

## Absolute maximum ratings

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

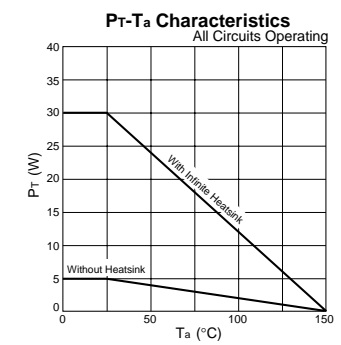
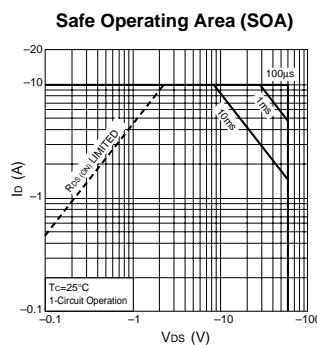
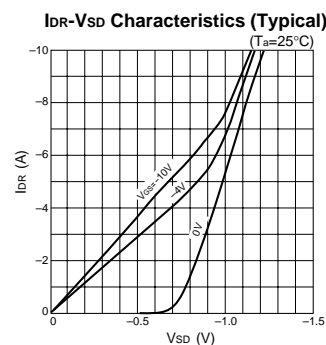
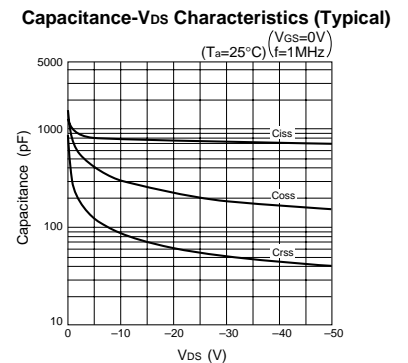
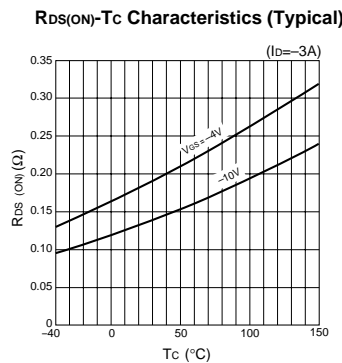
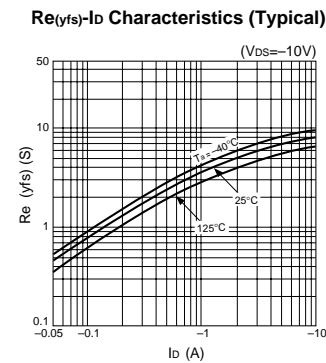
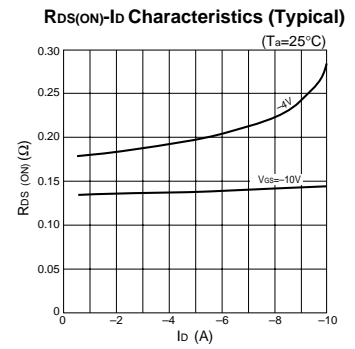
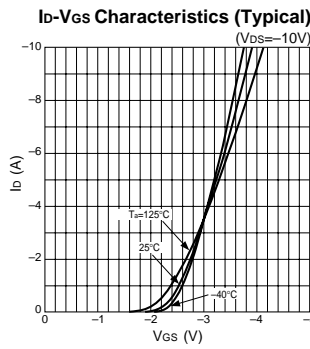
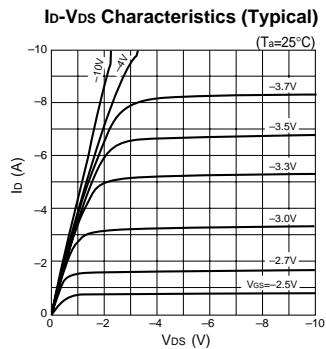
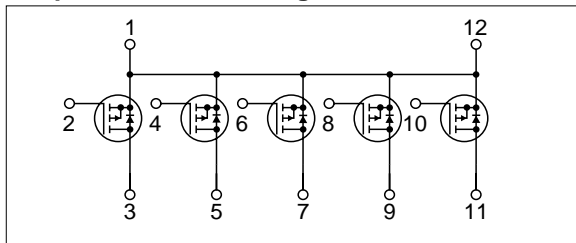
Symbol	Ratings	Unit
$V_{DSS}$	-60	V
$V_{GSS}$	$\pm 20$	V
$I_D$	-5	A
$I_D(\text{pulse})$	-10 ( $PW \leq 1\text{ms}$ , $\text{duty} \leq 25\%$ )	A
$P_T$	5 ( $T_a=25^\circ\text{C}$ , with all circuits operating, without heatsink)	W
	30 ( $T_c=25^\circ\text{C}$ , with all circuits operating, with infinite heatsink)	
$\theta_{j-a}$	25 (Junction-Air, $T_a=25^\circ\text{C}$ , with all circuits operating)	$^\circ\text{C/W}$
$\theta_{j-c}$	4.17 (Junction-Case, $T_c=25^\circ\text{C}$ , with all circuits operating)	$^\circ\text{C/W}$
$V_{ISO}$	1000 (Between fin and lead pin, AC)	V <sub>rms</sub>
$T_{ch}$	150	$^\circ\text{C}$
$T_{stg}$	-40 to +150	$^\circ\text{C}$

## Electrical characteristics

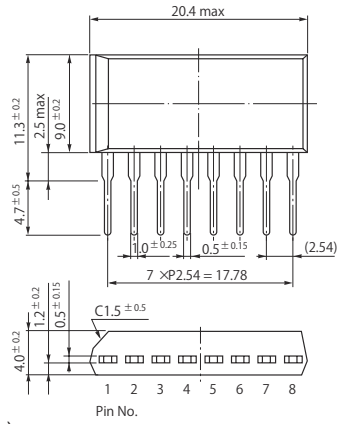
( $T_a=25^\circ\text{C}$ )

Symbol	Specification			Unit	Conditions
	min	typ	max		
$V_{(BR)DSS}$	-60			V	$I_D = -100\mu\text{A}$ , $V_{GS} = 0\text{V}$
$I_{GSS}$			$\pm 100$	nA	$V_{GS} = \pm 20\text{V}$
$I_{DSS}$			-100	$\mu\text{A}$	$V_{DS} = -60\text{V}$ , $V_{GS} = 0\text{V}$
$V_{TH}$	-1.0		-2.0	V	$V_{DS} = -10\text{V}$ , $I_D = -250\mu\text{A}$
$R_{e(yfs)}$	4	6		S	$V_{DS} = -10\text{V}$ , $I_D = -3\text{A}$
$R_{DS(ON)}$		0.14	0.22	$\Omega$	$V_{GS} = -10\text{V}$ , $I_D = -3\text{A}$
$C_{iss}$		790		pF	$V_{DS} = -10\text{V}$ , $f = 1.0\text{MHz}$ , $V_{GS} = 0\text{V}$
$C_{oss}$		310		pF	
$C_{rss}$		90		pF	
$t_{d(on)}$		40		ns	$I_D = -3\text{A}$ , $V_{DD} = -20\text{V}$ , $R_L = 6.67\Omega$ , $V_{GS} = -5\text{V}$ , see Fig. 4 on page 16.
$t_r$		110		ns	
$t_{d(off)}$		160		ns	
$t_f$		80		ns	
$V_{SD}$	-1.0	-1.5		V	
$t_{rr}$		85		ns	$I_{SD} = 3\text{A}$ , $V_{GS} = 0\text{V}$ , $di/dt = 100\text{A}/\mu\text{s}$

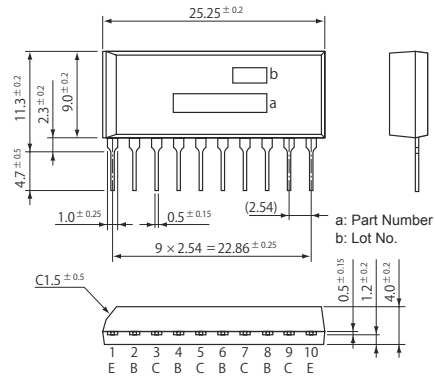
## Equivalent circuit diagram



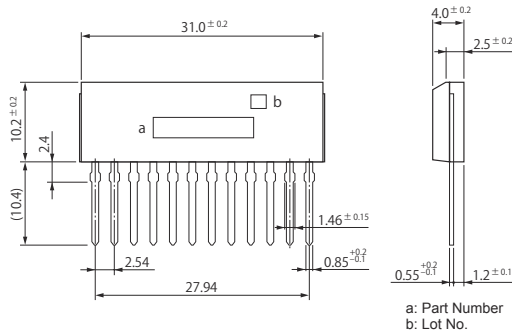
• SIP 8 (STA8Pin)



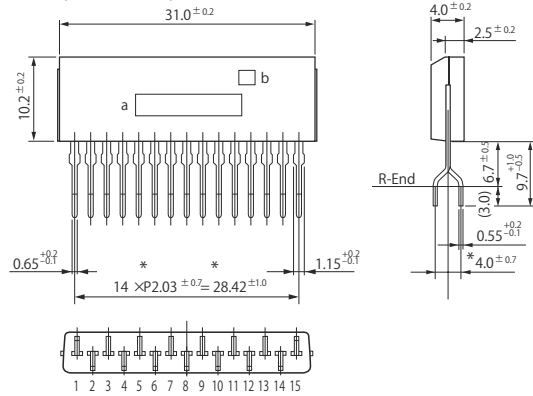
• SIP 10 (STA10Pin)



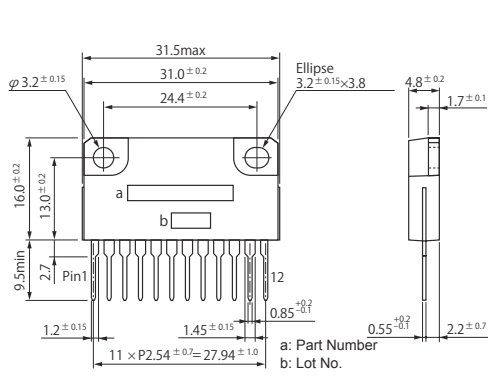
• SIP 12 (SMA12Pin)



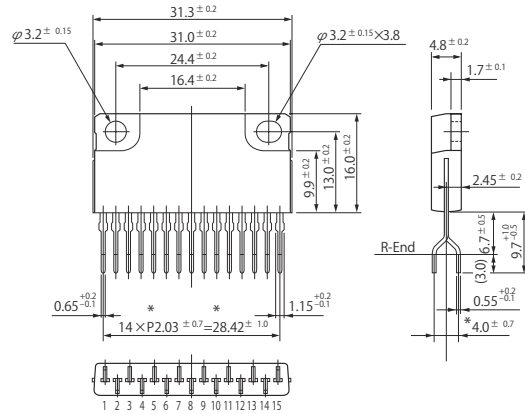
• SIP 15 (SMA15Pin)



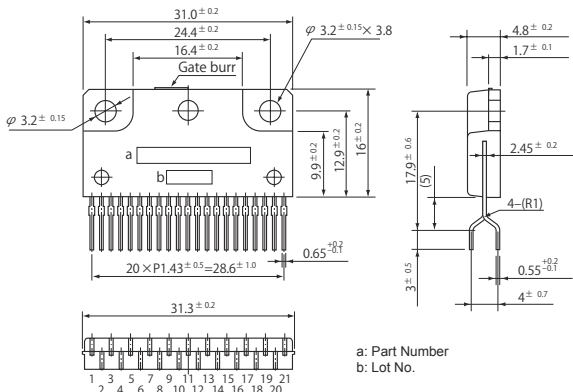
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)