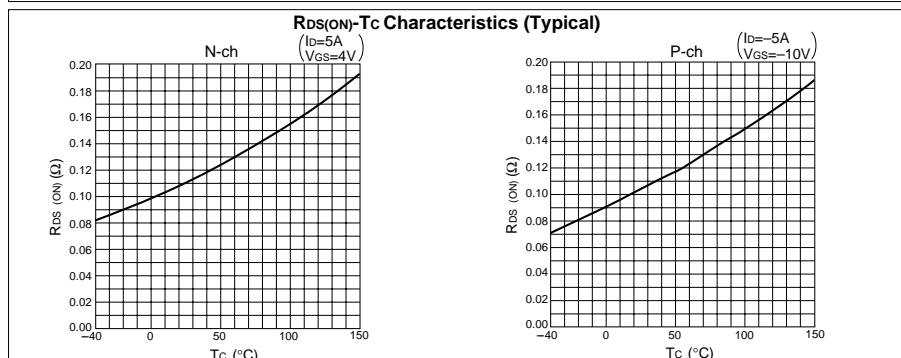
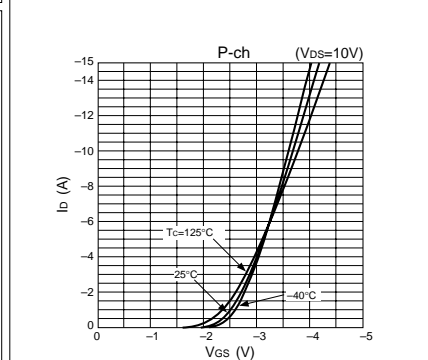
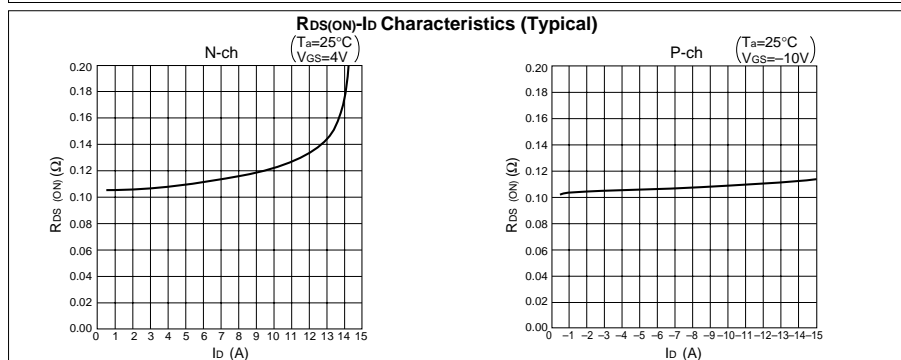
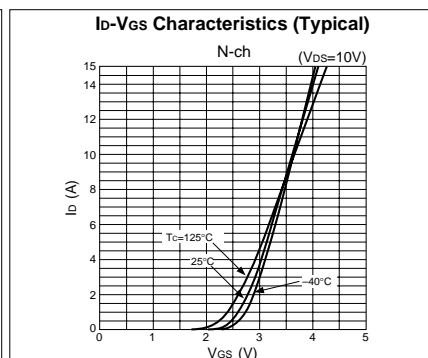
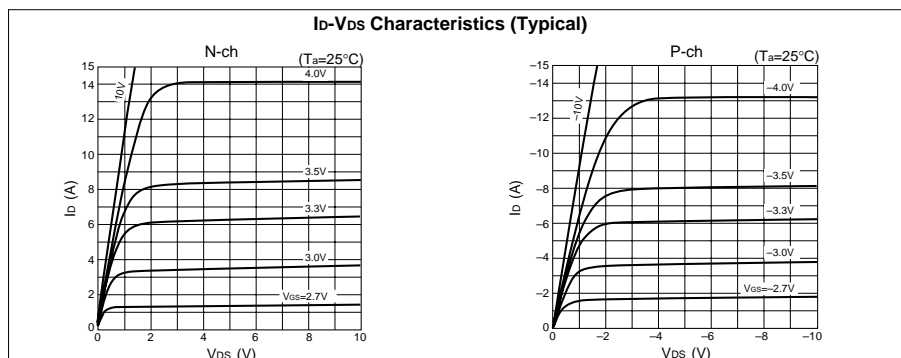
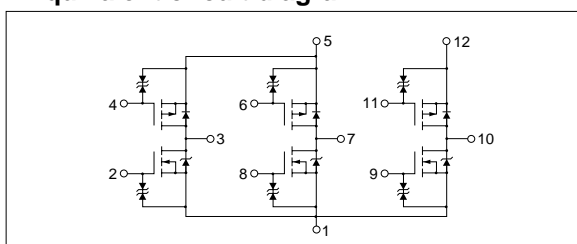


### Absolute maximum ratings

(Ta=25°C)

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

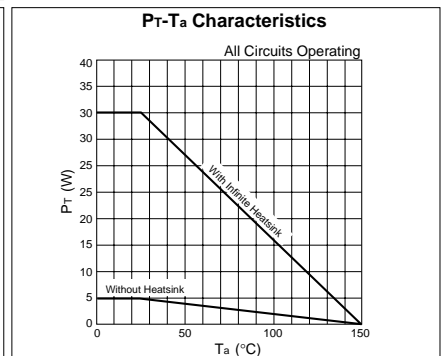
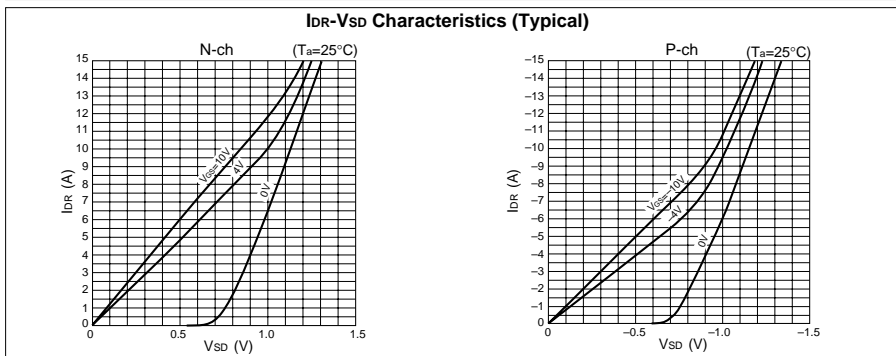
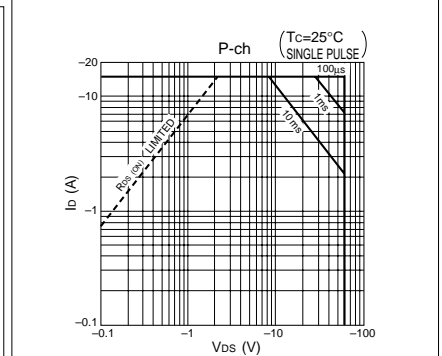
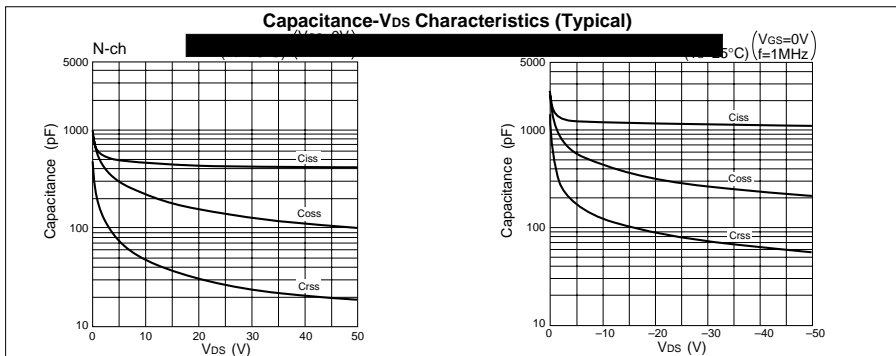
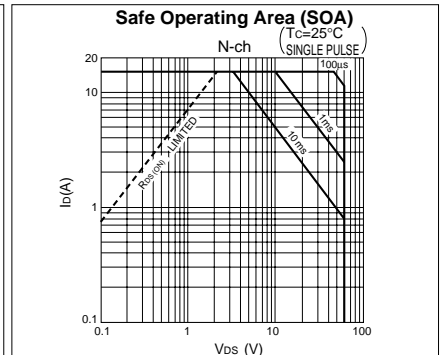
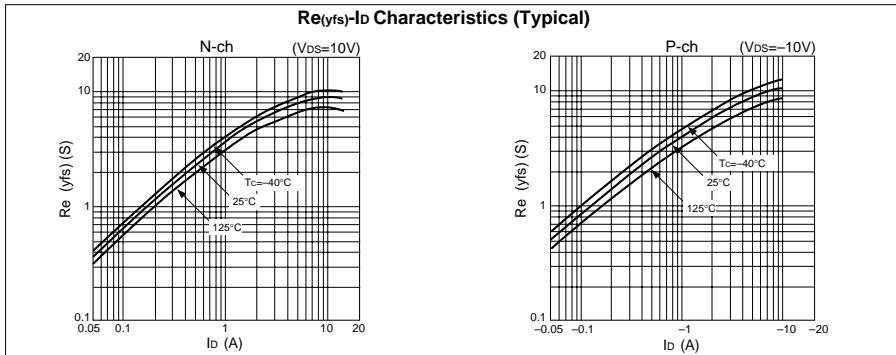
### Equivalent circuit diagram



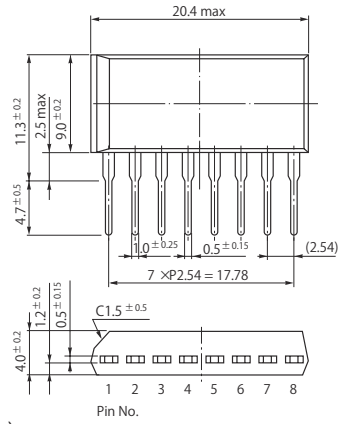
## Electrical characteristics

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

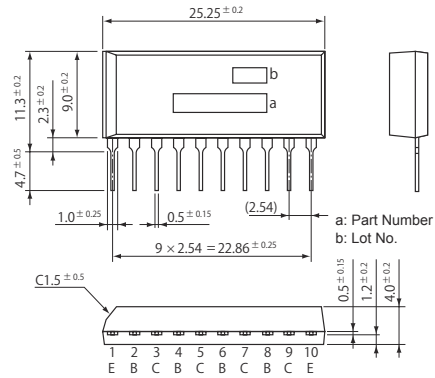
Symbol	N channel					P channel				
	Specification			Unit	Conditions	Specification			Unit	Conditions
	min	typ	max			min	typ	max		
$V_{(BR)DSS}$	60			V	$I_D=100\mu\text{A}$ , $V_{GS}=0\text{V}$	-60			V	$I_D=-100\mu\text{A}$ , $V_{GS}=0\text{V}$
$I_{GSS}$			$\pm 10$	$\mu\text{A}$	$V_{GS}=\pm 20\text{V}$			$\mp 10$	$\mu\text{A}$	$V_{GS}=\pm 20\text{V}$
$I_{DSS}$			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	$V_{DS}=-10\text{V}$ , $I_D=-250\mu\text{A}$
$Re_{(yfs)}$		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	$\Omega$	$V_{GS}=4\text{V}$ , $I_D=5\text{A}$			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	
$t_{d(on)}$		25		ns	$I_D=5\text{A}$ , $V_{DD}\div 20\text{V}$ , $R_L=4\Omega$ , $V_{GS}=5\text{V}$ , see Fig. 3 on page 16.		50		ns	$I_D=-5\text{A}$ , $V_{DD}\div 20\text{V}$ , $R_L=4\Omega$ , $V_{GS}=-5\text{V}$ , 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	$I_{SD}=-5\text{A}$ , $V_{GS}=0\text{V}$ , $di/dt=100\text{A}/\mu\text{s}$



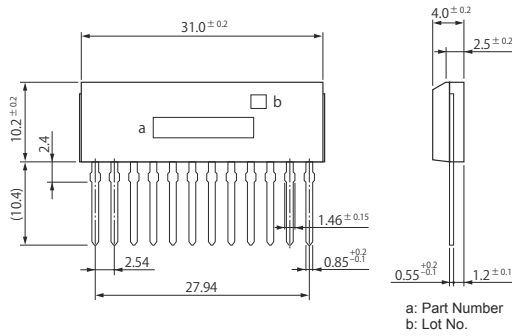
• SIP 8 (STA8Pin)



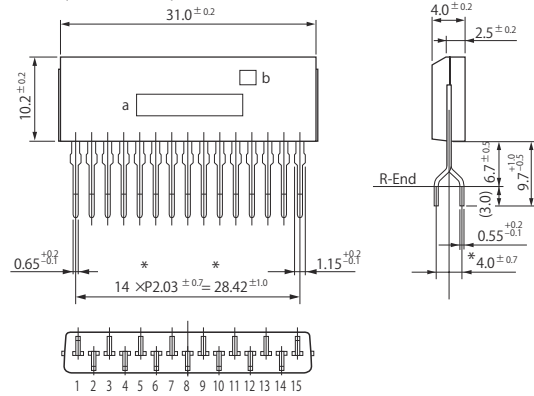
• SIP 10 (STA10Pin)



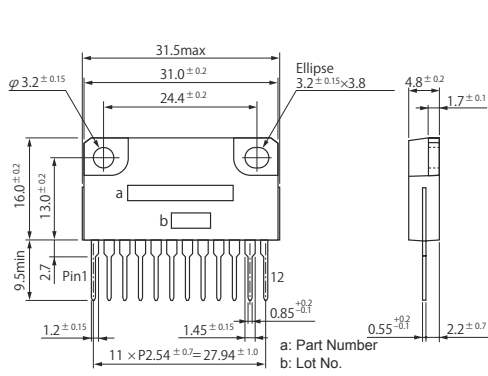
• SIP 12 (SMA12Pin)



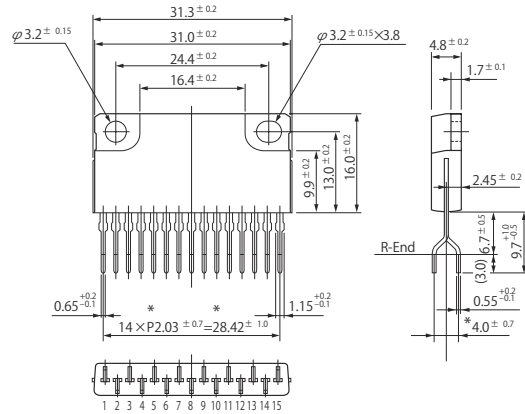
• SIP 15 (SMA15Pin)



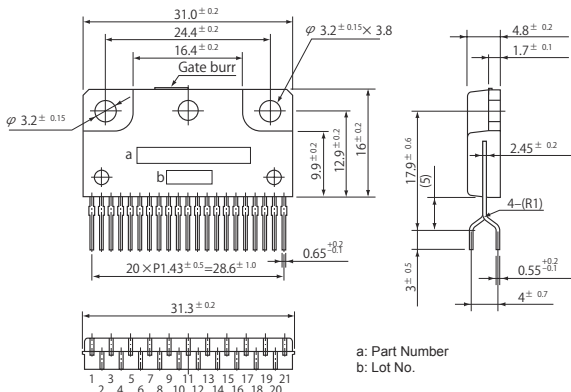
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)