

### Absolute maximum ratings

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

Symbol	Ratings	Unit
$V_{CB0}$	200	V
$V_{CEO}$	200	V
$V_{EBO}$	6	V
$I_c$	3	A
$I_{CP}$	6 ( $PW \leq 10\text{ms}$ , $D_u \leq 50\%$ )	A
$I_B$	0.2	A
$I_F$	3 ( $PW \leq 0.5\text{ms}$ , $D_u \leq 25\%$ )	A
$I_{FSM}$	6 ( $PW \leq 10\text{ms}$ , single)	A
$V_R$	200	V
$P_T$	5 ( $T_a=25^\circ\text{C}$ ) 25 ( $T_c=25^\circ\text{C}$ )	W
$T_j$	150	$^\circ\text{C}$
$T_{stg}$	-40 to +150	$^\circ\text{C}$

### Electrical characteristics

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

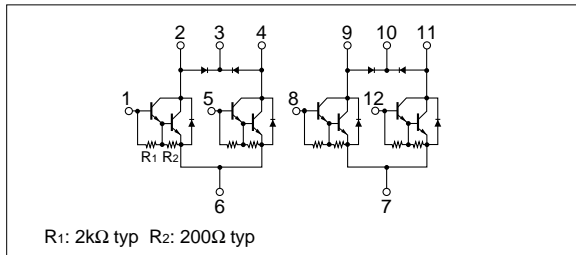
Symbol	Specification			Unit	Conditions
	min	typ	max		
$I_{CBO}$			10	$\mu\text{A}$	$V_{CB}=200\text{V}$
$I_{EBO}$			10	mA	$V_{EB}=6\text{V}$
$V_{CEO}$	200			V	$I_c=10\text{mA}$
$h_{FE}$	1000	6000	15000		$V_{CE}=4\text{V}$ , $I_c=1.5\text{A}$
$V_{CE(sat)}$		1.1	1.5	V	$I_c=1.5\text{A}$ , $I_b=3\text{mA}$
$V_{BE(sat)}$		1.7	2.0	V	
$V_{FEC}$			1.5	V	$I_{FEC}=2.0\text{A}$

### Diode for flyback voltage absorption

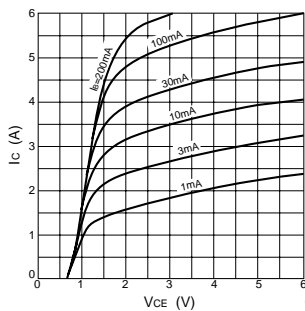
( $T_a=25^\circ\text{C}$ )

Symbol	Specification			Unit	Conditions
	min	typ	max		
$V_R$	200			V	$I_R=10\mu\text{A}$
$V_F$			1.6	V	$I_F=1\text{A}$
$I_R$			10	$\mu\text{A}$	$V_R=200\text{V}$
$t_{rr}$		100		ns	$I_F=\pm 100\text{mA}$

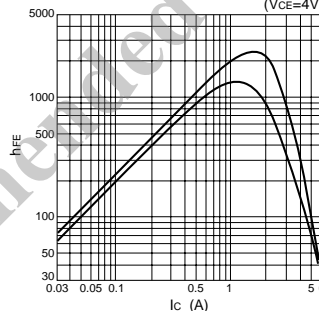
### Equivalent circuit diagram



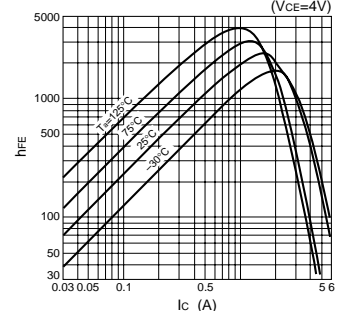
**$I_c$ - $V_{CE}$  Characteristics (Typical)**



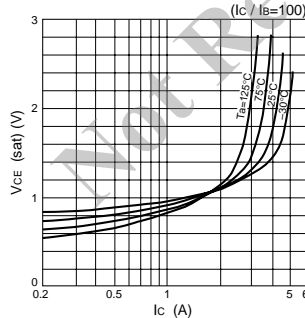
**$h_{FE}$ - $I_c$  Characteristics (Typical)**



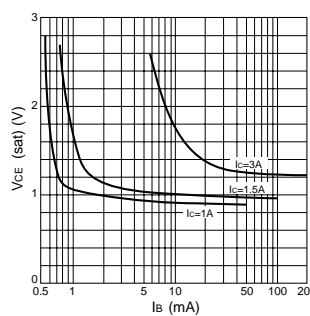
**$h_{FE}$ - $I_c$  Temperature Characteristics (Typical)**



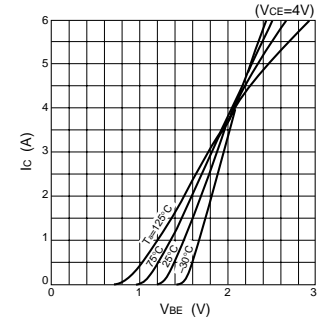
**$V_{CE(sat)}$ - $I_c$  Temperature Characteristics (Typical)**



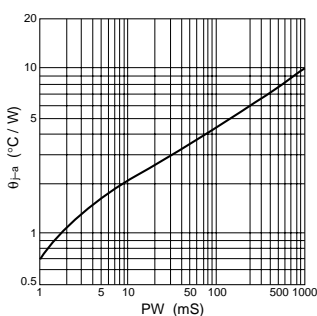
**$V_{CE(sat)}$ - $I_b$  Characteristics (Typical)**



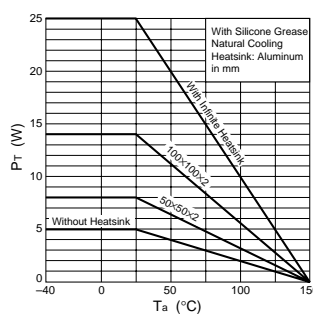
**$I_c$ - $V_{BE}$  Temperature Characteristics (Typical)**



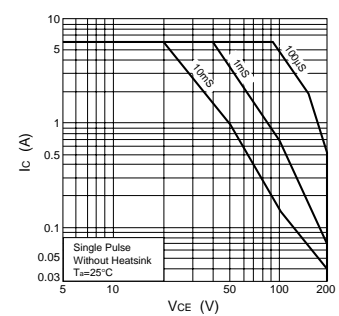
**$\theta_{j-a}$ -PW Characteristics**



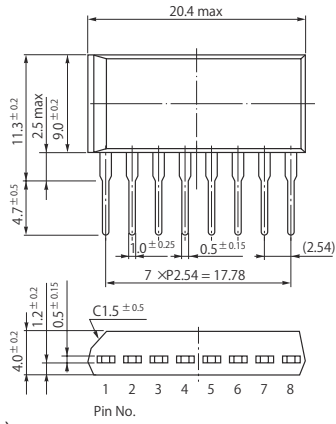
**Pr- $T_a$  Characteristics**



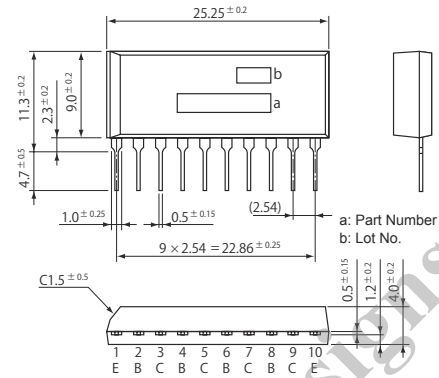
**Safe Operating Area (SOA)**



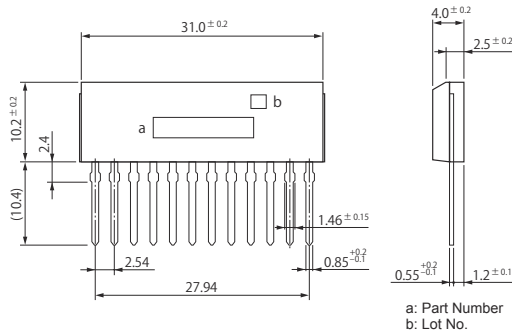
• SIP 8 (STA8Pin)



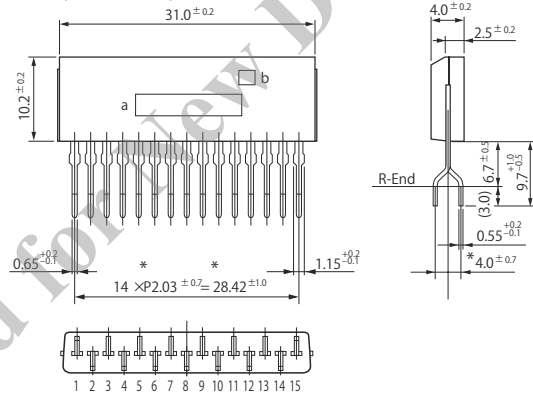
• SIP 10 (STA10Pin)



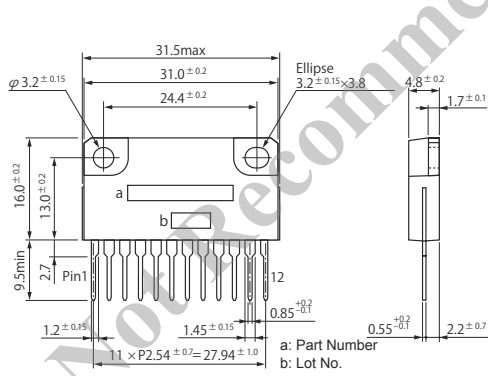
• SIP 12 (SMA12Pin)



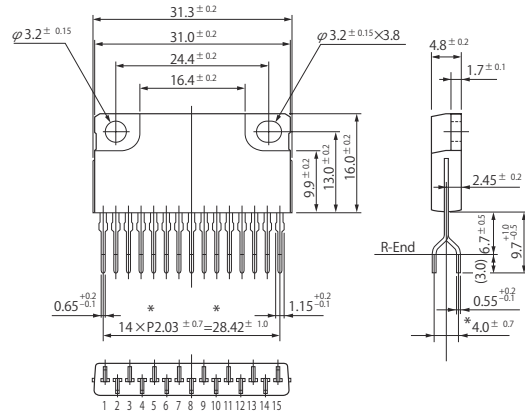
• SIP 15 (SMA15Pin)



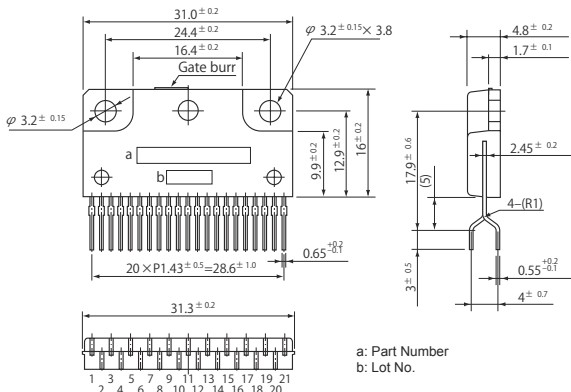
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)