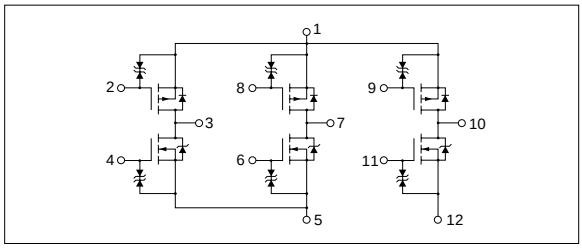
Absolute maximum ratings

(Ta=25°C)

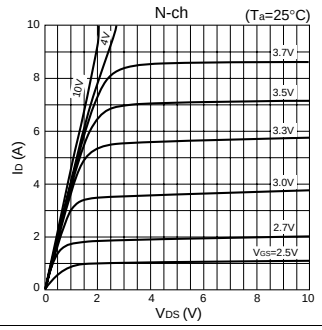
Symbol	Ratings		Unit
	N channel	P channel	
V_{DSS}	60	–60	V
V_{GSS}	±20	±20	V
I_D	6	–6	A
$I_{D(pulse)}$	10 (PW≤1ms, duty≤25%)	–10 (PW≤1ms, duty≤25%)	A
P_T	5 (Ta=25°C, with all circuits operating, without heatsink)		W
	35 (Tc=25°C, with all circuits operating, with infinite heatsink)		W
$\theta_{j\text{-}a}$	25 (Junction-Air, Ta=25°C, with all circuits operating)		°C/W
$\theta_{j\text{-}c}$	3.57 (Junction-Case, Tc=25°C, with all circuits operating)		°C/W
V_{ISO}	1000 (Between fin and lead pin, AC)		Vrms
Tch	150		°C
Tstg	–40 to +150		°C

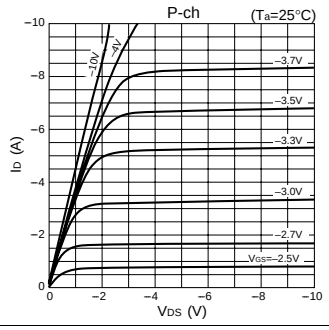
■Equivalent circuit diagram



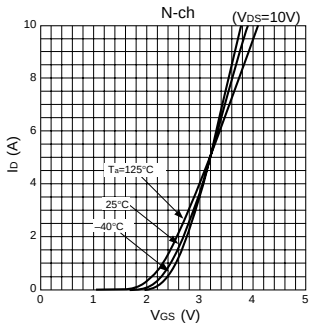
Characteristic curves

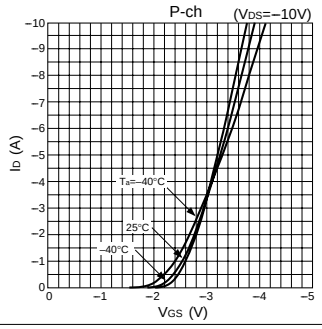
I_D-V_{DS} Characteristics (Typical)



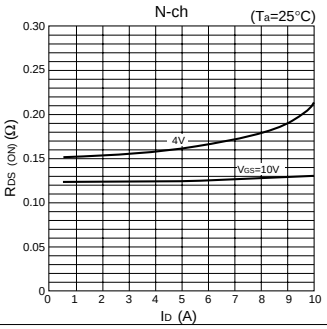


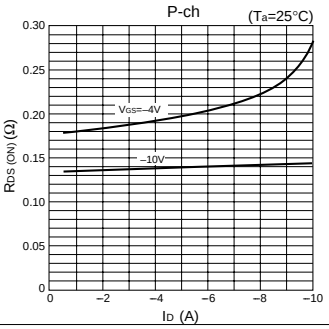
I_D-V_{GS} Characteristics (Typical)



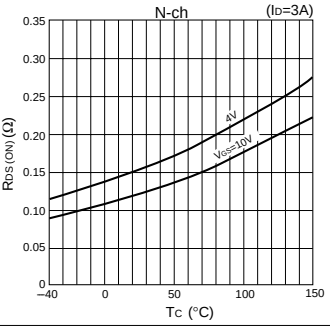


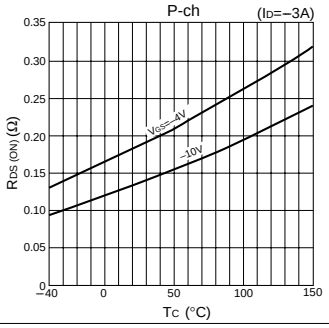
$R_{DS(ON)}$-I_D Characteristics (Typical)





$R_{DS(ON)}$-T_C Characteristics (Typical)





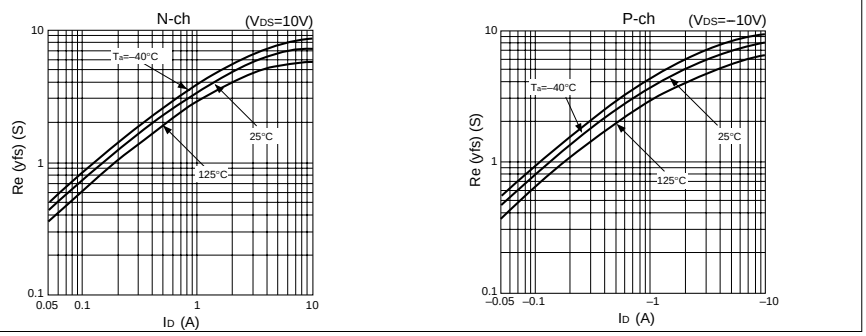
Electrical characteristics

(T_a=25°C)

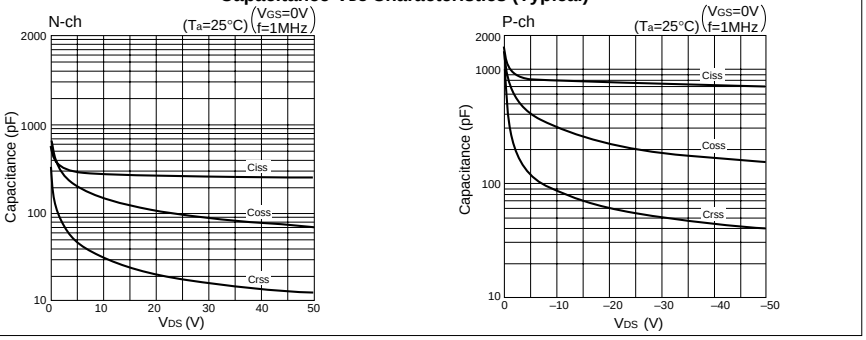
Symbol	N channel					P channel				
	Specification			Unit	Conditions	Specification			Unit	Conditions
	min	typ	max			min	typ	max		
$V_{(BR)DSS}$	60			V	I_D=100μA, V_{GS}=0V	–60			V	I_D=–100μA, V_{GS}=0V
I_{GSS}			±10	μA	V_{GS}=±20V			±10	μA	V_{GS}=±20V
I_{DSS}			100	μA	V_{DS}=60V, V_{GS}=0V			–100	μA	V_{DS}=–60V, V_{GS}=0V
V_{TH}	1.0		2.0	V	V_{DS}=10V, I_D=250μA	–1.0		–2.0	V	V_{DS}=–10V, I_D=–250μA
$Re_{(yfs)}$		5.5		S	V_{DS}=10V, I_D=3A		6		S	V_{DS}=–10V, I_D=–3A
$R_{DS(ON)}$			0.22	Ω	V_{GS}=4V, I_D=3A			0.22	Ω	V_{GS}=–10V, I_D=–3A
Ciss		320		pF	V_{DS}=10V, f=1.0MHz, V_{GS}=0V		790		pF	V_{DS}=–10V, f=1.0MHz, V_{GS}=0V
Coss		160		pF			310		pF	
Crss		35		pF			90		pF	
$td_{(on)}$		16		ns	I_D=3A, V_{DD}=20V, R_L=6.67Ω, V_{GS}=5V, see Fig. 3 on page 16.		40		ns	I_D=–3A, V_{DD}=20V, R_L=6.67Ω, V_{GS}=–5V, see Fig. 4 on page 16.
t_r		65		ns			110		ns	
$td_{(off)}$		70		ns			160		ns	
t_f		45		ns			80		ns	
V_{SD}		1.2		V	I_{SD}=6A, V_{GS}=0V		–1.1		V	I_{SD}=–6A, V_{GS}=0V
t_{rr}		65		ns	I_{SD}=3A, V_{GS}=0V, di/dt=100A/μs		85		ns	I_{SD}=–3A, V_{GS}=0V, di/dt=100A/μs

Characteristic curves

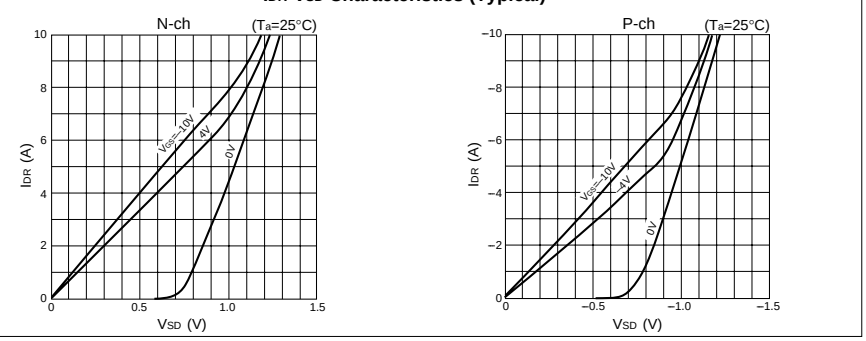
$Re_{(yfs)}$-I_D Characteristics (Typical)



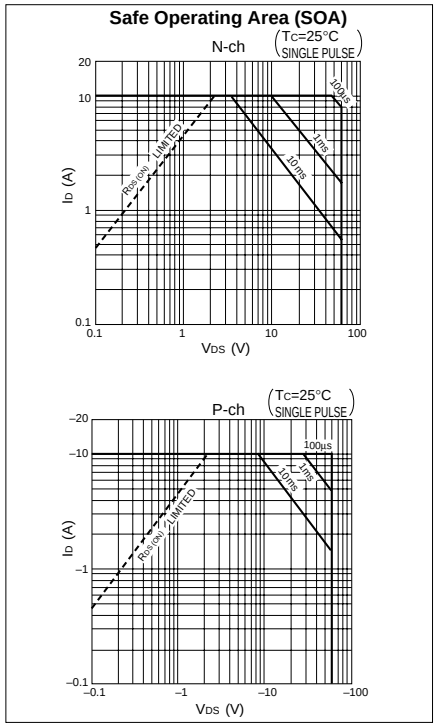
Capacitance-V_{DS} Characteristics (Typical)



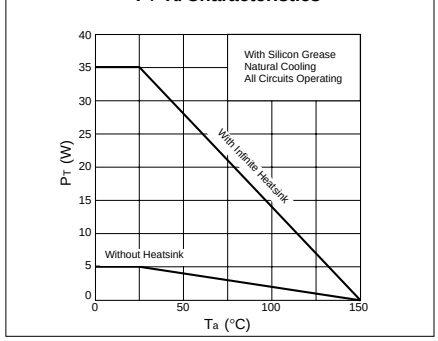
I_{DR}-V_{SD} Characteristics (Typical)



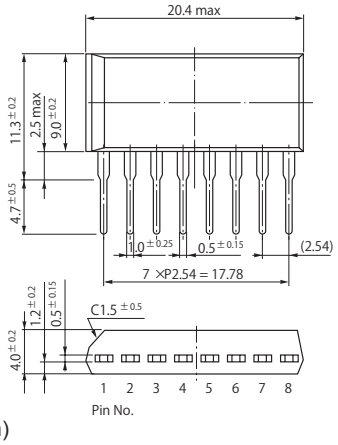
Safe Operating Area (SOA)



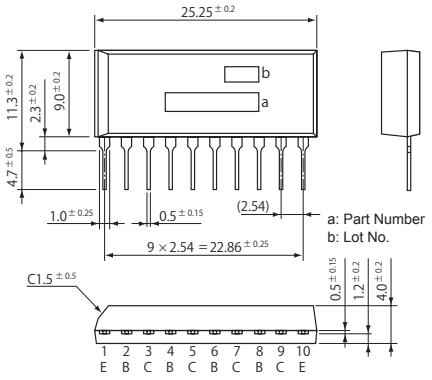
P_T-T_a Characteristics



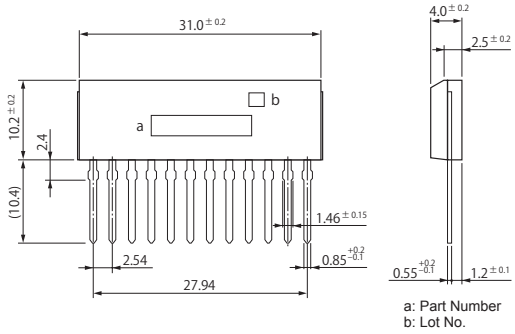
• SIP 8 (STA8Pin)



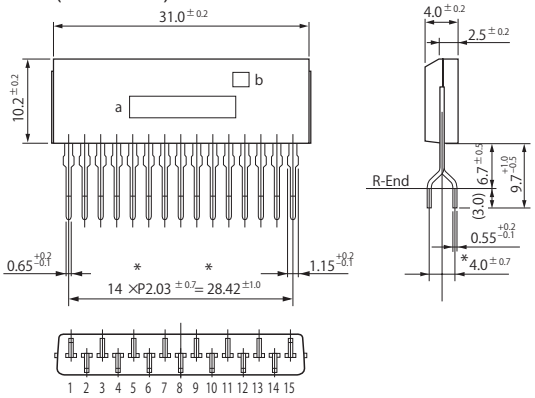
• SIP 10 (STA10Pin)



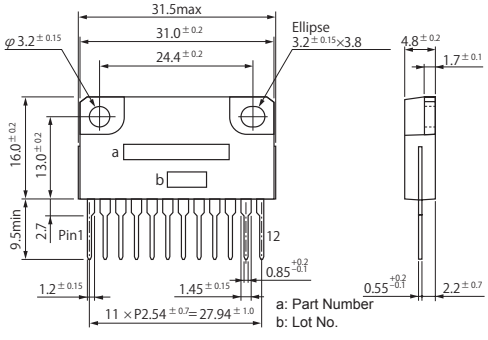
• SIP 12 (SMA12Pin)



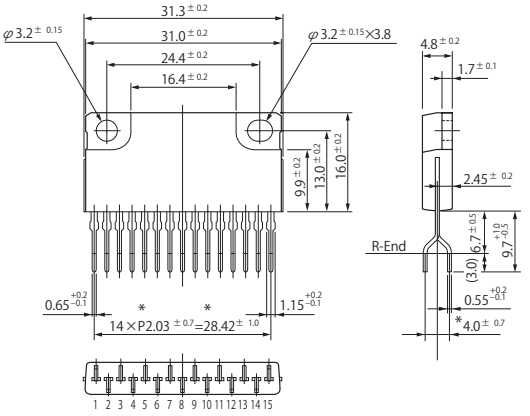
• SIP 15 (SMA15Pin)



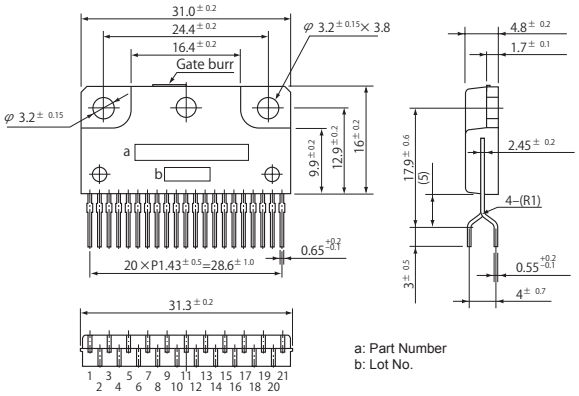
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)