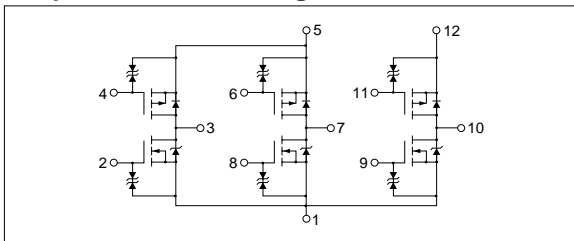


### Absolute maximum ratings

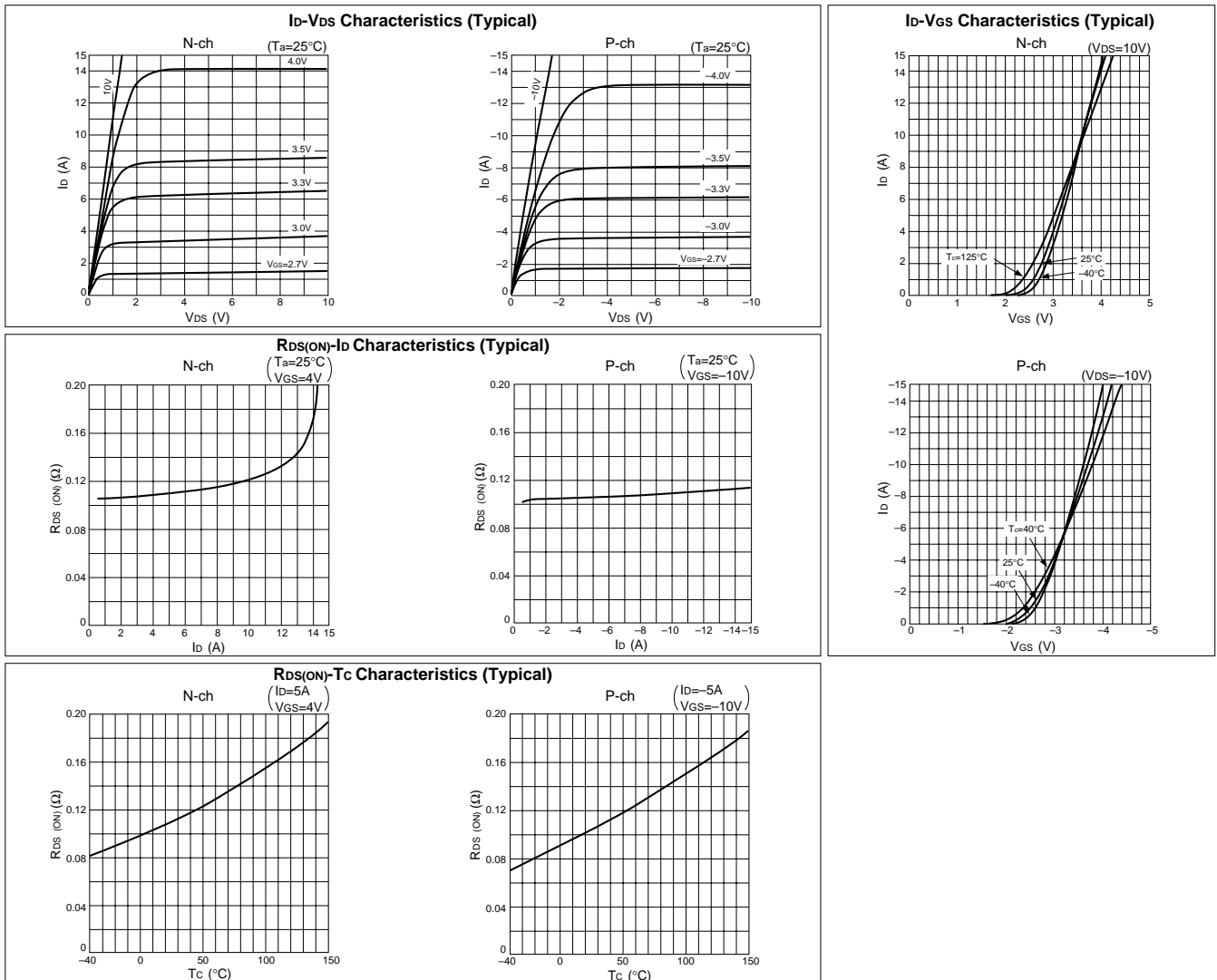
( $T_a=25^\circ\text{C}$ )

Symbol	Ratings		Unit
	N channel	P channel	
$V_{DSS}$	60	-60	V
$V_{GSS}$	$\pm 20$	$\pm 20$	V
$I_D$	10	-10	A
$I_{D(pulse)}$	15 (PW $\leq$ 1ms, duty $\leq$ 25%)	-15 (PW $\leq$ 1ms, duty $\leq$ 25%)	A
$P_T$	4 ( $T_a=25^\circ\text{C}$ , with all circuits operating, without heatsink)		W
	30 ( $T_c=25^\circ\text{C}$ , with all circuits operating, with infinite heatsink)		W
$\theta_{j-a}$	31.25 (Junction-Air, $T_a=25^\circ\text{C}$ , with all circuits operating)		$^\circ\text{C/W}$
$\theta_{j-c}$	4.166 (Junction-Case, $T_c=25^\circ\text{C}$ , with all circuits operating)		$^\circ\text{C/W}$
Tch	150		$^\circ\text{C}$
Tstg	-40 to +150		$^\circ\text{C}$

### Equivalent circuit diagram



### Characteristic curves

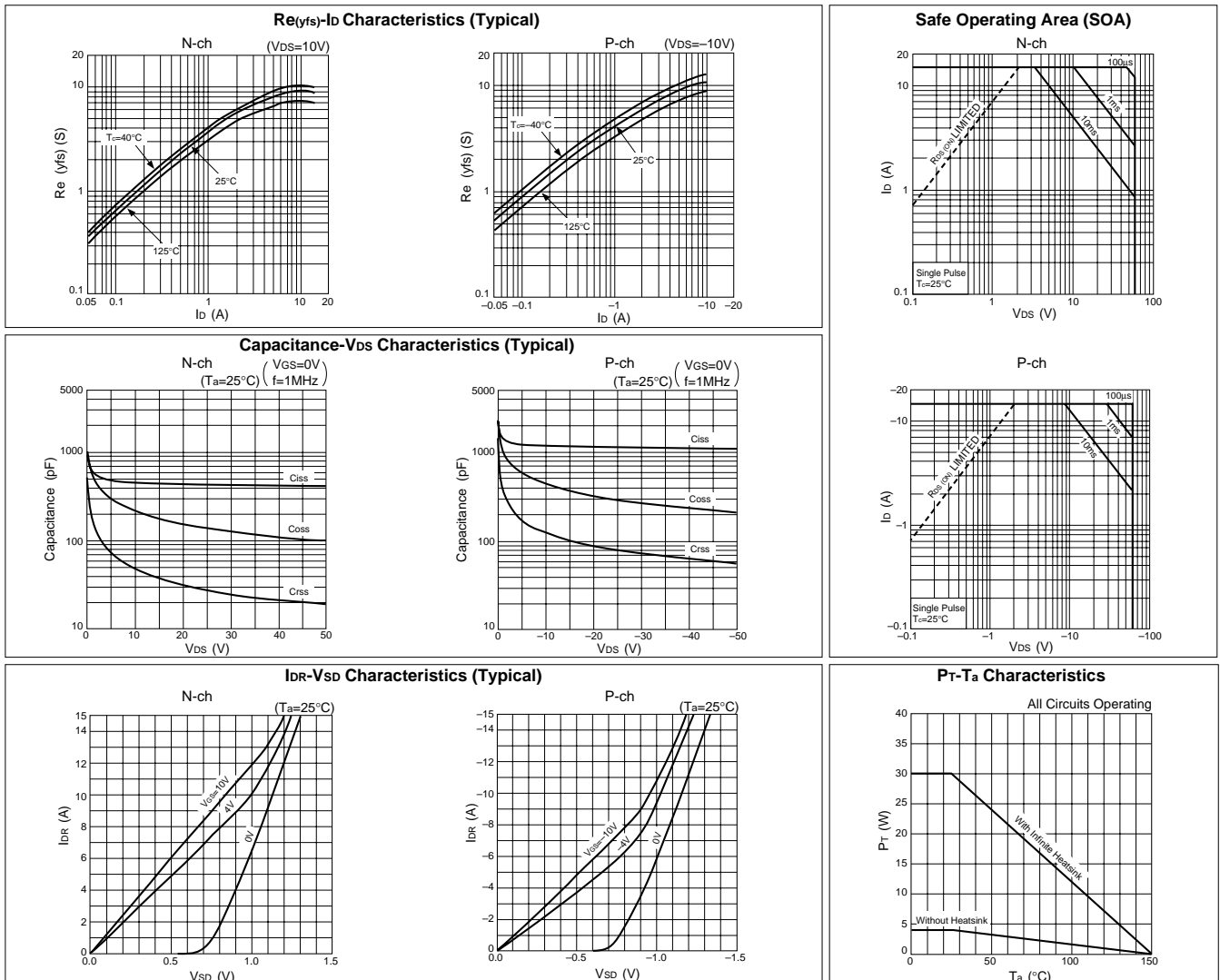


## Electrical characteristics

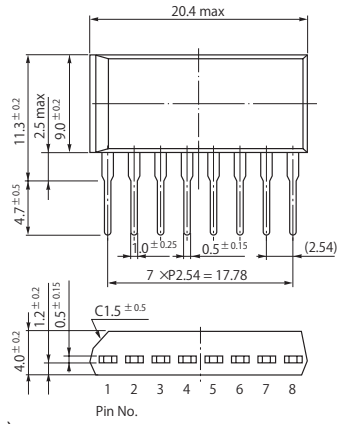
( $T_a=25^\circ\text{C}$ )

Symbol	N channel					P channel				
	Specification			Unit	Conditions	Specification			Unit	Conditions
	min	typ	max			min	typ	max		
$V_{(BR)DSS}$	60			V	$I_D=100\mu\text{A}, V_{GS}=0\text{V}$	-60			V	$I_D=-100\mu\text{A}, V_{GS}=0\text{V}$
$I_{GSS}$			$\pm 10$	$\mu\text{A}$	$V_{GS}=\pm 20\text{V}$			$\pm 10$	$\mu\text{A}$	$V_{GS}=\pm 20\text{V}$
$I_{DSS}$			100	$\mu\text{A}$	$V_{DS}=60\text{V}, V_{GS}=0\text{V}$			-100	$\mu\text{A}$	$V_{DS}=-60\text{V}, V_{GS}=0\text{V}$
$V_{TH}$	1.0		2.0	V	$V_{DS}=10\text{V}, I_D=250\mu\text{A}$	-1.0		-2.0	V	$V_{DS}=-10\text{V}, I_D=-250\mu\text{A}$
$R_{e(yfs)}$		8.0		S	$V_{DS}=10\text{V}, I_D=5\text{A}$		8.7		S	$V_{DS}=-10\text{V}, I_D=-5\text{A}$
$R_{DS(ON)}$			0.14	$\Omega$	$V_{GS}=4\text{V}, I_D=5\text{A}$			0.14	$\Omega$	$V_{GS}=-10\text{V}, I_D=-5\text{A}$
$C_{iss}$		460		pF	$V_{DS}=10\text{V},$ $f=1.0\text{MHz},$ $V_{GS}=0\text{V}$		1200		pF	$V_{DS}=-10\text{V},$ $f=1.0\text{MHz},$ $V_{GS}=0\text{V}$
$C_{oss}$		225		pF			440		pF	
$C_{rss}$		50		pF			120		pF	
$t_d(\text{on})$		25		ns	$I_D=5\text{A}, V_{DD}=\pm 20\text{V},$ $R_L=4\Omega, V_{GS}=5\text{V},$ $R_G=50\Omega,$ see Fig.3 on page 16.		50		ns	$I_D=-5\text{A}, V_{DD}=\pm 20\text{V},$ $R_L=4\Omega, V_{GS}=-5\text{V},$ $R_G=50\Omega,$ see Fig.4 on page 16.
$t_r$		110		ns			170		ns	
$t_d(\text{off})$		90		ns			180		ns	
$t_f$		55		ns			100		ns	
$V_{SD}$		1.15		ns		$I_{SD}=10\text{A}, V_{GS}=0\text{V}$		-1.25		
$t_{rr}$		75		V	$I_{SD}=5\text{A}, di/dt=100\text{A}/\mu\text{s}$		100		ns	$I_{SD}=-5\text{A}, di/dt=100\text{A}/\mu\text{s}$

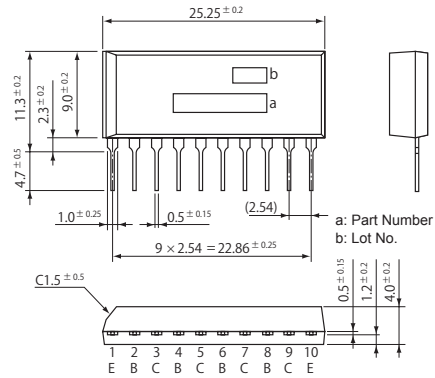
## Characteristic curves



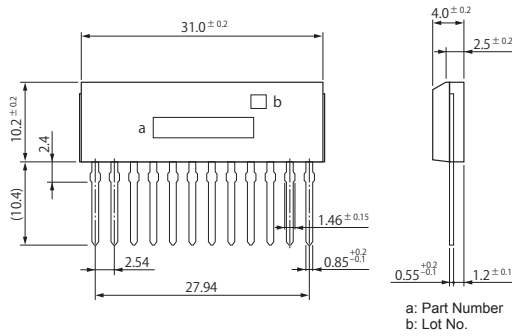
• SIP 8 (STA8Pin)



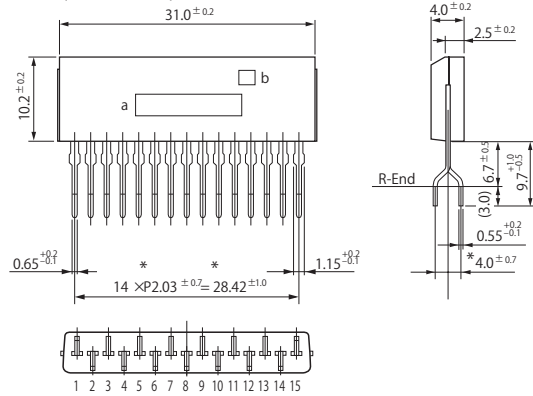
• SIP 10 (STA10Pin)



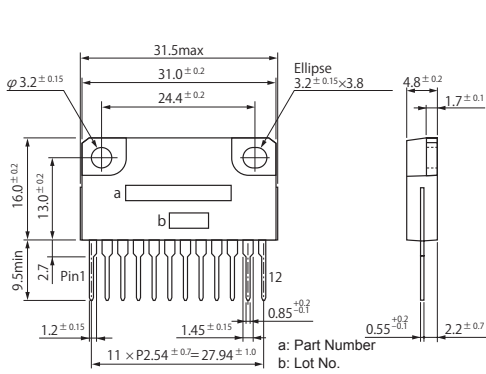
• SIP 12 (SMA12Pin)



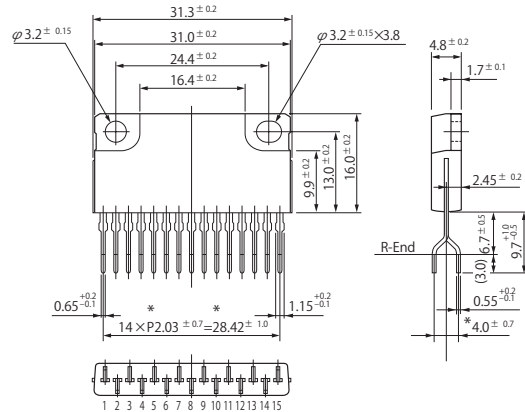
• SIP 15 (SMA15Pin)



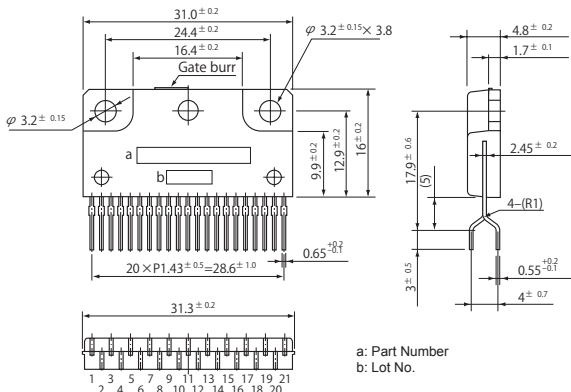
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)