

#### Absolute maximum ratings

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

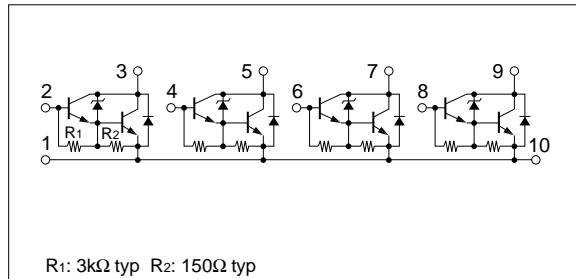
Symbol	Ratings	Unit
$V_{CB0}$	$60\pm 10$	V
$V_{CE0}$	$60\pm 10$	V
$V_{EB0}$	6	V
$I_c$	4	A
$I_{cP}$	8 (PW $\leq$ 10ms, $D_u\leq$ 50%)	A
$P_T$	4 ( $T_a=25^\circ\text{C}$ )	W
	20 ( $T_c=25^\circ\text{C}$ )	
$T_j$	150	$^\circ\text{C}$
$T_{stg}$	-40 to +150	$^\circ\text{C}$

#### Electrical characteristics

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

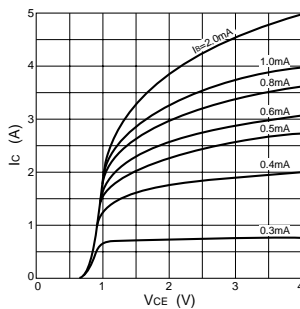
Symbol	Specification			Unit	Conditions
	min	typ	max		
$I_{CBO}$			100	$\mu\text{A}$	$V_{CB}=50\text{V}$
$I_{EBO}$			10	mA	$V_{EB}=6\text{V}$
$V_{CE0}$	50	60	70	V	$I_c=10\text{mA}$
$h_{FE}$	1000				$V_{CE}=4\text{V}$ , $I_c=3\text{A}$
$V_{CE(sat)}$			2.0	V	$I_c=3\text{A}$ , $I_b=10\text{mA}$
$t_{on}$		1.0		$\mu\text{s}$	$V_{CC}\approx 30\text{V}$ , $I_c=3\text{A}$ , $I_{B1}=-I_{B2}=10\text{mA}$
$t_{stg}$		4.0		$\mu\text{s}$	
$t_f$		1.5		$\mu\text{s}$	

#### Equivalent circuit diagram

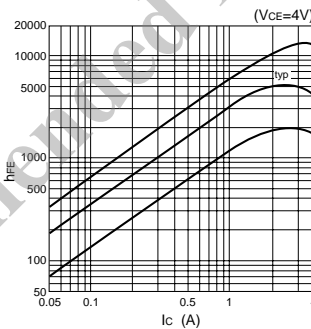


#### Characteristic curves

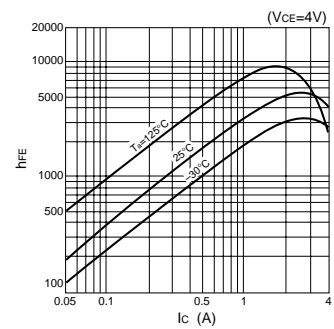
$I_c$ - $V_{CE}$  Characteristics (Typical)



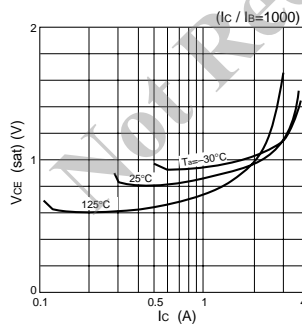
$h_{FE}$ - $I_c$  Characteristics (Typical)



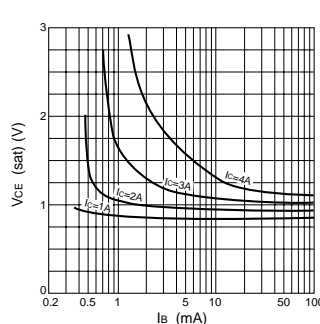
$h_{FE}$ - $I_c$  Temperature Characteristics (Typical)



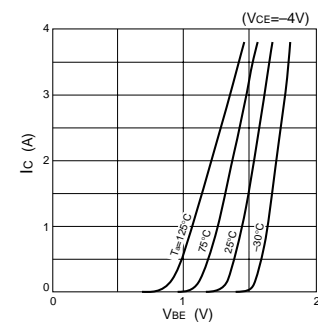
$V_{CE(sat)}$ - $I_c$  Temperature Characteristics (Typical)



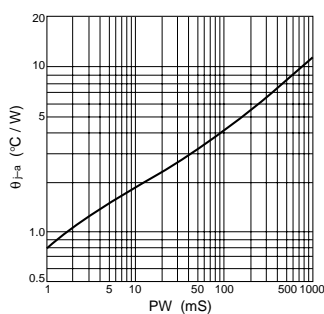
$V_{CE(sat)}$ - $I_b$  Characteristics (Typical)



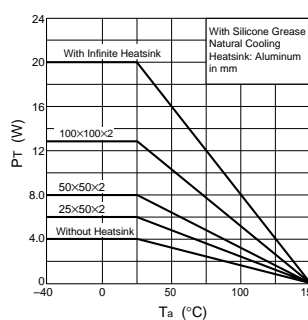
$I_c$ - $V_{BE}$  Temperature Characteristics (Typical)



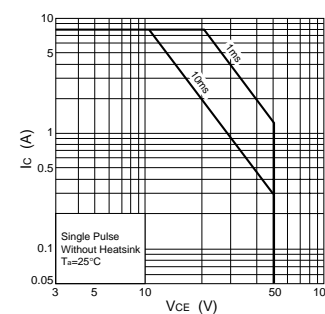
$\theta_{j-a}$ -PW Characteristics



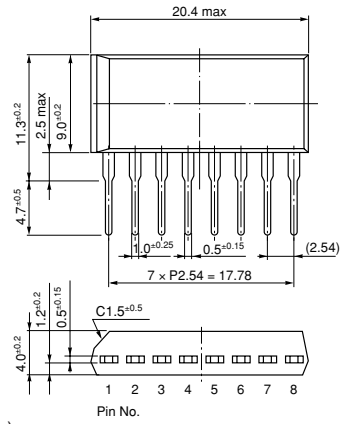
$P_T$ - $T_a$  Characteristics



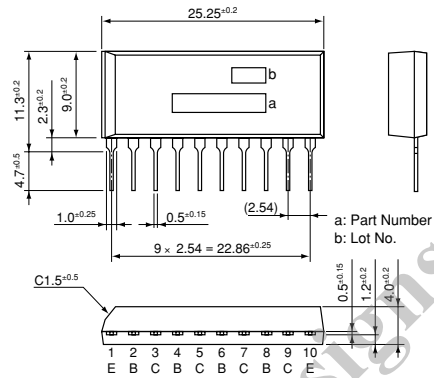
Safe Operating Area (SOA)



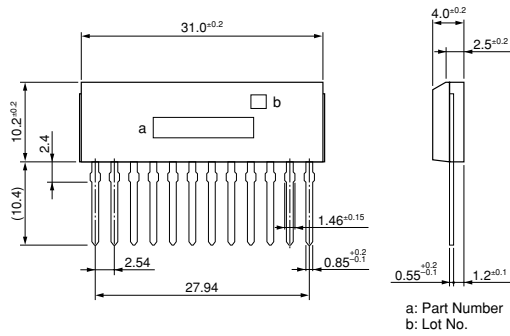
• SIP 8 (STA8Pin)



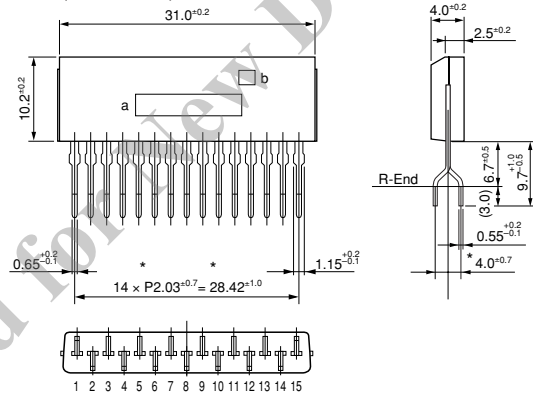
• SIP 10 (STA10Pin)



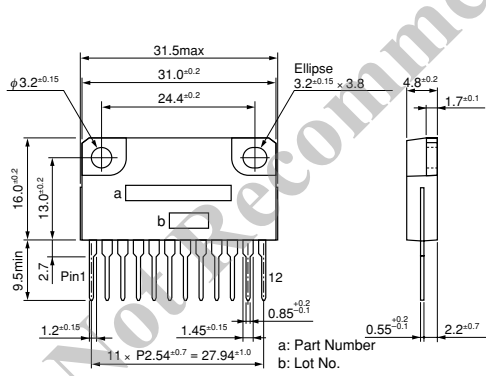
• SIP 12 (SMA12Pin)



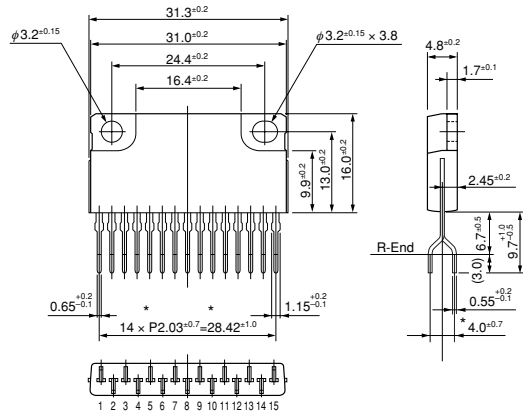
• SIP 15 (SMA15Pin)



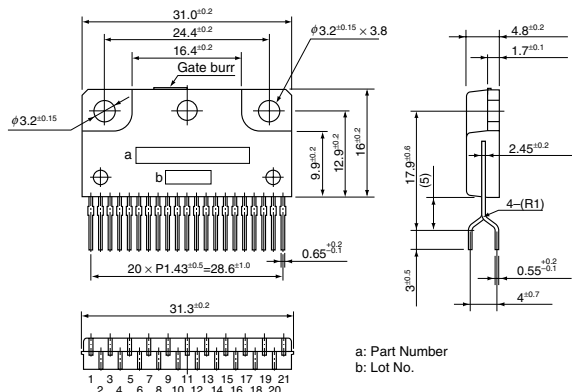
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 15 with Fin (SLA15Pin)



(Unit:mm)