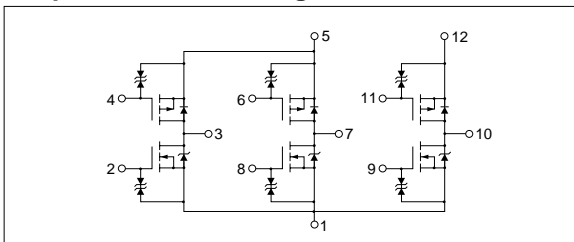


Absolute maximum ratings

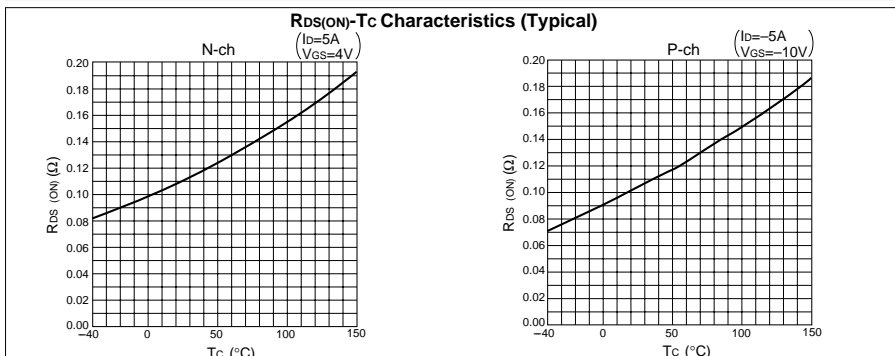
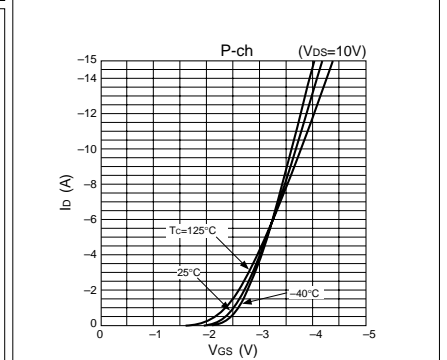
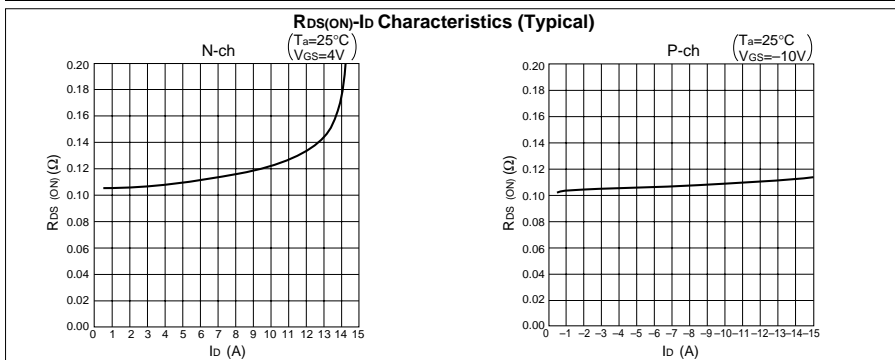
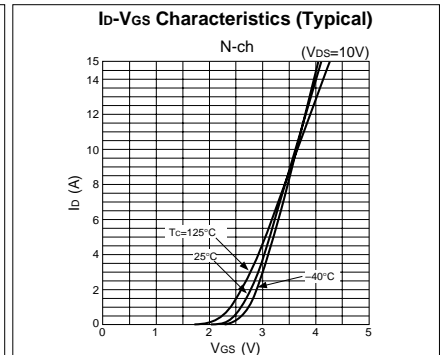
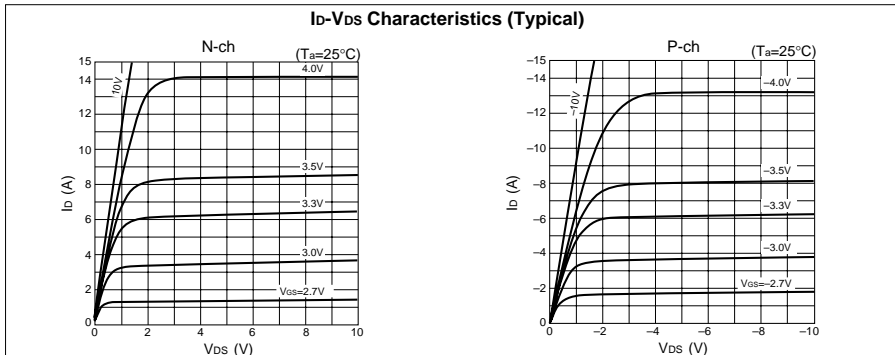
(Ta=25°C)

Symbol	Ratings		Unit
	N channel	P channel	
V _{DSS}	60	-60	V
V _{GSS}	±20	±20	V
I _D	10	-10	A
I _{D(pulse)}	15 (PW≤1ms, duty≤25%)	-15 (PW≤1ms, duty≤25%)	A
P _T	5 (Ta=25°C, with all circuits operating, without heatsink)		W
	40 (Tc=25°C, with all circuits operating, with infinite heatsink)		W
θ _{j-a}	25 (Junction-Air, Ta=25°C, with all circuits operating)		°C/W
θ _{j-c}	3.125 (Junction-Case, Tc=25°C, with all circuits operating)		°C/W
V _{ISO}	1000 (Between fin and lead pin, AC)		V _{rms}
T _{ch}	150		°C
T _{stg}	-40 to +150		°C

Equivalent circuit diagram



Characteristic curves

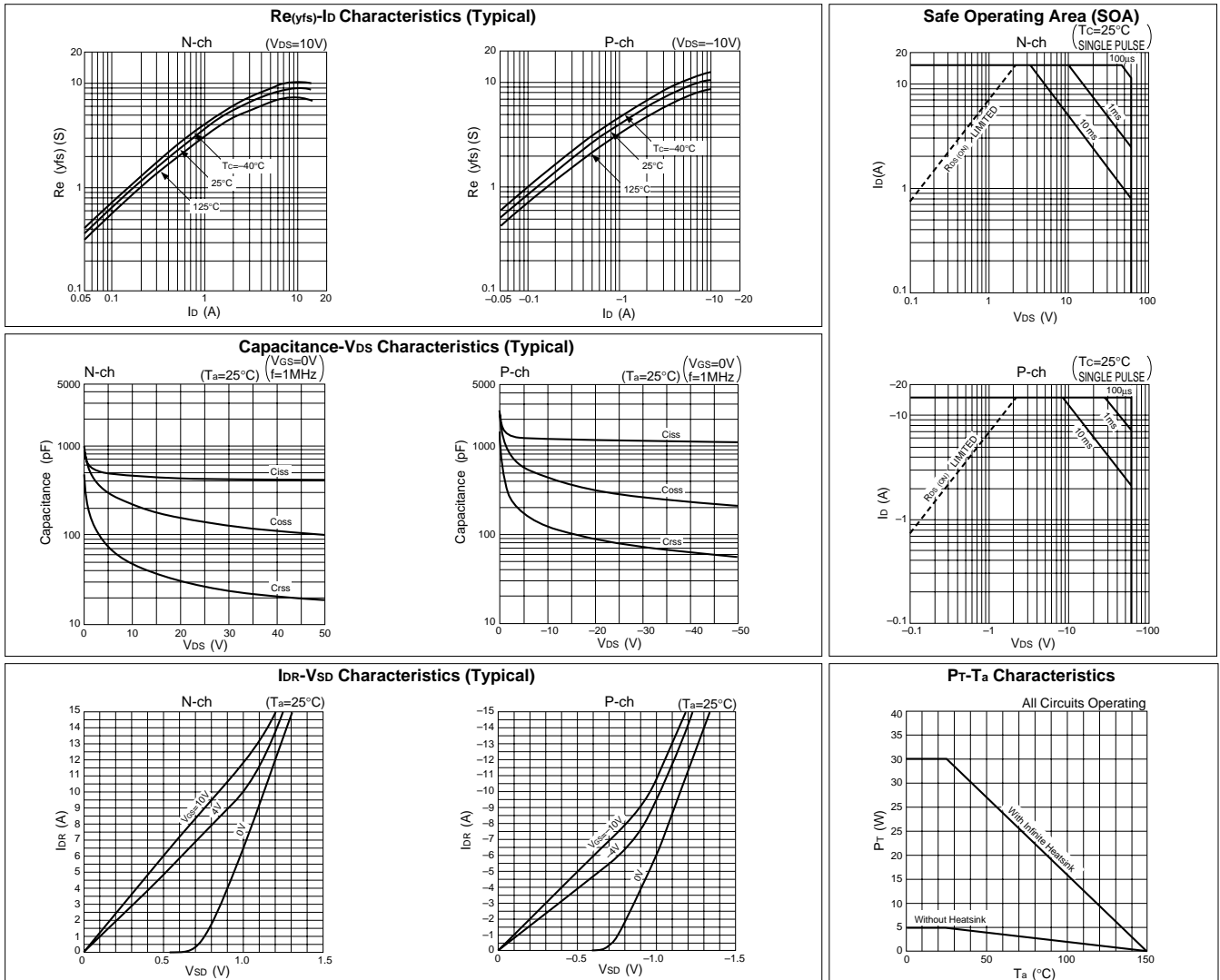


Electrical characteristics

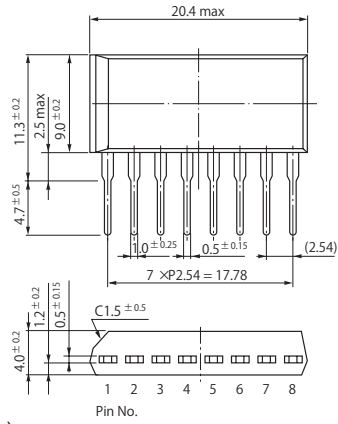
($T_a=25^\circ\text{C}$)

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}			± 10	μA	$V_{GS}=\pm 20\text{V}$			∓ 10	μA	$V_{GS}=\pm 20\text{V}$
I_{DSS}			100	μA	$V_{DS}=60\text{V}$, $V_{GS}=0\text{V}$			-100	μA	$V_{DS}=-60\text{V}$, $V_{GS}=0\text{V}$
V_{TH}	1.0		2.0	V	$V_{DS}=10\text{V}$, $I_D=250\mu\text{A}$	-1.0		-2.0	V	$V_{DS}=-10\text{V}$, $I_D=-250\mu\text{A}$
$Re_{(yfs)}$		8		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	Ω	$V_{GS}=4\text{V}$, $I_D=5\text{A}$			0.14	Ω	$V_{GS}=-10\text{V}$, $I_D=-5\text{A}$
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	
$t_{d(on)}$		25		ns	$I_D=5\text{A}$, $V_{DD}\approx 20\text{V}$, $R_L=4\Omega$, $V_{GS}=5\text{V}$, see Fig. 3 on page 16.		50		ns	$I_D=-5\text{A}$, $V_{DD}\approx 20\text{V}$, $R_L=4\Omega$, $V_{GS}=-5\text{V}$, see Fig. 4 on page 16.
t_r		110		ns			170		ns	
$t_{d(off)}$		90		ns			180		ns	
t_f		55		ns			100		ns	
V_{SD}		1.15		V	$I_{SD}=10\text{A}$, $V_{GS}=0\text{V}$		-1.25		V	$I_{SD}=-10\text{A}$, $V_{GS}=0\text{V}$
t_{rr}		75		ns	$I_{SD}=5\text{A}$, $V_{GS}=0\text{V}$, $di/dt=100\text{A}/\mu\text{s}$		100		ns	$I_{SD}=-5\text{A}$, $V_{GS}=0\text{V}$, $di/dt=100\text{A}/\mu\text{s}$

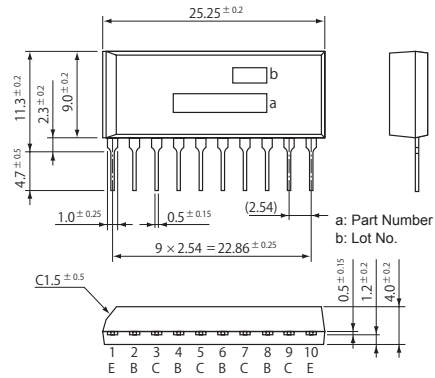
Characteristic curves



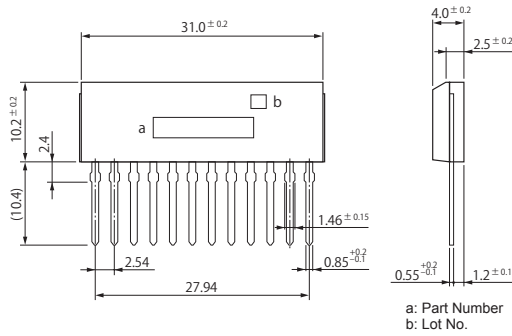
• SIP 8 (STA8Pin)



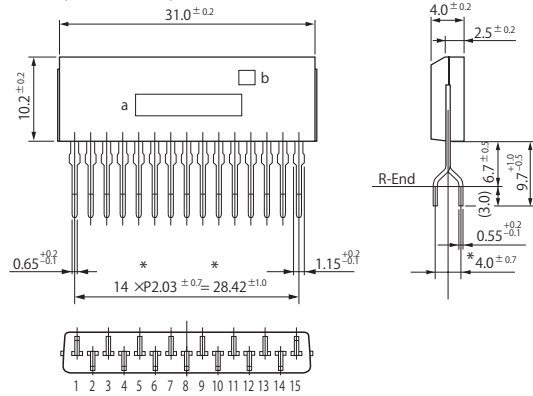
• SIP 10 (STA10Pin)



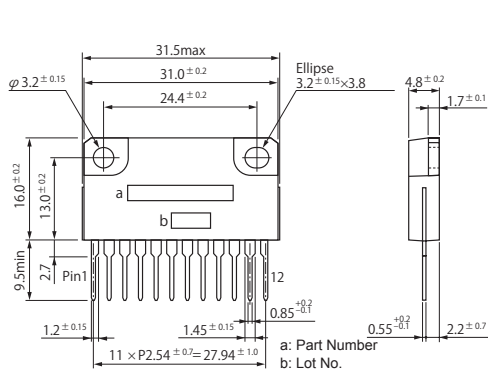
• SIP 12 (SMA12Pin)



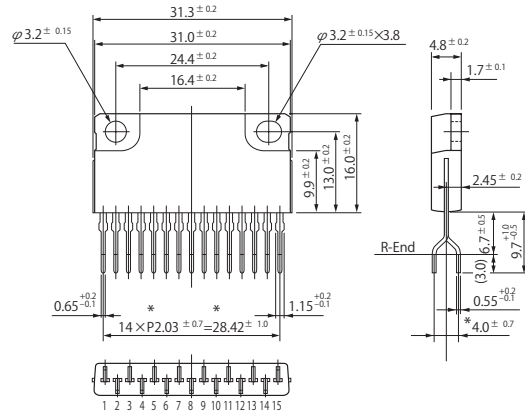
• SIP 15 (SMA15Pin)



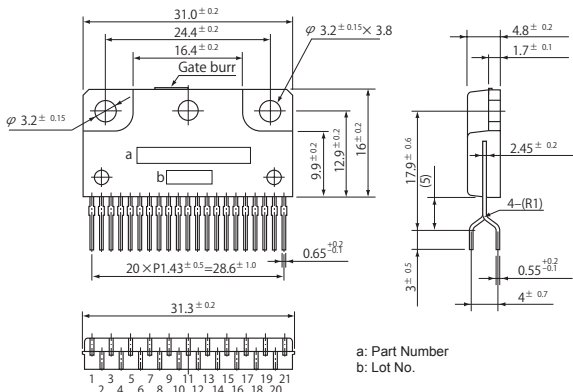
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)