

Absolute maximum ratings

(Ta=25°C)

Symbol	Ratings	Unit
V _{DSS}	60	V
V _{GSS}	±20	V
I _D	10	A
I _D (pulse)	10 (PW≤1ms, duty≤25%)	A
E _{AS} *	30	mJ
P _T	5 (Ta=25°C, with all circuits operating, without heatsink)	W
	30 (Tc=25°C, with all circuits operating, with infinite heatsink)	
θ _{J-A}	25 (Junction-Air, Ta=25°C, with all circuits operating)	°C/W
θ _{J-C}	4.17 (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

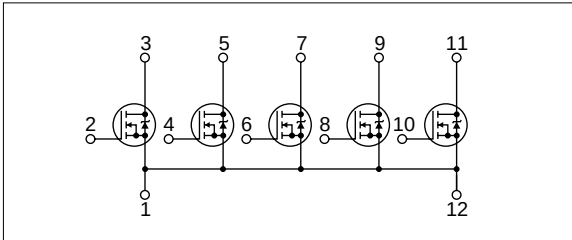
* : V_{DD}=40V, L=20mH, I_D=1A, unclamped, R_G=50Ω, see Fig. E on page 15.

Electrical characteristics

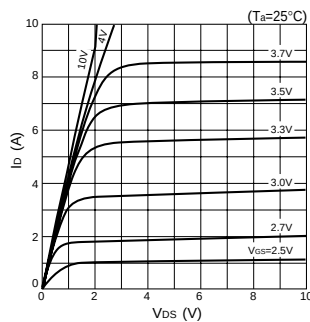
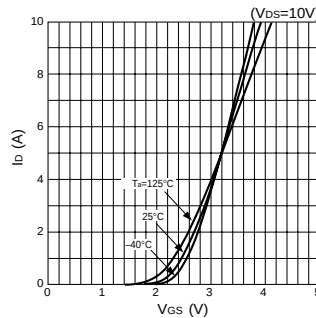
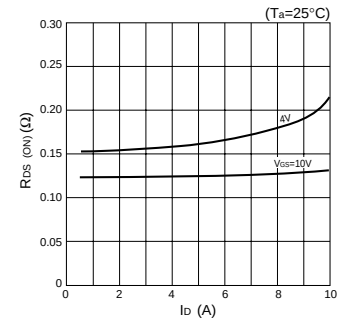
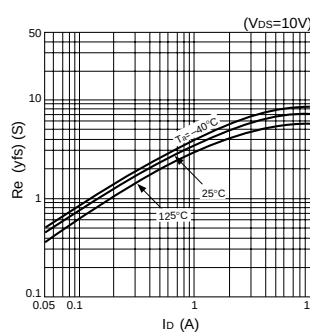
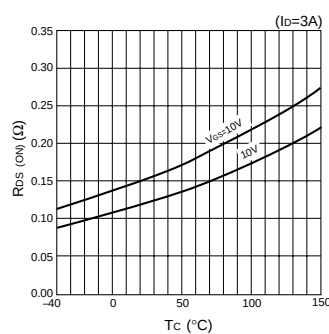
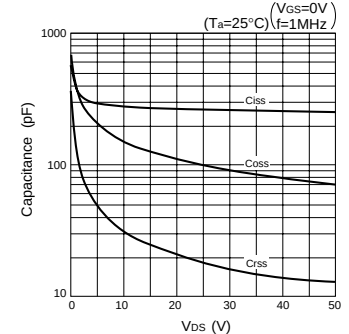
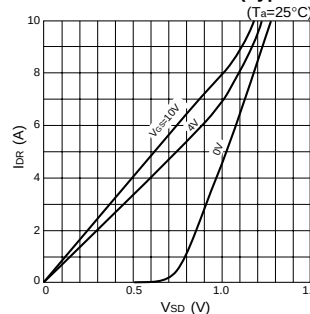
(Ta=25°C)

Symbol	Specification			Unit	Conditions
	min	typ	max		
V(BR)DSS	60			V	I _D =100μA, V _{GS} =0V
I _{GSS}			±100	nA	V _{GS} =±20V
I _{DSS}			100	μA	V _{DS} =60V, V _{GS} =0V
V _{TH}	1.0		2.0	V	V _{DS} =10V, I _D =250μA
Re(yfs)	3.7	5.5		S	V _{DS} =10V, I _D =3A
R _{DS(ON)}		0.16	0.22	Ω	V _{GS} =4V, I _D =3A
C _{iss}		320		pF	V _{DS} =10V, f=1.0MHz, V _{GS} =0V
C _{oss}		160		pF	
C _{rss}		35		pF	
td(on)		16		ns	I _D =3A, V _{DD} =20V, R _L =6.67Ω, V _{GS} =5V, see Fig. 3 on page 16.
tr		65		ns	
td(off)		70		ns	
tf		45		ns	
V _{SD}		1.05	1.5	V	I _{SD} =5A, V _{GS} =0V
t _{rr}		65		ns	I _{SD} =3A, V _{GS} =0V, di/dt=100A/μs

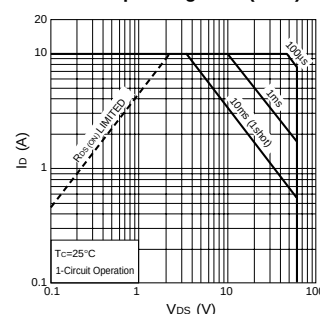
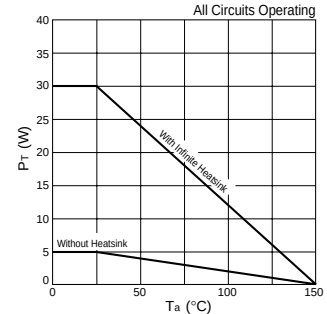
Equivalent circuit diagram



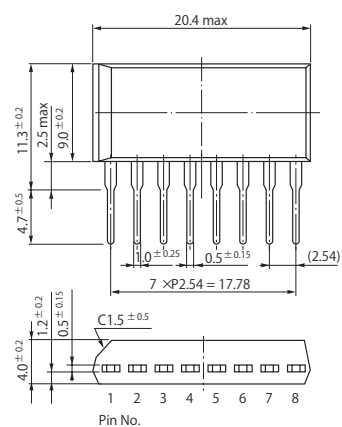
Characteristic curves

I_D-V_{DS} Characteristics (Typical)I_D-V_{GS} Characteristics (Typical)R_{DS(ON)}-I_D Characteristics (Typical)Re(yfs)-I_D Characteristics (Typical)R_{DS(ON)}-T_C Characteristics (Typical)Capacitance-V_{DS} Characteristics (Typical)I_{DR}-V_{SD} Characteristics (Typical)

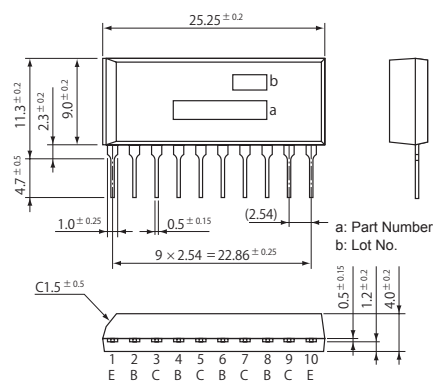
Safe Operating Area (SOA)

P_T-T_A Characteristics

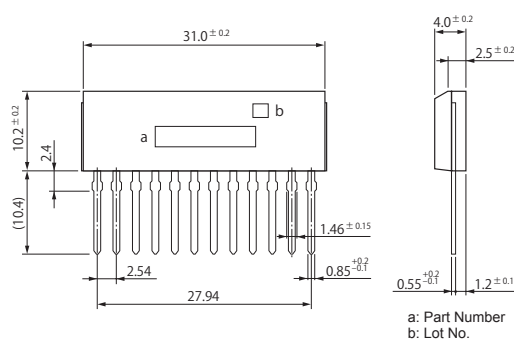
• SIP 8 (STA8Pin)



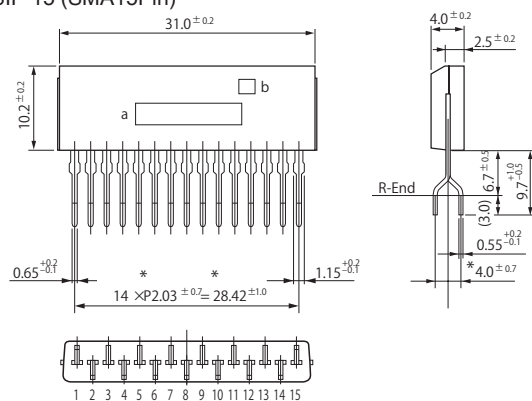
• SIP 10 (STA10Pin)



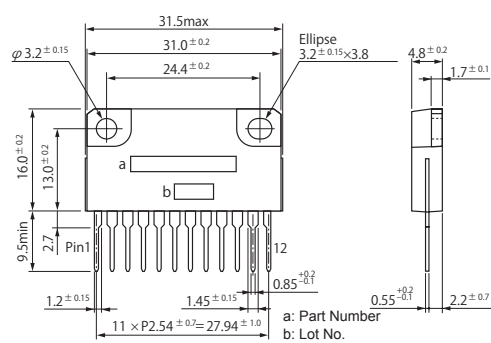
• SIP 12 (SMA12Pin)



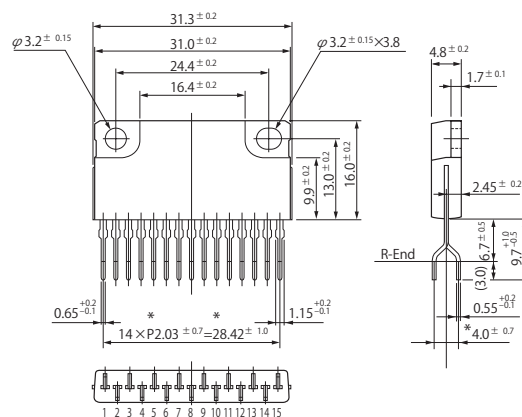
• SIP 15 (SMA15Pin)



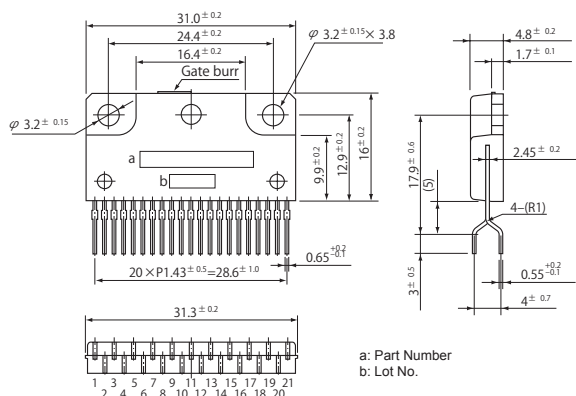
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)