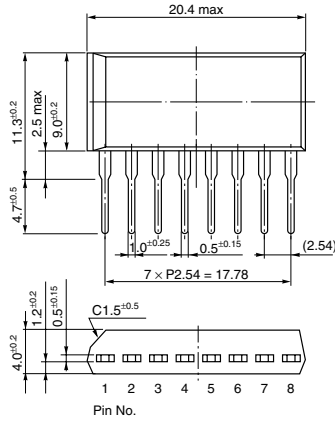
P_T - T_a Characteristics



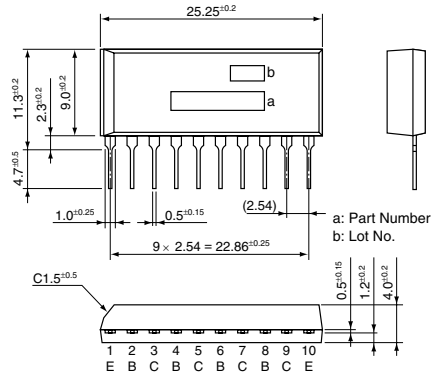
Safe Operating Area (SOA)



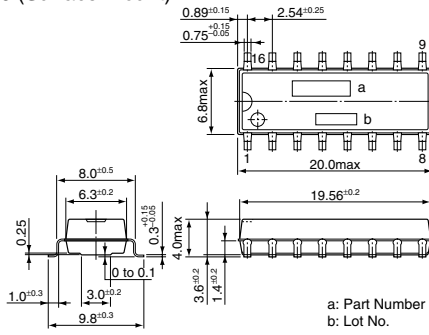
• SIP 8 (STA8Pin)



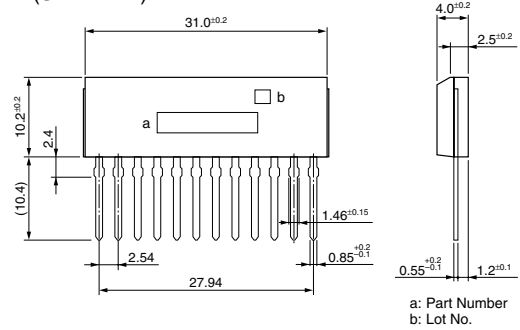
• SIP 10 (STA10Pin)



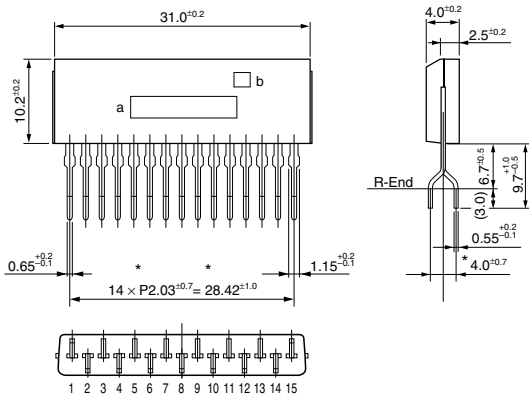
• PS 16 (Surface-Mount)



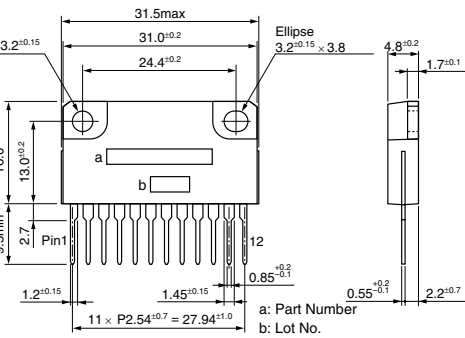
• SIP 12 (SMA12Pin)



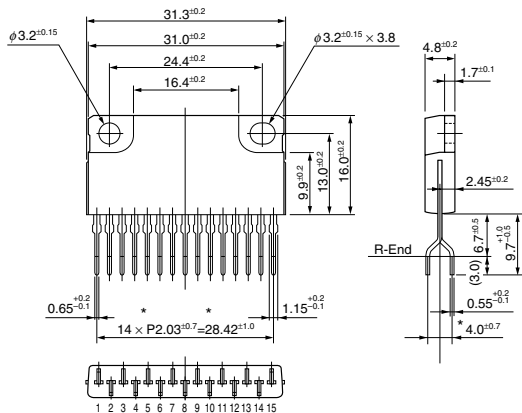
• SIP 15 (SMA15Pin)



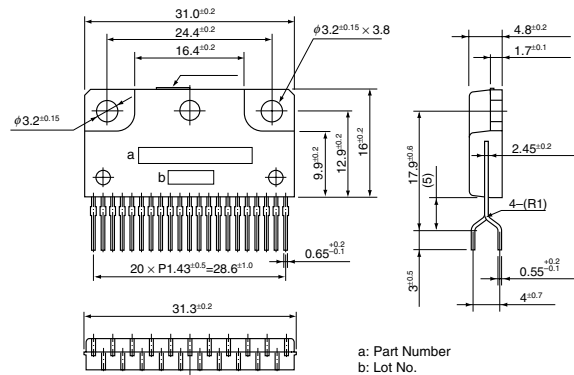
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)