SLA5061

N-channel+P-channel
3-phase motor drive

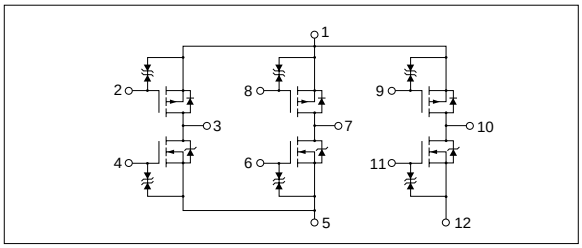
External dimensions Ⓐ ··· SLA (12-pin)

Absolute maximum ratings

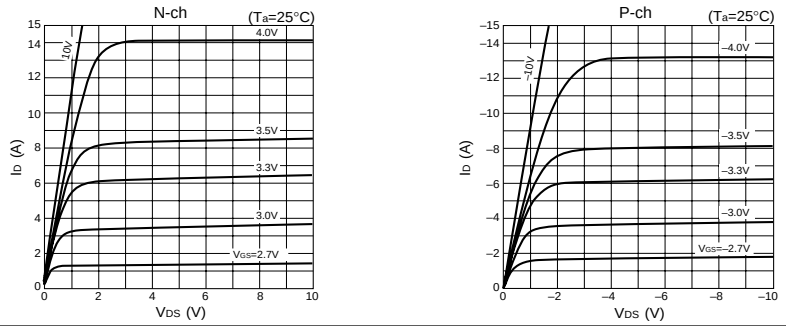
(Ta=25°C)

Symbol	Ratings		Unit
	N channel	P channel	
V_{DSS}	60	–60	V
V_{GSS}	±20	±20	V
I_D	10	–6	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
$\theta_{j\text{-}a}$	25 (Junction-Air, Ta=25°C, with all circuits operating)		°C/W
$\theta_{j\text{-}c}$	3.125 (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

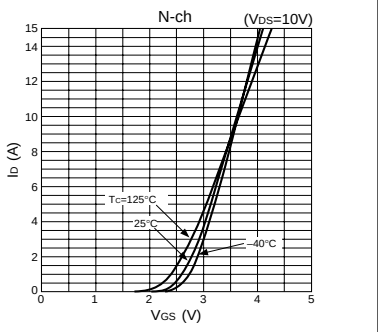
■Equivalent circuit diagram



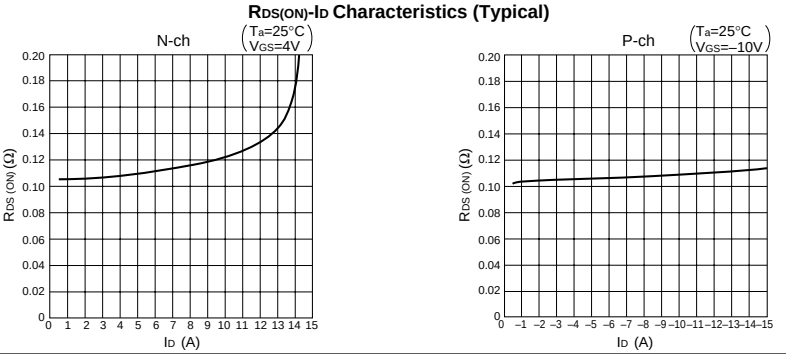
I_D-V_{DS} Characteristics (Typical)



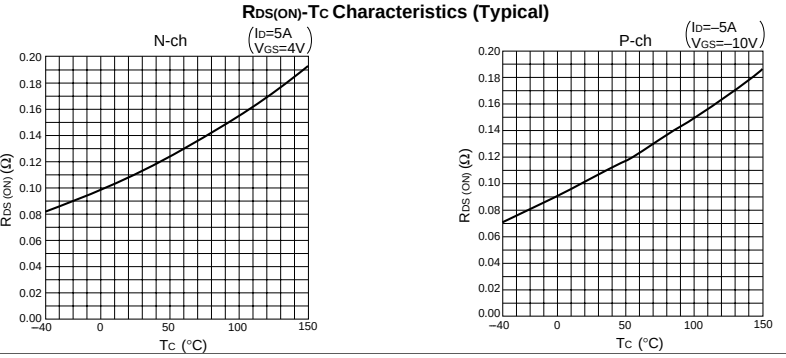
I_D-V_{GS} Characteristics (Typical)



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



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

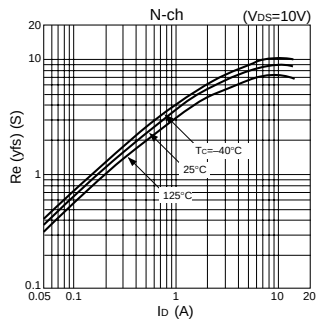


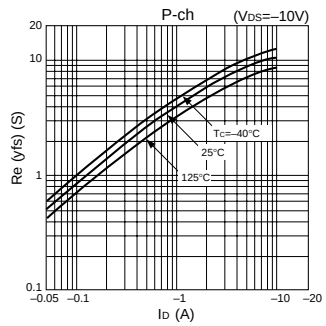
Electrical characteristics

(T_a=25°C)

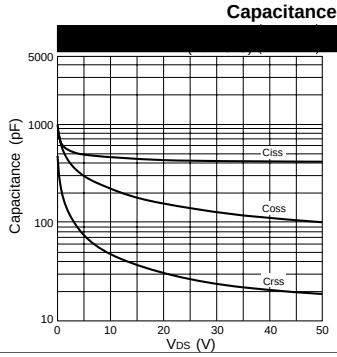
Symbol	N channel					P channel				
	Specification			Unit	Conditions	Specification			Unit	Conditions
	min	typ	max			min	typ	max		
$V_{(BR)DSS}$	60			V	I_D=100μA, V_{GS}=0V	–60			V	I_D=–100μA, V_{GS}=0V
I_{GSS}			±10	μA	V_{GS}=±20V			∓	μA	V_{GS}=±20V
I_{DSS}			100	μA	V_{DS}=60V, V_{GS}=0V			–100	μA	V_{DS}=–60V, 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
$Re_{(yfs)}$		8		S	V_{DS}=10V, I_D=5A		8.7		S	V_{DS}=–10V, I_D=–5A
$R_{DS(ON)}$			0.14	Ω	V_{GS}=4V, I_D=5A			0.14	Ω	V_{GS}=–10V, I_D=–5A
Ciss		460		pF	V_{DS}=10V, f=1.0MHz, V_{GS}=0V		1200		pF	V_{DS}=–10V, f=1.0MHz, V_{GS}=0V
Coss		225		pF			440		pF	
Crss		50		pF			120		pF	
$td_{(on)}$		25		ns	I_D=5A, V_{DD}≒ R_L=4Ω, V_{GS}=5V, see Fig. 3 on page 16.		50		ns	I_D=–5A, V_{DD}≒ R_L=4Ω, V_{GS}=–5V see Fig. 4 on page 16.
t_r		110		ns			170		ns	
$td_{(off)}$		90		ns			180		ns	
t_f		55		ns			100		ns	
V_{SD}		1.15		V	I_{SD}=10A, V_{GS}=0V		–1.25		V	I_{SD}=–10A, V_{GS}=0V
t_{rr}		75		ns	I_{SD}=5A, V_{GS}=0V di/dt=100A/μs		100		ns	I_{SD}=–5A, V_{GS}=0V di/dt=100A/μs

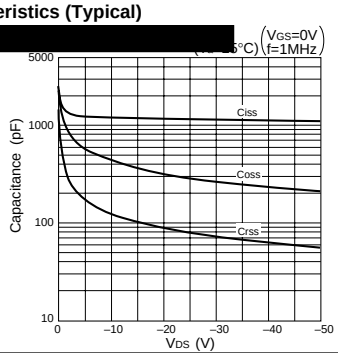
$Re_{(yfs)}$-I_D Characteristics (Typical)



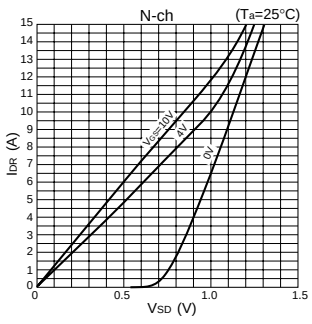


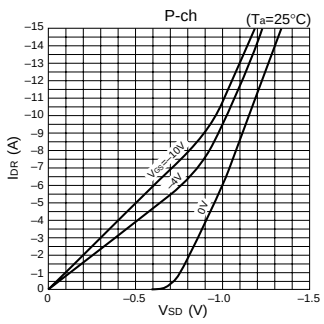
Capacitance-V_{DS} Characteristics (Typical)



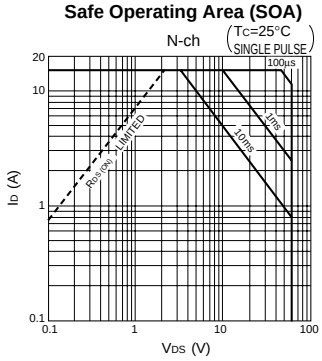


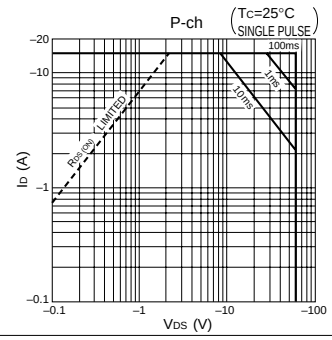
I_{DR}-V_{SD} Characteristics (Typical)



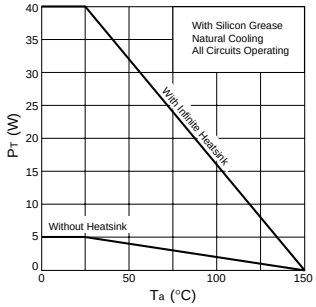


Safe Operating Area (SOA)

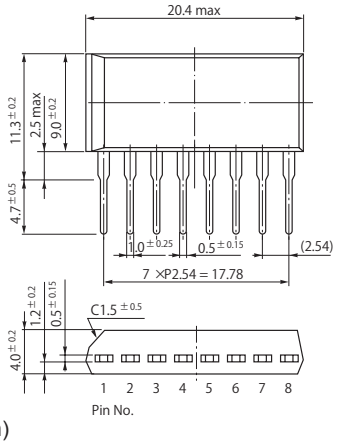




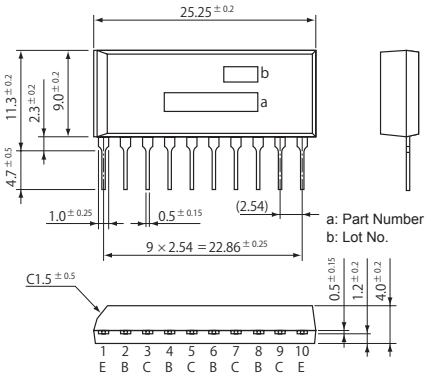
P_T-T_a Characteristics



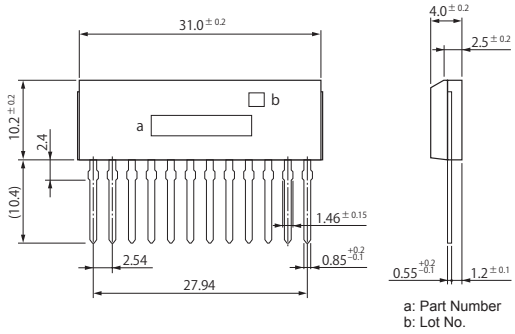
• SIP 8 (STA8Pin)



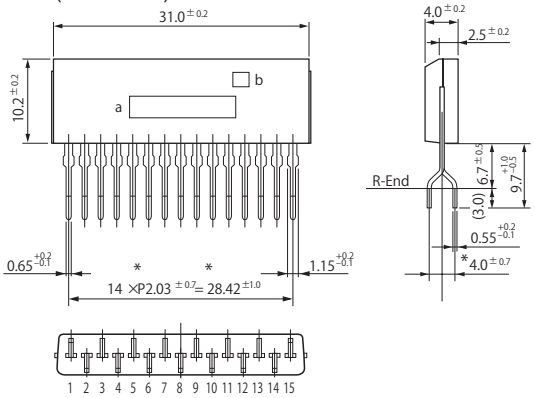
• SIP 10 (STA10Pin)



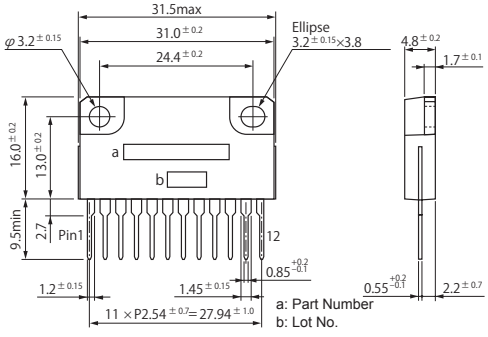
• SIP 12 (SMA12Pin)



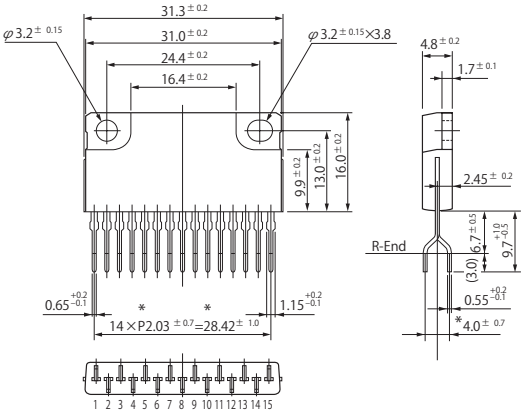
• SIP 15 (SMA15Pin)



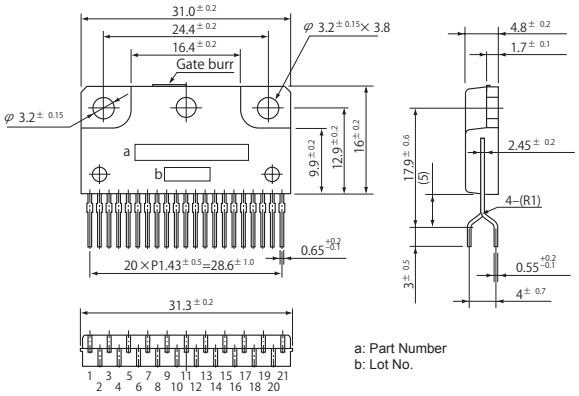
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)