

Absolute maximum ratings

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

Symbol	Ratings	Unit
V_{CB0}	120	V
V_{CE0}	100	V
V_{EBO}	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	4 ($T_a=25^\circ\text{C}$) 20 ($T_c=25^\circ\text{C}$)	W
T_j	150	$^\circ\text{C}$
T_{stg}	-40 to +150	$^\circ\text{C}$

Electrical characteristics

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

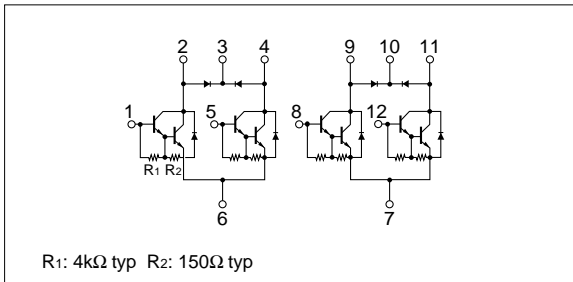
Symbol	Specification			Unit	Conditions
	min	typ	max		
I_{CBO}			10	μA	$V_{CB}=120\text{V}$
I_{EBO}			10	mA	$V_{EB}=6\text{V}$
V_{CE0}	100			V	$I_C=25\text{mA}$
h_{FE}	2000	6000	15000		$V_{CE}=4\text{V}$, $I_C=1\text{A}$
$V_{CE(sat)}$		1.1	1.5	V	$I_C=1\text{A}$, $I_B=2\text{mA}$
$V_{BE(sat)}$		1.7	2.0	V	

Diode for flyback voltage absorption

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

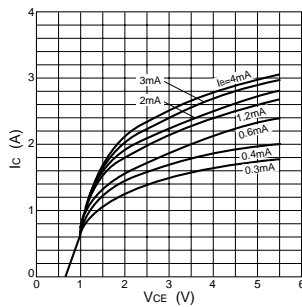
Symbol	Specification			Unit	Conditions
	min	typ	max		
V_R	120			V	$I_R=10\mu\text{A}$
V_F			1.8	V	$I_F=1\text{A}$
I_R			10	μA	$V_R=120\text{V}$
t_{rr}		100		ns	$I_F=\pm 100\text{mA}$

Equivalent circuit diagram

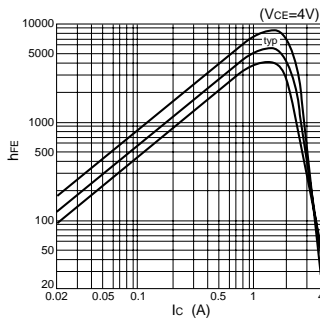


Characteristic curves

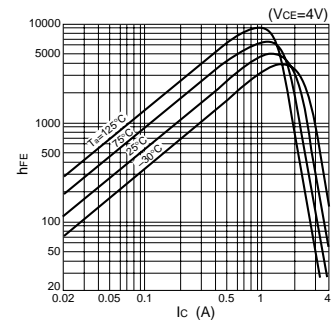
I_C - V_{CE} Characteristics (Typical)



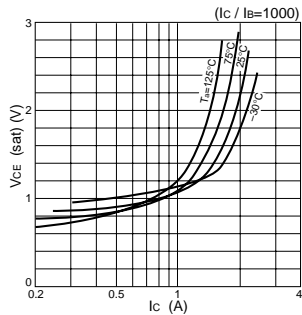
h_{FE} - I_C Characteristics (Typical)



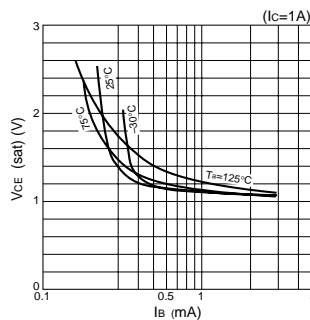
h_{FE} - I_C Temperature Characteristics (Typical)



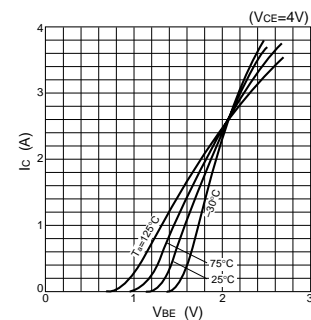
$V_{CE(sat)}$ - I_C Temperature Characteristics (Typical)



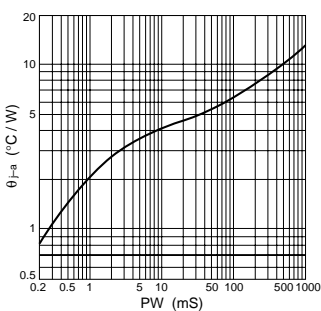
$V_{CE(sat)}$ - I_B Characteristics (Typical)



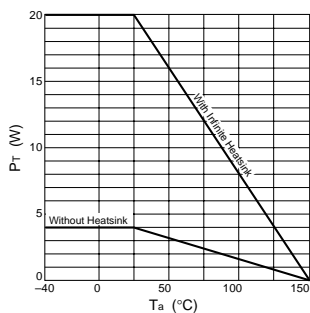
I_C - V_{BE} Temperature Characteristics (Typical)



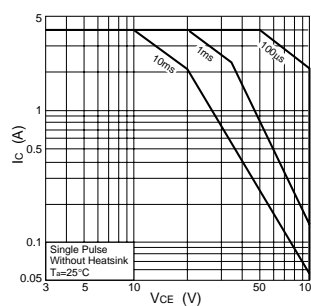
θ_{j-a} - PW Characteristics



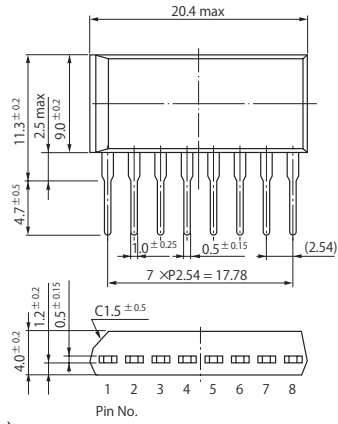
P_T - T_a Characteristics



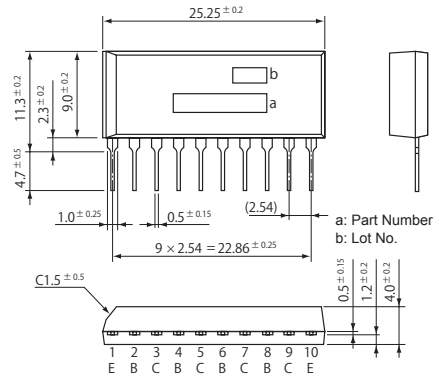
Safe Operating Area (SOA)



• SIP 8 (STA8Pin)



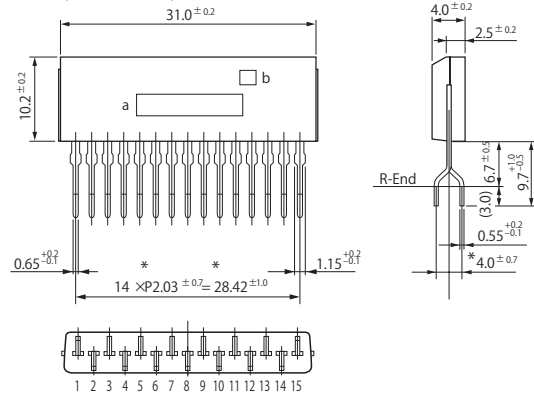
• SIP 10 (STA10Pin)



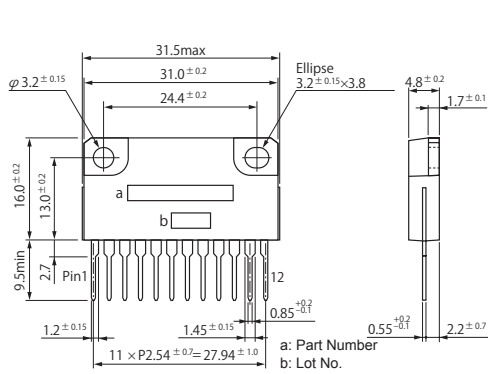
• SIP 12 (SMA12Pin)



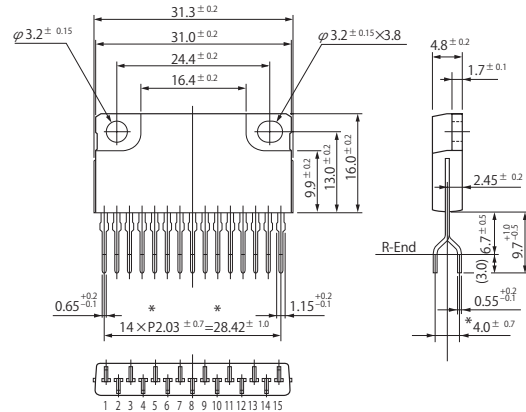
• SIP 15 (SMA15Pin)



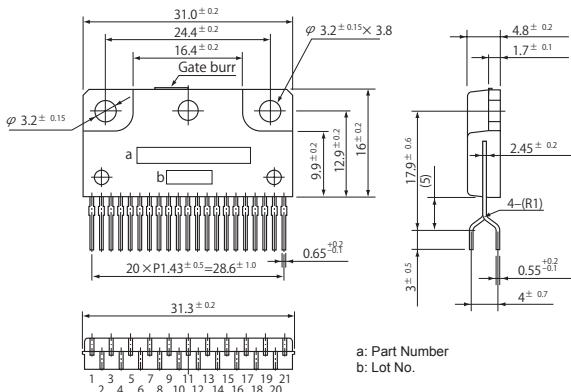
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)