

### Absolute maximum ratings

(Ta=25°C)

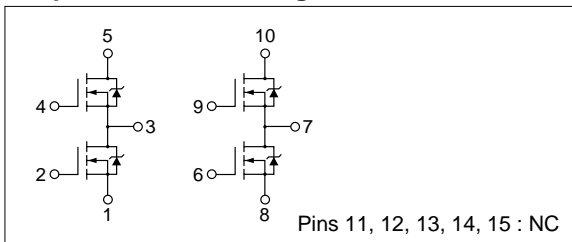
Symbol	Ratings	Unit
V <sub>DSS</sub>	60	V
V <sub>GSS</sub>	±20	V
I <sub>D</sub>	5	A
I <sub>D</sub> (pulse)	8 (PW≤1ms, Du≤25%)	A
P <sub>T</sub>	4.8 (Ta=25°C, with all circuits operating, without heatsink)	W
	25 (Tc=25°C, with all circuits operating, with infinite heatsink)	
θ <sub>J-a</sub>	26 (Junction-Air, Ta=25°C, with all circuits operating)	°C/W
θ <sub>J-c</sub>	5 (Junction-Case, Tc=25°C, with all circuits operating)	°C/W
V <sub>ISO</sub>	1000 (Between fin and lead pin, AC)	V <sub>rms</sub>
T <sub>ch</sub>	150	°C
T <sub>stg</sub>	-40 to +150	°C

### Electrical characteristics

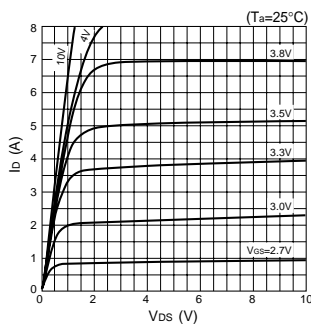
(Ta=25°C)

Symbol	Specification			Unit	Conditions
	min	typ	max		
V <sub>(BR)DSS</sub>	60			V	I <sub>D</sub> =100μA, V <sub>GS</sub> =0V
I <sub>GSS</sub>			±100	nA	V <sub>GS</sub> =±20V
I <sub>DSS</sub>			100	μA	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V
V <sub>TH</sub>	1.0		2.0	V	V <sub>BS</sub> =10V, I <sub>D</sub> =250μA
Re(yfs)		5.5		S	V <sub>DS</sub> =10V, I <sub>D</sub> =3A
R <sub>DS(ON)</sub>			0.3	Ω	V <sub>GS</sub> =4V, I <sub>D</sub> =3A
C <sub>iss</sub>		320		pF	V <sub>DS</sub> =10V, f=1.0MHz, V <sub>GS</sub> =0V
C <sub>oss</sub>		160		pF	
C <sub>rss</sub>		35		pF	
td(on)		16		ns	I <sub>D</sub> =3A, V <sub>DD</sub> ≐20V, R <sub>L</sub> =6.67Ω, V <sub>GS</sub> =5V, see Fig. 3 on page 16.
tr		65		ns	
td(off)		70		ns	
tf		45		ns	
V <sub>SD</sub>		1.2		V	
t <sub>rr</sub>		65		ns	I <sub>SD</sub> =4A, V <sub>GS</sub> =0V
					I <sub>SD</sub> =3A, V <sub>GS</sub> =0V, di/dt=100A/μs

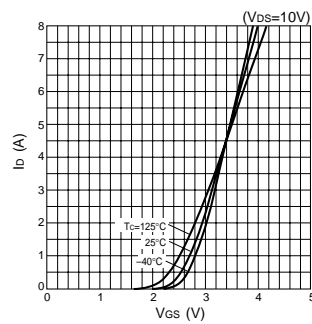
### Equivalent circuit diagram



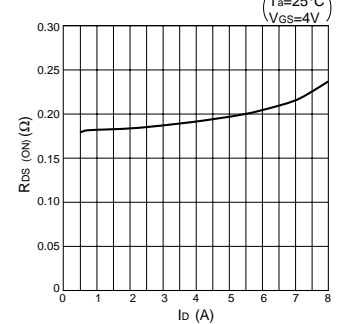
I<sub>D</sub>-V<sub>DS</sub> Characteristics (Typical)



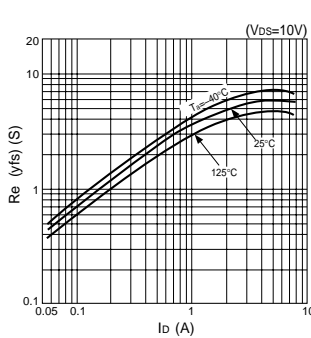
I<sub>D</sub>-V<sub>GS</sub> Characteristics (Typical)



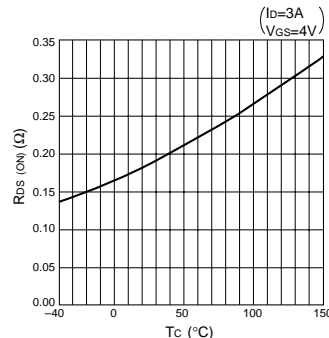
R<sub>DS(ON)</sub>-I<sub>D</sub> Characteristics (Typical)



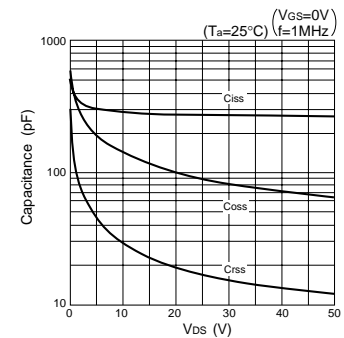
Re(yfs)-I<sub>D</sub> Characteristics (Typical)



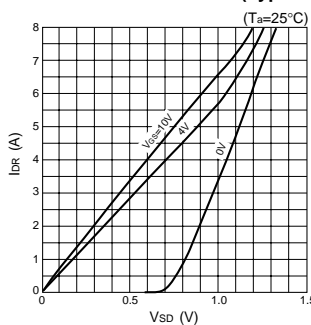
R<sub>DS(ON)</sub>-T<sub>C</sub> Characteristics (Typical)



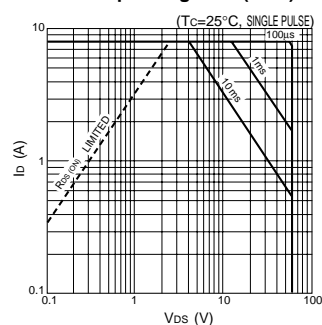
Capacitance-V<sub>DS</sub> Characteristics (Typical)



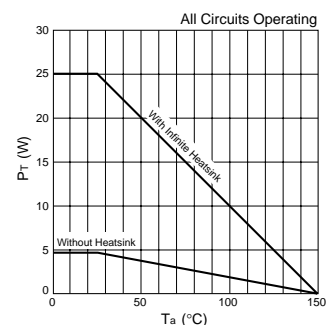
I<sub>DR</sub>-V<sub>SD</sub> Characteristics (Typical)



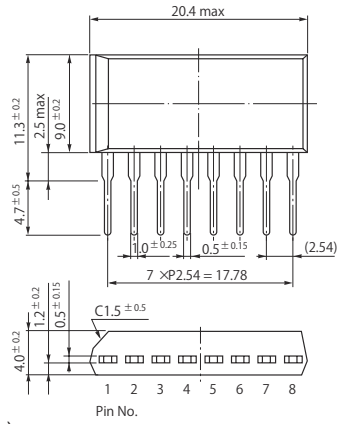
Safe Operating Area (SOA)



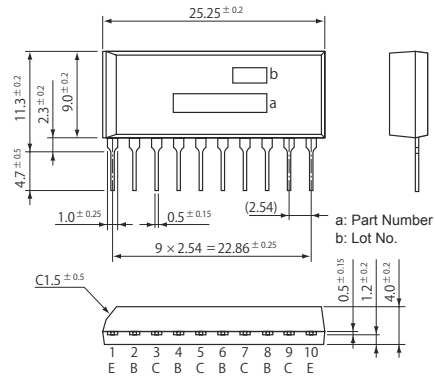
P<sub>T</sub>-T<sub>a</sub> Characteristics



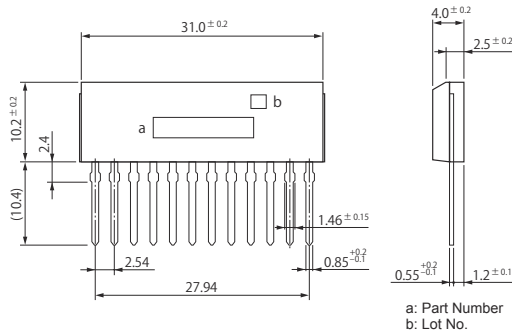
• SIP 8 (STA8Pin)



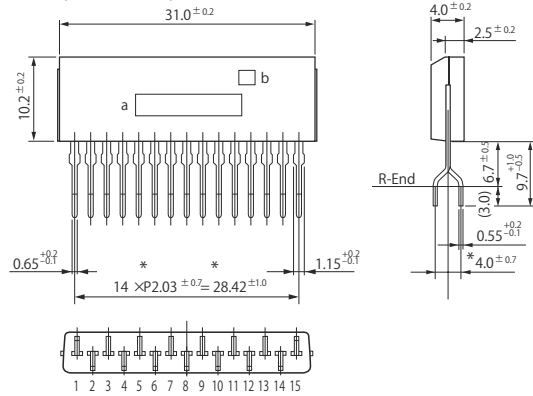
• SIP 10 (STA10Pin)



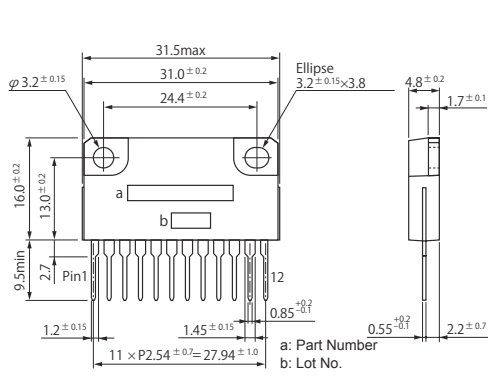
• SIP 12 (SMA12Pin)



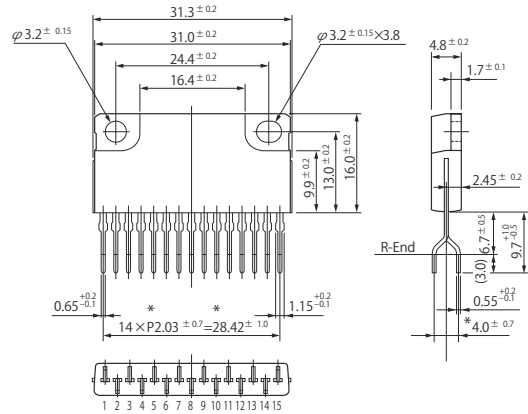
• SIP 15 (SMA15Pin)



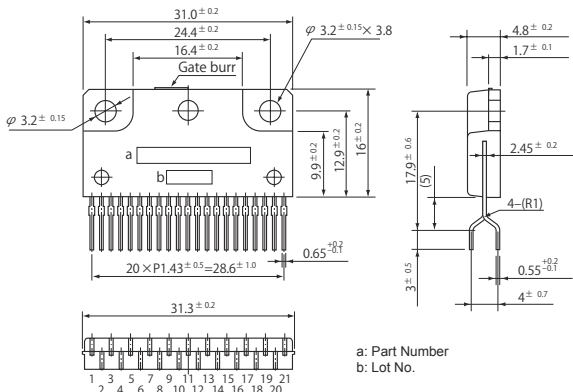
• SIP 12 with Fin (SLA12Pin)



• SIP 15 with Fin (SLA15Pin)



• SIP 21 with Fin (SLA21Pin)



(Unit:mm)