

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

* : $V_{DD}=25V$, $L=4.4mH$, $I_D=7A$, unclamped, $R_G=50\Omega$, see Fig. E on page 15.

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

Symbol	Specification			Unit	Conditions
	min	typ	max		
V(BR)DSS	250			V	I _D =100μA, V _{GS} =0V
I _{GSS}			±100	nA	V _{GS} =±20V
I _{DSS}			100	μA	V _{DS} =250V, V _{GS} =0V
V _{TH}	2.0		4.0	V	V _{DS} =10V, I _D =1mA
Re(yfs)	4.5	6.5		S	V _{DS} =10V, I _D =3.5A
R _{DS(ON)}		0.2	0.25	Ω	V _{GS} =10V, I _D =3.5A
C _{iss}		850		pF	V _{DS} =10V, f=1.0MHz, V _{GS} =0V
C _{OSS}		550		pF	
C _{RSS}		250		pF	
td(on)		20		ns	I _D =3.5A, V _{DD} ≐100V, R _L =28.6Ω, V _{GS} =10V, see Fig. 3 on page 16.
tr		25		ns	
td(off)		90		ns	
tf		70		ns	
V _{SD}		1.1	1.5	V	I _{SD} =7A, V _{GS} =0V
trr		85		ns	I _{SD} =3.5A, V _{GS} =0V, di/dt=100A/μs

Figure 10 is a graph showing the drain resistance $R_{DS(on)}$ (in Ω) on the y-axis versus the drain current I_D (in A) on the x-axis. The gate-source voltage V_{GS} is fixed at 10V. The y-axis ranges from 0 to 0.3 with major grid lines every 0.05 units. The x-axis ranges from 0 to 7 with major grid lines every 1 unit. The curve starts at approximately 0.18 Ω at $I_D = 0$, drops sharply to about 0.15 Ω at $I_D \approx 0.2$ A, and then gradually increases to approximately 0.20 Ω at $I_D = 7$ A.

Figure 1 is a log-log plot showing the real part of the admittance, $\text{Re } (y)$ in Siemens (S), versus the drain current, I_D in Amperes (A), for the 2N3866 JFET at $V_{DS} = 10V$. The plot includes three curves for different temperatures: 10°C , 25°C , and 125°C . The y-axis ranges from 0.3 to 20 S, and the x-axis ranges from 0.05 to 7 A. The curves show that $\text{Re } (y)$ increases with I_D and is higher at lower temperatures.

Graph of $R_{DS(on)}$ vs T_c for the MOSFET. The y-axis is $R_{DS(on)}$ (Ω) and the x-axis is T_c ($^{\circ}C$). The curve shows $R_{DS(on)}$ increasing with T_c . Parameters: $I_D=3.5A$, $V_{GS}=10V$.

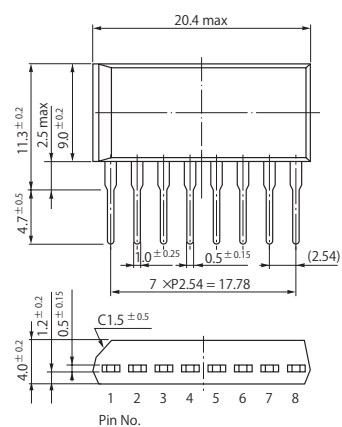
Graph of drain current I_D (A) versus drain-source voltage V_{DS} (V) for $V_{GS} = 0V$. The curve shows a threshold voltage of approximately 0.4V. For $V_{DS} > 0.4V$, the current follows a square-law relationship, reaching 7A at $V_{DS} = 1.0V$.

The graph shows the relationship between Power Dissipation (P_r) and Ambient Temperature (T_a) for three different cooling conditions. The y-axis represents P_r in Watts (W), ranging from 0 to 40. The x-axis represents T_a in degrees Celsius ($^{\circ}\text{C}$), ranging from 0 to 150. The three conditions are:

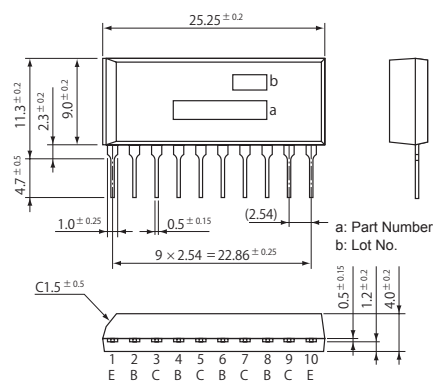
- With Silicone Grease, Natural Cooling, All Circuits Operating:** This condition is represented by a horizontal line at $P_r = 35$ W from $T_a = 0$ to $T_a = 25$ $^{\circ}\text{C}$, followed by a diagonal line with a negative slope passing through points like (50, 25), (100, 15), and (150, 0).
- With Infinite Heatsink:** This condition is represented by a horizontal line at $P_r = 35$ W from $T_a = 0$ to $T_a = 25$ $^{\circ}\text{C}$, followed by a diagonal line with a negative slope passing through points like (50, 25), (100, 15), and (150, 0).
- Without Heatsink:** This condition is represented by a horizontal line at $P_r = 5$ W from $T_a = 0$ to $T_a = 25$ $^{\circ}\text{C}$, followed by a diagonal line with a negative slope passing through points like (50, 4), (100, 2), and (150, 0).

T_a ($^{\circ}\text{C}$)	P_r (W) - With Silicone Grease	P_r (W) - With Infinite Heatsink	P_r (W) - Without Heatsink
0	35	35	5
25	35	35	5
50	25	25	4
100	15	15	2
150	0	0	0

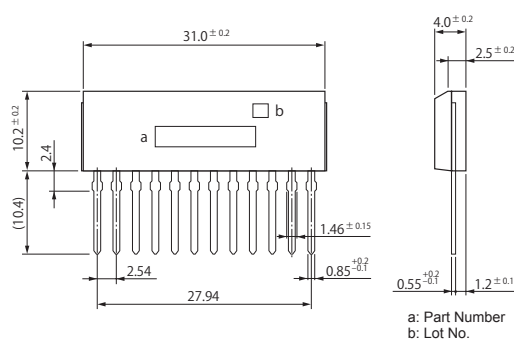
• SIP 8 (STA8Pin)



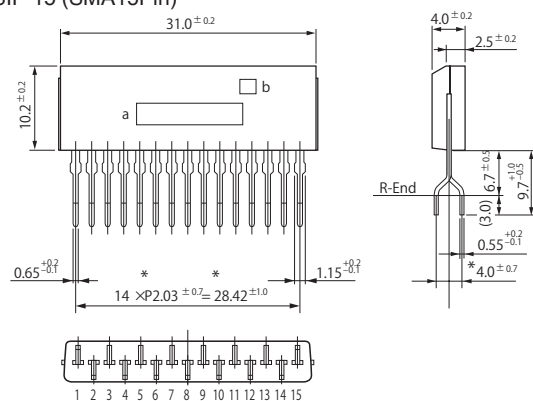
• SIP 10 (STA10Pin)



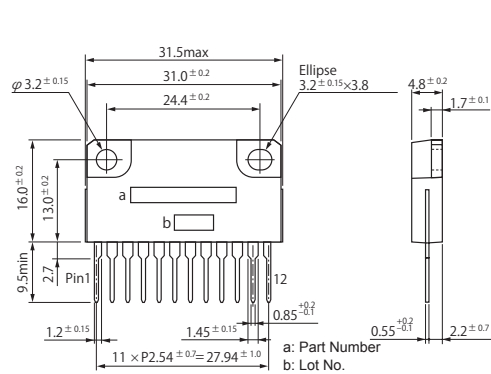
• SIP 12 (SMA12Pin)



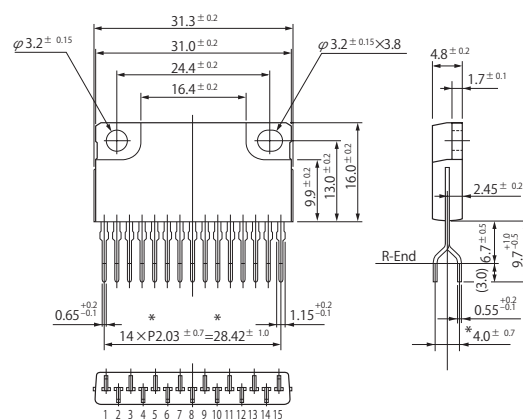
• SIP 15 (SMA15Pin)



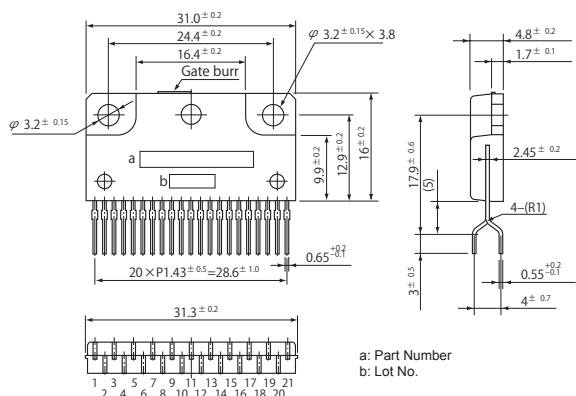
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)